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Welcome

On behalf of the Geodetic Society of Japan, the Seismological Society of Japan (SSJ), and the IAG-IASPEI 2017 Local Organizing Committee, we would like to welcome you to the Joint Scientific Assembly of the International Association of Geodesy (IAG) and International Association of Seismology and Physics of the Earth's Interior (IASPEI) to be held in Kobe, Japan from July 30 through August 4, 2017.

The city of Kobe experienced devastating earthquake in 1995. But 22 years after it, the city has been completely recovered to have a scientific assembly accommodating a wide variety of research fields of geodesy and seismology.

The development in our knowledge of earthquake in the last 20 years largely depends on the drastic improvement of observation and network system. Deployment of nation-wide seismological and geodetic network in Japan with more than 1,000 stations lead new and important discoveries such as slow earthquakes and non-volcanic tremors that play important roles preparatory process of earthquakes. Now we have a tool to monitor the process leading to interplate earthquakes though earthquake prediction is still difficult. On-land networks, together with newly developed sea-floor geodetic observation, provided invaluable datasets at the 2011 Tohoku earthquake to unveil essential features of great interplate earthquakes, although it caused a huge damage and tremendous loss of lives along the Japanese northeastern coasts. The knowledge of earthquake process is also used to mitigate disasters owing to large earthquakes. The Headquarters of Earthquake Research Promotion, which established 20 years ago after the Kobe Earthquake, evaluates national seismic hazards as well as monthly seismic activities to disseminate the knowledge of earthquakes and their risks.

The venue, Kobe International Conference Center are located in Port island, easily accessible with new transport system "Port Liner" from downtown Kobe. Travel to/from Kobe is easy with various public and private rail service, which provides a rapid access to Kansai International Airport, a major gateway to Japan. Very frequent high-speed train service (Shinkansen), connecting major cities in Japan, is also available in Kobe. We hope all the participants enjoy the conference in a comfortable environment for scientific meeting.

Sincerely yours,

Koshun Yamaoka
President, Seismological Society of Japan
Kosuke Heki
President, Geodetic Society of Japan

International Association of Geodesy (IAG)

President	Harald SCHUH
Secretary General	Hermann DREWES

The Mitteleuropäische Gradmessung (Central European Arc Measurement) was created in 1862 as the first international scientific organization of significance. In 1867 it expanded to the Europäische Gradmessung (European Arc Measurement), and in 1886 to the Internationale Erdmessung (International Association of Geodesy, Association Géodésique Internationale). At the first General Assembly of IUGG (Rome, 2-10 May 1922) it became one of the five constituent sections of the Union. It took its present name at the Stockholm General Assembly of IUGG (1930).

The Mission of IAG is the advancement of geodesy. It is implemented by furthering geodetic theory through research and teaching, by collecting, analyzing, modelling and interpreting observational data, by stimulating technological development and by providing a consistent representation of the figure, rotation, and gravity field of the Earth and planets, and their temporal variations. The objectives cover the study of all geodetic problems related to Earth observation and global change. This comprises the establishment of reference systems, monitoring the gravity field and rotation of the Earth, the deformation of the Earth surface including ocean and ice, and positioning for interdisciplinary use. IAG shall initiate, coordinate, and promote international cooperation and knowledge exchange through symposia, workshops, summer schools, publications, and other means of communication. The goal is to foster the development of geodetic activities and infrastructure in all regions of the world, taking into consideration the specific situation of developing countries. The structure includes the following components:

- Commission 1: Reference Frames
- Commission 2: Gravity Field
- Commission 3: Geodynamics and Earth Rotation
- Commission 4: Positioning and Applications
- Inter-commission Committee on Theory
- Global Geodetic Observing System (GGOS)
- 14 International Scientific Services

International Association of Seismology and Physics of the Earth's Interior (IASPEI)

President: Thorne LAY
Secretary General: Johannes SCHWEITZER

At the Sixth International Congress of Geography (London, 1895), Professor G. Gerland (Germany) presented E. v. Rebeur-Paschwitz's ideas about the necessity of a structured international cooperation in seismology. At the Seventh Congress (Berlin, 1899), the Commission Séismologique Permanente was established. The subsequent conferences in Strasbourg (1901 & 1903) led to the foundation of the Association Internationale de Séismologie in 1904. At the first IUGG General Assembly (Rome, 1922), it became one of the constituent Sections of the Union. It took its present name at the IX IUGG General Assembly (Bruxelles, 1951).

IASPEI promotes the study of earthquakes and other seismic sources, the propagation of seismic waves, and the Earth's internal structure, properties, and processes. Scientists participating in IASPEI initiate and co-ordinate research and scientific exchanges that demand cooperation among countries. Work on specific topics is carried out through commissions, sub-commissions, committees and working groups formed to meet specific needs of new, exciting problems as they emerge. IASPEI's' structure and its many scientific activities are categorised by the following themes:

- Earth Structure and Geodynamics
- Earthquake Generation Process – Physics, Modelling and Monitoring for Forecast
- Earthquake Hazard, Risk and Strong Ground Motion
- Earthquake Source Mechanics
- Education and Outreach
- Seismological Observation and Interpretation
- Tectonophysics and Crustal Structure
- Terrestrial Heat Flow
- Regional Seismological Commissions in Africa (AfSC), Asia (ASC), Europe (ESC) and Latin America and the Caribbean (LACSC)

Further information can be found on IASPEI's web-site www.iaspei.org

Coordination Committee

Chair	Koshun Yamaoka
Vice-Chair	Kosuke Heki
Secretary	Masataka Kinoshita
	Kenji Satake
	Takuya Nishimura
	Masato Furuya
Member	Fumihiko Imamura
	Satoru Oishi
	Kazushige Obara
	Osamu Kamigaichi
	Yoshiaki Kawata
	Hodaka Kawahata
	Yoshihiro Sawada
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	Eikichi Tsukuda
	Mikio Tobita
	Kinya Nishigami
	Yoshifumi Nogi
	Haruo Hayashi
	Toshiaki Yokoi

Joint IAG-IASPEI Program Committee

Hermann Drewes, IAG Secretary General
Johannes Schweitzer, IASPEI Secretary General
Kenji Satake. LOC chair
Aitaro Kato, LOC member
Takuto Maeda, LOC member
Yoshiyuki Tanaka, LOC member

Local Organizing Committee

Chair	Kenji Satake
Vice-Chair	Kosuke Heki
Member	Masataka Kinoshita
	Masato Furuya
	Hiroe Miyake
	Teruyuki Kato
	Yasuyuki Kano
	Aitaro Kato
	Yoshiyuki Tanaka
	Takuto Maeda
	Shoichi Yoshioka
	Hiroko Sugioka
	Yoichi Fukuda
	Toshitaka Baba

Co-organized by

Earthquake Research Institute, the University of Tokyo
Research Center for Urban Safety and Security, Kobe University
Graduate School of Science, Kobe University

Assented by

Disaster Prevention Research Institute, Kyoto University
International Research Institute of Disaster Science, Tohoku University
National Research Institute for Earth Science and Disaster Prevention
Japan Meteorological Agency
Geospatial Information Authority of Japan
Japan Agency for Marine-Earth Science and Technology
Geological Survey of Japan, AIST
National Institute of Polar Research
Disaster Reduction and Human Renovation Institution
Association for the Development of Earthquake Prediction
Japan Geoscience Union

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Financially supported by

Meet in Kobe
KANSAI·OSAKA 21st Century Association
Tsutomu Nakauchi Foundation
Tokio Marine Kagami Memorial Foundation
International Association of Geodesy (IAG)
International Association of Seismology and the Earth's Interior (IASPEI)
Earthquake Research Institute, the University of Tokyo

Joint Assembly information

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Hermann Drewes <iag.office@tum.de>
IASPEI Secretariat, Room 303
Johannes Schweitzer <iaspei@norsar.no>
Local Organizing Committee, Room 406

IAG-IASPEI 2017 Secretariat

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Assembly Website

http://www.iag-iaspei-2017.jp
* Abstracts can be downloaded from website below:
https://confit.atlas.jp/guide/event/iagiaspei2017/top?lang=en

Twitter

@iagiaspei2017

Venue

Kobe International Conference Center
Address: 6-9-1, Minatojima-nakamachi, Chuo-ku, Kobe 650-0046, Japan
Tel: +81-78-302-5200

The Kobe Chamber of Commerce and Industry
Address:6-1, Minatojima-nakamachi, Chuo-ku, Kobe 650-0046, Japan
Tel:+81-78-303-5805

Joint Assembly opening hours

Registration desk and general information desk

Sunday,	July 30	16:00-19:00
Monday,	July 31	07:30-17:00
Tuesday,	August 1	07:30-17:00
Wednesday,	August 2	08:00-17:00
Thursday,	August 3	08:00-17:00
Friday,	August 4	08:00-14:00

Location:
1F, Kobe International Conference Center
Main Hall Foyer (*Sunday, July 30 Only)
3F, Kobe International Conference Center
Entrance (Monday, July 31 ~)

Poster rooms

Tuesday,	August 1	09:00-18:00
Wednesday,	August 2	09:00-18:00
Thursday,	August 3	09:00-18:00
Friday,	August 4	09:00-16:00

Location: The Kobe Chamber of Commerce and Industry

Exhibition

Monday,	July 31	13:00-18:00
Tuesday,	August 1	09:30-17:00
Wednesday,	August 2	09:30-17:00
Thursday,	August 3	09:30-17:00
Friday,	August 4	09:30-14:00

Location: Kobe International Conference Center

Tourist information

Tuesday,	August 1	10:00-17:00
Wednesday,	August 2	10:00-17:00
Thursday,	August 3	10:00-17:00
Friday,	August 4	10:00-16:00

Location: 3F, Kobe International Conference Center

General Information for participants

Language
The official conference language is English. No simultaneous interpretation will be provided.

Badges
The participant name badge will be provided at the registration desk. All participants are requested to wear the badge throughout the Assembly. Only badge holders will be admitted to the sessions.

Cloakroom
A cloakroom is located on the 3rd floor of Kobe International Conference Center. Please make sure that no personal belongings are left there after closing each day.

Opening hours:

Monday,	July 31	07:30-18:30
Tuesday,	August 1	07:30-18:30
Wednesday,	August 2	08:00-18:30
Thursday,	August 3	08:00-18:30
Friday,	August 4	08:00-18:00

WiFi
At the venue we offer you free access to the in-house WiFi network both in Kobe International Conference Center and the Kobe Chamber of Commerce and Industry.

SSID: iagiaspei2017
Password: kobe2017

Business center
For printing and photo copying, business center is available.
Location: 2F, Kobe International Conference Center

Mobile phone policy
Using mobile phones during the session is prohibited. Please turn off or set to silent mode.

Photography
Photographing / recording sessions are strictly prohibited.

Notice: Please note that the organizer will be taking photos in the venue for the purpose to use in conference report / website / other media.

Lost and found
Contact the registration desk in case of personal belongings being lost or found. Belongings not picked up during the Joint Assembly will be handed over to the venue.

Meals
Coffee / tea during the breaks are included in the registration fee and will be served daily. You will find several restaurants close to the venue. (See the area map on P. 11). Ariston Hotel Kobe offers lunch buffet, including halal food on the 1st floor.

Press
Members of the press are kindly asked to contact the registration desk for interview requests.

Disclaimer / Liability
The Local Organizing Committee and JTB Communication Design cannot accept liability for injuries or losses of whatever nature incurred by participants and/or accompanying persons, nor for loss of or damage to their luggage and/ or personal belongings. Please check the validity of your own travel insurance. All reasonable endeavor will be made to hold the Assembly and to present its program as scheduled under circumstances which assure the comfort and safety of all participants. However, neither the Assembly nor its committees, representatives or agents, shall be held liable by any person as a result of the cancellation of the Assembly or of any of the arrangements, programs or plans connected therewith, or for any injury, damage or inconvenience which may be suffered by any person while travelling to or from, or during such person's presence in Japan in connection with this Assembly. Participants and accompanying persons are advised to purchase their own insurance against any such occurrences.

Scientific field trip
Half-day (morning) field trips to the Nojima Fault
8:15 Assembly Time Conference venue 8:30 Dep.---Awaji SA --- Ezaki Park ---Hokudan Earthquake Memorial Park ---13:30 Arr. Tour will be disbanded at the venue

Date: OP1: August 1 8:30-13:00 (approx. 4.5 hours)
OP2: August 3 8:30-13:00 (approx. 4.5 hours)
Price JPY 4,000 / person
*Application is required in advance on-line.

Access to Venue

For public transportation, prepaid IC cards are valid in Kobe. See P. 10 more information.

From / to Kobe Airport

Port Liner monorail takes about 8 minutes to P-06, Shimin-Hiroba Station (fare: ¥250).
By taxi, the time required is about 8 minutes; fare is approximately ¥1,500.
* Actual taxi fares depend on traffic conditions; evening and late night surcharges may apply.

From / to Kansai International Airport and Osaka (Itami) Airport

<By Airport Limousine Bus>
Kansai International Airport ↔ Sannomiya about 65 minutes
Osaka (Itami) Airport ↔ Sannomiya about 40 minutes
For information, please visit http://www.hanshin-bus.co.jp/limo_en/
* From Sannomiya, please take Port Liner monorail or taxi.

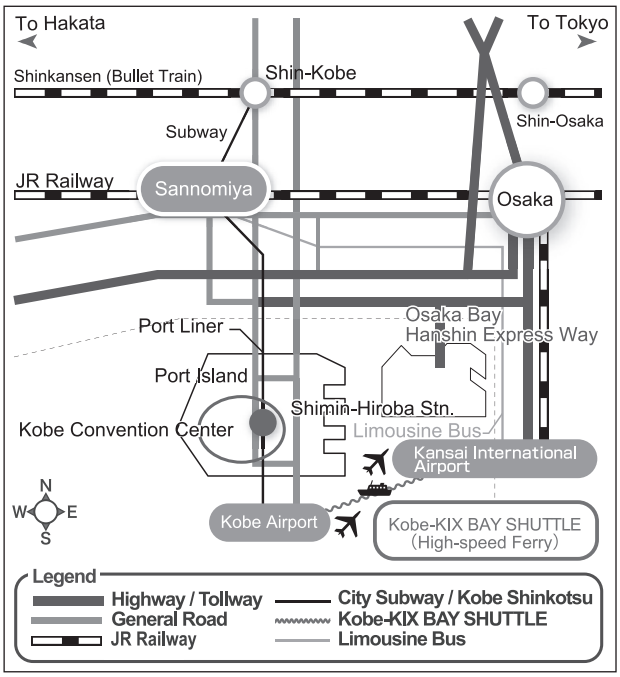
<By Kobe - Kansai Airport Bay Shuttle Ferry>
The high speed ferry ride takes approximately 31 minutes. For information about fares and schedules, please visit http://www.kobe-access.jp/en/
* The Bay Shuttle bus to the Port Liner monorail station at Kobe Airport takes about 2-3 minutes.
* Port Liner monorail takes about 8 minutes to P-06, Shimin Hiroba Station.

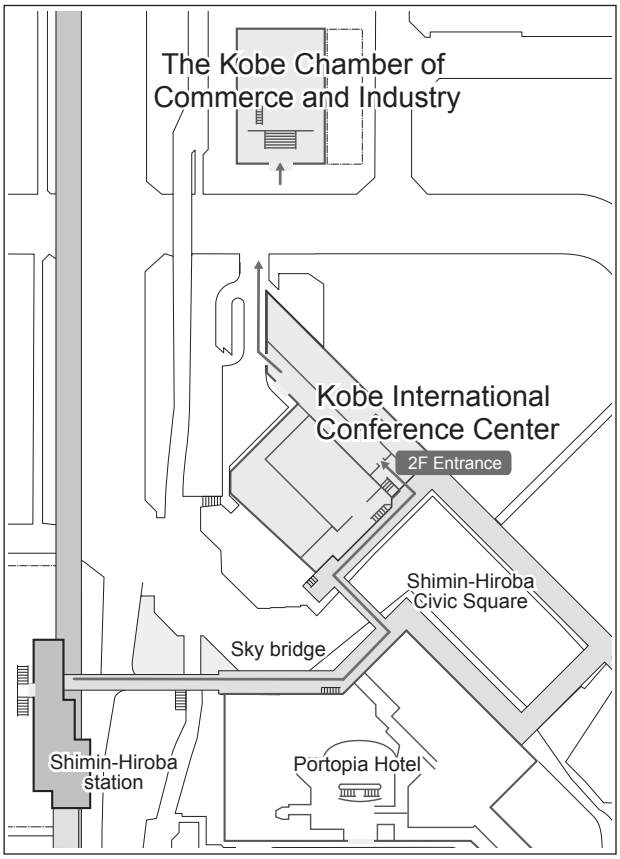
From / to Shin-Kobe Station

By taxi, the time required is about 20 minutes; fare is approximately ¥2,000 directly to the venue.
By subway Seishin-yamate Line, it is only one stop to Sannomiya (fare: ¥210).
* From Sannomiya, please take Port Liner monorail.

From / to Sannomiya Station

(JR, Hankyu, Hanshin, Kobe City Subway, Port Liner Monorail)
By taxi, the time required is about 10 minutes; fare is approximately ¥1,500.
Port Liner monorail takes about 10 minutes to P-06, Shimin-Hiroba Station. (fare: ¥250)





Tourist information

Climate and clothing

Right after the end of rainy season, the average temperature in August is around 28 °C (82.4 °F). During the day the temperature could go up to 35 °C. (95 °F)

Currency / Credit cards

The official currency is Japanese Yen (JPY). USD 1 = JPY 114 (July, 2017). EUR 1 = JPY 130.14 (July, 2017). Major credit cards are accepted in hotels, restaurants and shops. Service is included in the menu price in Japan. It is advisable to carry an identity card or some form of photo identification.

ATM facilities at the venue

A cash machine is available at Kobe International Conference Center area. (See the area map on P. 11)

IC card for public transportation

Prepaid IC card are rechargeble cards that can be used to conveniently pay fares on public transportation and to make payment at a rapidly increasing number of vending machines and shops by simple touching tne card on a reader.

Where to get an IC card?: IC cards can be purchased at ticket machines and ticket counters at the corresponding railway stations. The initial cost consists of a refundable deposit of 500 yen plus an initial amount to be charged onto the card. They can be recharged at ticket machines. To get the refundable deposit, please bring the card to ticket counters.

Electricity

Electrical voltage in Japan is 100 V / 60 Hz. Japanese electrical plugs have two, non-polarized pins. Appliances designed to operate on 110 / 120 Volts need a voltage converter and a plug adapter.

Emergency phone numbers

Police 110
Ambulance / Fire brigade 119

Kobe sightseeing info & app

Feel KOBE
http://plus.feel-kobe.jp/
https://www.feel-kobe.jp/travelguide_apps/
(operated by the Kobe Convention & Visitors Association)

Museums - 1995 Kobe Earthquake

Disaster Reduction and Human Renovation institution (DRI)

Exhibitions to learn about what happened in the great Hanshin-Awaji earthquake.
Multilingual (English / Chinese / Korean) guide is available.
Open: Tue.-Sun., 9:30-18:00 (entry until 5:00)
Admission: ¥600
Web: http://www.dri.ne.jp/en/exhibition/exinfo
Tel: +81-78-262-5050
Direction: JR Sannomiya station bus stop --- [Kobe City Bus, Line 29 or 101, app. 20 min.] --- DRI bus stop

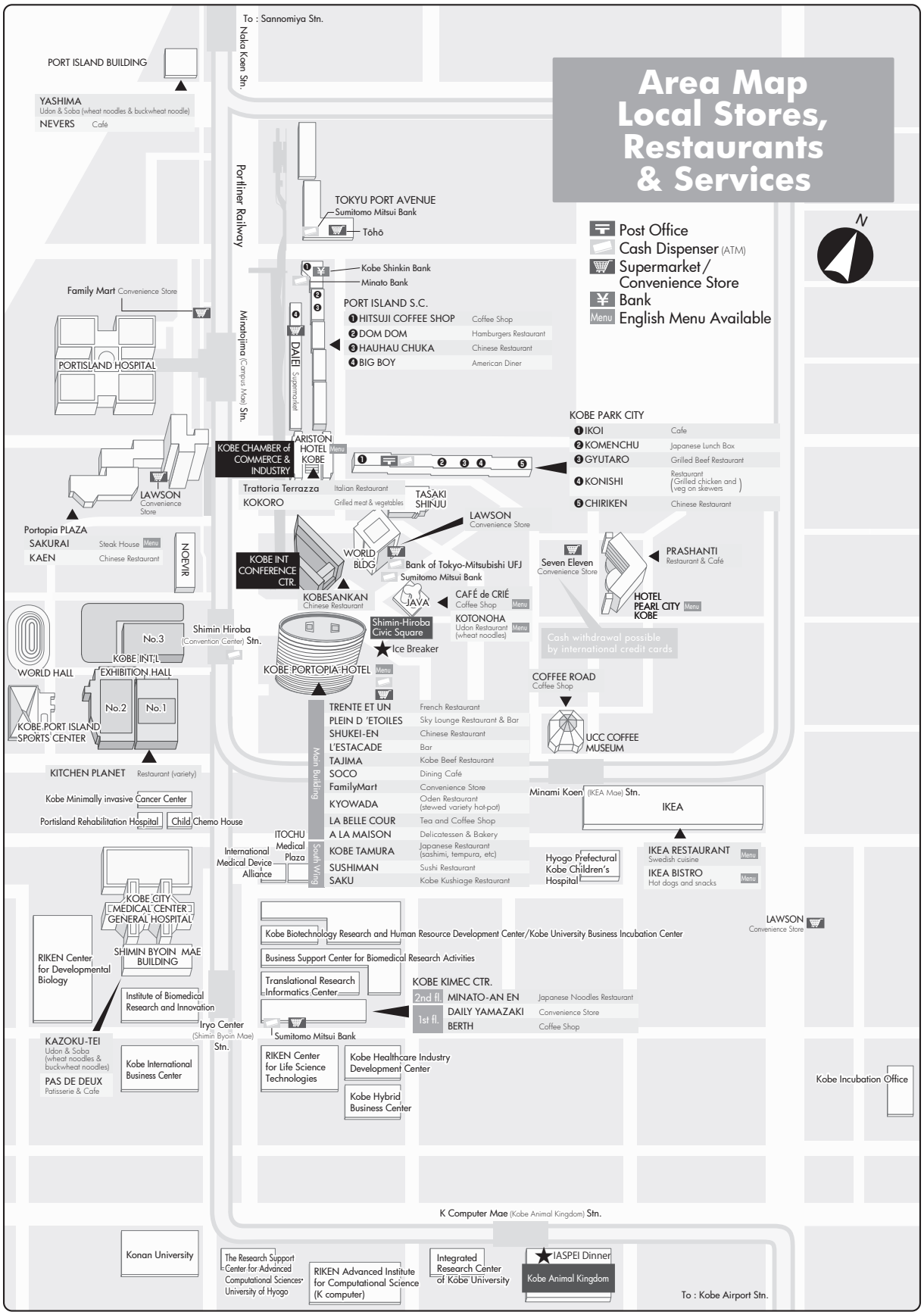
Hokudan Earthquake Memorial Park (Nojima fault)

The park is located southern edge of the Nojima fault ruptured during the 1995 Kobe earthquake. The surface fault is preserved in museum.
Open: everyday, 9:00-17:00
Admission: ¥700
Web: http://www.nojima-danso.co.jp/index.html (in Japanese)
Tel: +81-799-82-3020
Direction: JR Sannomiya station --- [JR Kobe line, app. 25 min.] --- JR Maiko --- [Express bus, app. 20 min.] --- Hokudan --- [Local bus, app 10 min.]

Kobe tours & packages

A variety of optional tours in Kobe are available on the website below.
http://www.japanican.com/en/tour/list/

Area Map Local Stores, Restaurants & Services



Social program

The following event is included in the registration fee for delegates:

Ice Breaker

Sunday, July 30 at 18:00-20:00
Venue: Shimin-Hiroba Civic Square

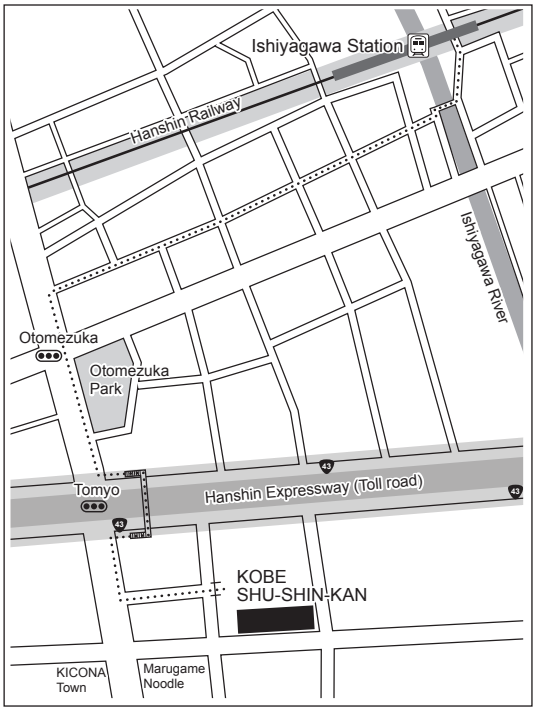
All delegates are welcome to attend the Ice Breaker. Renew old friendships and make new acquaintances as we welcome you to Kobe. The Ice Breaker is free of charge but the registration is mandatory. Please stop by at the registration desk on the 1st floor of the Kobe International Conference Center to pick up the name badge in advance. (See the map on P. 11.)

Association Dinners

Association dinners will take place during the IAG-IASPEI Joint Assembly in Kobe. Association dinners are not included in the registration fee for delegates. Tickets must be purchased in advance on-line.

IAG Dinner

Date: Wednesday, August 2 Time: 19:00 - 21:00
Location: KOBE SHU-SHIN-KAN
1-8-17, Mikagetsukamachi, Higashinadaku, Kobe, Hyogo
Dress: Casual
Tickets: JPY8,000 (Available to purchase On-sit)
Access from the venue:
<By taxi>
From venue: JPY 3,000
From Sannomiya: JPY 2,000
<By train>
Shimin-Hiroba Station (Venue)
↓ Port Liner monorail (10 mins.)
Sannnomiya
↓ Walk (5 mins.)
Kobe-Sannnomiya
↓ Hanshin Main Line bound for Umeda (10 mins.)
Ishiyagawa station



IASPEI Dinner

Date: Thursday, August 3 Time: 19:00 - 22:00
Location: Kobe animal kingdom
7-1-9, Minami cho, minatojima, Kobe, Hyogo
Access from the venue:
Shimin-Hiroba Station (Venue)
↓ Port Liner monorail (5 mins.)
K Computer Mae (Kobe Animal Kingdom) Station

Acknowledgments

On behalf of the Organizing Committee and the Local Organizing Committee of the IAG-IASPEI 2017 conference, donations to the conference by the following individual and corporate donors are greatly appreciated.

Individual donors

Hamada, Nobuo
Hasegawa, Akira
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Moriyama, Manabu
Munekane, Hiroshi
Nakahara, Hisashi
Uetake, Tomiichi
Yamaoka, Koshun

Corporate donors

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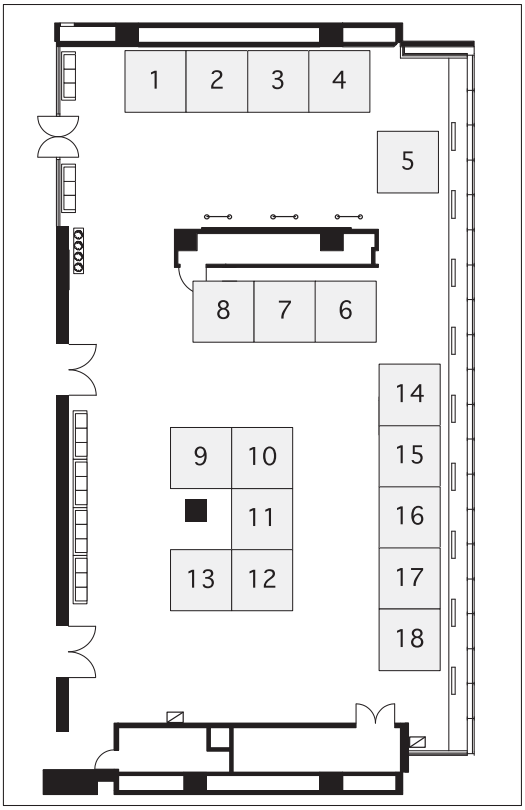
PASCO Corporation
RION Co., Ltd.
Shikoku Research Institute Inc.
Sogo Geophysical Exploration Co., Ltd.

(as of July 14, 2017)

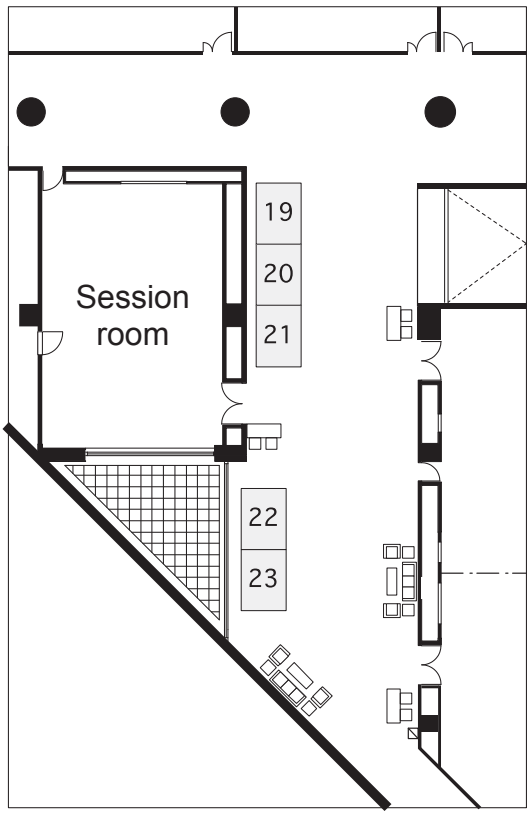
Exhibition floor map

3F Reception Hall + Lounge, Kobe International Conference Center



1. Japan Geoscience Union
2. Taiwan Earthquake Research Center (TEC)
3. Tono Research Institute of Earthquake Science (TRIES), Association for the Development of Earthquake Prediction (ADEP)
4. Kinemetrics Inc.
5. KINKEI SYSTEM CORPORATION
6. International Institute of Seismology and Earthquake Engineering (IISEE), Building Research Institute (BRI), Japan
7. Kyoto University - Disaster Prevention Research Institute & Division of Earth and Planetary Sciences, Graduate School of Science
8. Earthquake Research Institute, The University of Tokyo
9. GeoSIG Ltd., Knowledge Foresight Inc., CTGK Ltd.
10. Nanometrics Inc.
11. NIKON-TRIMBLE CO., LTD.
12. National Research Institute for Earth Science and Disaster Resilience (NIED)
13. Japan Agency for Marine-Earth Science and Technology
14. PASCO CORPORATION
15. TOKYO SOKUSHIN CO., LTD.
16. Güralp Systems Ltd.
17. UMEZAWA MUSEN DENKI Co., Ltd.
18. NTT Communications Corporation

4F Foyer, Kobe International Conference Center



19. GNSS Technologies, Inc.
20. Quasi-Zenith Satellite System Services Inc. (QSS)
21. International Research Institute of Disaster Science, Tohoku University
22. GEOSURF CORPORATION
23. MEIJI TECHNO CO., LTD.

Exhibitor's profile

in alphabetical order

Booth No. 9

GeoSIG Ltd.

GeoSIG provides earthquake, seismic, structural, dynamic and static monitoring and measuring solutions
As an ISO Certified company, GeoSIG is a world leader in design and manufacture of a diverse range of high quality, precision instruments for vibration and earthquake monitoring. GeoSIG instruments are at work today in more than 100 countries around the world with well-known projects such as the NetQuakes installation with USGS and Oresund Bridge in Denmark. More than 300 major installations in Dams, Nuclear Power Plants and major structures on every continent are a testimony to our global presence and our ability to provide solutions to cater for demanding applications.

Knowledge Foresight Inc.

Knowledge Foresight Inc. was established in August 2004.
We advance development of the large-scale seismological observation system and the big databases, such as geographical and geological databases and bibliographic databases in commission from national research institutes and major consulting companies.
Recently, we have developed "YURE MON" which is a MEMS based compact acceleration sensor and measures with a smartphone. It transmits its data to cloud and provides the real-time monitoring. Also, its measurement device operates with solar power source, so the device can be installed anywhere.
Our challenge is spreading our IoT service called "SMMS (Simple Multi Monitoring Service)".

CTGK Ltd.

CTGK Ltd. was established on 2004. We provides the best way to solve your problems on the border of variable fields, such as theory and applications, hardware and software, electronics and mechanics, science and engineering, geophysics/geology and civil engineering, planning and realizing, researcher and field worker, and so on. Our main fields are disaster prevention, civil engineering, and underground water flow, in geophysical/ geotechnical area. We also supply whole system for monitoring above fields on demand as you wish. 4D GeoTek LLC. is one of the company realizing 4 dimensional monitoring services using our technology.

Booth No. 22

GEOSURF CORPORATION

GEOSURF provides solution for precise positioning measurement and displacement monitoring via network with the cutting edge GNSS equipment.
Our solution has great achievement on projects such as TOKYO SKYTREE construction, Haneda Airport displacement monitoring, as well as observing the principal volcanos in Japan.

Booth No. 19

GNSS Technologies, Inc.

GNSS Technologies, Inc. provides GNSS, precision surveying and GIS equipment related products and services, as well as related software and hardware R&D, design and manufacturing outsourcing services, in addition to R&D, consultation, data analysis, hardware rental for the world's first commercialized indoor positioning technology, "IMES".

Booth No. 16

Güralp Systems Ltd.

Güralp has been developing revolutionary force-feedback broadband seismic instrumentation for more than thirty years. Our sensors are used worldwide by academic, public, governmental and private organisations to understand, protect and explore our world.
Our sensors employ the principle of negative force feedback to minimize the motion of the mass, and keep it centred within the seismometer casing. This technology vastly extends the bandwidth and linearity of the seismometer, recording seismic signals with long periods of over 300 seconds to over 100 Hz.
Güralp sensors record seismic events and signals of all kinds, from teleseismic events occurring on the other side of the planet, to microseismic events induced by human activity. Our high fidelity digitisers ensure that these signals are recorded with the highest resolution and accurate timing.
Our range of products and services meet the most complex of requirements for deployment in the most challenging circumstances. We are continuously developing new ways of engineering our proven precision technology into smaller and more advanced casings. You will find Güralp instruments gathering seismic data in the harshest of environments, from the Antarctic ice sheet; to boreholes 100s of metres deep; to the world's most active volcanoes and deepest ocean trenches.

Booth No. 6

International Institute of Seismology and Earthquake Engineering (IISEE), Building Research Institute (BRI), Japan

IISEE, BRI provides international training courses in the fields of seismology, earthquake engineering, and tsunami disaster mitigation. We have participants from developing countries under the cooperation with Japan International Cooperation Agency and Ministry of Land, Infrastructure, Transport and Tourism. As of 31 July 2017, a total number of the participants is 1,792 from 100 countries and regions. Currently, we are providing the following courses.

Three regular courses on seismology, earthquake engineering, and tsunami disaster mitigation: The training period is about one year. From the 2005-2006 course, a part of the curriculum of these courses have been approved as a Master's degree program by National Graduate Institute for Policy Studies and BRI.

Global seismological observation course: This course has been provided in collaboration with Japan Metrological Agency since 1995 by a request of Ministry of Foreign Affairs of Japan as a part of Japan's contribution to nuclear disarmament. The training period is about two months.

Earthquake engineering course for Latin America: This course has been provided for enhancement and dissemination of earthquake resistant technology for buildings in Latin American countries since 2014. The training period is about two months and the lectures are given in Spanish.

Booth No. 13

Japan Agency for Marine-Earth Science and Technology

The Japan Agency for Marine-Earth Science and Technology (JAMSTEC) is a general research institute for ocean science and technology in Japan that contributes to resolving various problems crucial to the survival of humanity based on results obtained by fundamental ocean researches and technological development, and elucidating the global system centered on the ocean.

Booth No. 1

Japan Geoscience Union

The Japan Geoscience Union (JpGU), with 50 society members and more than 9,500 individual members, is a multidisciplinary geoscience organization based in Japan in all fields related to Earth and Planetary science. JpGU holds annual meetings at Makuhari Messe in Chiba Japan. JpGU also publishes open access-e journal, Progress in Earth and Planetary Science (PEPS).

Booth No. 4

Kinemetrics Inc.

Kinemetrics has been a leader in earthquake instrumentation development for almost 50 years, creating innovative products and solutions for seismic arrays and networks, for monitoring bridges, dams, structures and nuclear power industry.

Through innovations that matter, Kinemetrics is the premier partner for those who seek reliable solutions that take seismic research and resilience further, faster.

We are committed to deliver the highest quality, standard setting technologies, products and solutions - on time, on-line, every time.

We also support and run several large seismic networks including National Strong Motion Network--Italy, USArray/ Transportable Array—USA, Seismic Hazard & Rick Assessment—Abu Dhabi, National Seismic Network—Malaysia, and Seismic Monitoring System--Australia.

Booth No. 5

KINKEI SYSTEM CORPORATION

KINKEI develops, produces measuring devices for earthquakes/volcanos, and constructs their systems.
In IAG-IASPEI2017, we introduce ultra-low power datalogger and volcano observation telemeter system.

Booth No. 7

Kyoto University - Disaster Prevention Research Institute & Division of Earth and Planetary Sciences, Graduate School of Science

We welcome those who are interested in studying earth science in as masters or PhD students of Division of Earth and Planetary Sciences, Graduate School of Science, Kyoto University. The application is scheduled on July for master course, and July and January for PhD course.
Division of Earth and Planetary Sciences comprises the Department of Geophysics and the Department of Geology and Mineralogy. The Department of Geophysics undertakes research not only regarding the Earth's core, mantle, and crust, but also its oceans and atmosphere, and even interplanetary space. We analyze data from above-ground and satellite data to combine methodologies for theoretic, laboratory, and simulation experiments to learn more about the ever-changing dynamics of the geosphere, through which we hope to learn to predict such changes. In the Department of Geology and Mineralogy, we emphasize observation and analysis through both fieldwork and laboratory testing to examine phenomena related to the Earth's strata and rocks, minerals, and fossils from the context of the Earth's developmental history.
DPRI has been pursuing principles of natural disaster reduction, establishing integrated methodologies for disaster prevention based on natural and social sciences, and educating students in related fields.

Booth No. 23

MEIJI TECHNO CO., LTD.

Meiji Techno Co., Ltd. is a manufacturer of optical microscopes who has been making in Japan for 40 years. The high quality and variety of the models are known in the world. Originally a manufacturer of educational microscopes, Meiji Techno has since extended product lines into the industrial, laboratory, and higher education markets. Our products are sold throughout Europe, Asia, Africa and the Americas by agents or distributors authorized by Meiji Techno Co., Ltd., or our American subsidiary Meiji Techno America. No matter where you are located or what your requirements are, Meiji Techno has the products and expertise to help you attain your microscopy goals. We showcase polarizing microscope, stereo microscope and digital microscope at the exhibition.

Booth No. 10

Nanometrics Inc.

Nanometrics provides full-service, integrated solutions for studying manmade and natural seismicity, including turnkey seismic networks, industry-leading precision instrumentation, complete data processing and analysis services, and software applications. Our innovative technology is used in mission-critical seismic arrays and tsunami warning systems in over 90 countries across the globe.

We specialize in network design and installation, network monitoring, real-time data acquisition and processing via our cloud-based, 24/7 data center, and induced seismicity monitoring and frac monitoring for the energy sector. Our complete and scalable solutions and our outstanding expertise have made us one of the largest seismic monitoring network operators in the world.

What sets us apart is the fact that our customers have always been, and continue to be, our partners in scientific discovery. Together, we've found solutions to the most difficult monitoring challenges, developing new products and services along the way. Working with the world's leading scientific institutions, universities and geological surveys, as well as the some of the world's largest energy producers, we've been changing the way the world does seismology for over 30 years.

Nanometrics is a privately owned company headquartered in Ottawa, Canada, with offices in Calgary, Beijing and Houston and representatives worldwide.

Booth No. 12

National Research Institute for Earth Science and Disaster Resilience (NIED)

NIED aims to protect people's lives and properties from natural disasters and to prepare society to be resilient to natural disasters, through research on disasters caused by earthquakes, volcanoes, floods, landslides, meteorological changes, snow and ice damages.

NIED introduces our research and development activities for natural disaster mitigation.

Booth No. 11

NIKON-TRIMBLE CO., LTD.

Nikon-Trimble Co., Ltd. is a joint venture between Nikon Corporation and Trimble Inc. to address the global surveying and construction markets. With the integration of Nikon's high quality optical technologies and Trimble's history of innovations in GNSS, laser, optical and inertial technologies with application software and wireless communications, we are committed to the ongoing development of quality positioning and measuring instruments to meet a range of needs for agriculture, infrastructure, cadastral and geospatial professionals, building constrcution, and heavy civil construction.

Booth No. 18

NTT Communications Corporation

NTT Communications provides consultancy, architecture, security and cloud services to help enterprises worldwide optimize their information and communications technology (ICT) environments.
We are headquartered in Tokyo, Japan, and have subsidiaries and offices in over 110 cities in more than 40 countries/regions with 21,650 employees worldwide. We're a wholly owned subsidiary of Nippon Telegraph and Telephone Corporation (NTT), one of the largest telecommunication companies in the world.

Booth No. 14

PASCO CORPORATION

Born as an aerial surveying company, PASCO has performed surveying work at the request of local governments and other customers and provided maps based business model that we have expanded our business presence. Map data essential to corporate decision making, disaster mitigation measures, urban planning and the development and upkeep of national infrastructure is now considered core information for social systems is increasing at a fast pace.

Additional, PASCO Group's collection and processing technologies for geospatial information are being used for environmental monitoring and to quickly ascertain damages caused by the increasing number of natural disasters occurring around the world.

Under the above-mentioned vision, PASCO Group considers human resource development and research and development as its key themes for its growth strategy for the next 10 years. Through these efforts we are working on expanding our business presence in order to be a company that continually meets and exceeds the expectations of society.

PASCO Group's goals are to continually maintain the world's leading technical capability that integrates all aspects of the value chain, from collection of geospatial information to service provision, and to become the unparalleled leader in geospatial information with operations benefiting society.

Booth No. 20

Quasi-Zenith Satellite System Services Inc. (QSS)

In Japan, the QZSS, Quazi-zenith Satellite System project has been started from 2012, and QSS, QZS System Service was selected by the Japanese government as the development and operation company of the QZSS.
We'd like to introduce the QZSS project overview.

We look forward to seeing you.
Thank you.

Booth No. 2

Taiwan Earthquake Research Center (TEC)

Taiwan Earthquake Research Center (TEC) has promoted a series of studies on real-time seismology, earthquake early warning (EEW) and seismic hazard and risk analysis with support from the Minister of Science and Technology (MOST).
An automated near real-time moment tensor monitoring system (RMT) has been constructed to monitor the seismic activity by taking advantage of a grid-based moment tensor inversion technique and long-period broadband seismic recordings.
The P-Alert, a MEMS accelerometer that is specially designed for on-site earthquake early warning, has been widely deployed island-wide in Taiwan. It can detect first P-wave arrival and provide an alert with predicted intensity when the amplitude of vertical P-wave is over 0.35 cm.
By integrating the earthquake science, earthquake engineering, and social science communities of Taiwan, the Taiwan Earthquake Model (TEM) program is to improve our understanding of Taiwan earthquake mechanisms and therefore provide new insight into seismic hazard and risk assessments for Taiwan.
The TEC not only acts as a platform for the advanced researches in earthquake science and technology, but also presenting real-time earthquake information and creative and diversity tools and materials for seismic education outreach.

Booth No. 21

International Research Institute of Disaster Science, Tohoku University

The International Research Institute of Disaster Science (IRIDeS) was established in Tohoku University after the Great East Japan Earthquake in 2011. It conducts a broad range of world-leading research on natural disaster science and disaster mitigation in collaboration with domestic and international organizations.

This year from November 25th to 28th, the first World Bosai Forum/International Disaster Risk Conference will be held in Sendai in partnership with the International Disaster and Risk Conference (IDRC) in Davos, Switzerland. The secretariat of the Forum is placed in the IRIDeS, who will take the principal role in organizing the Forum. A wide range of participants including officials and experts from domestic and overseas industries, governments, academia, private sectors as well as local citizens are expected to participate in the Forum. The World Bosai Forum aims to create practical solutions for disaster risk reduction, instilling the term "Bosai" that encompasses a comprehensive concept from disaster risk reduction to reconstruction and recovery, and share it with the world. For more details, please visit our website at http://www.worldbosaiforum.com/english/.
We look forward to your participation in the World Bosai Forum.

Booth No. 15

TOKYO SOKUSHIN CO., LTD.

- Design, manufacture, and sale of earthquake observation equipment
- Design, manufacture, and sale of earthquake disaster prevention equipment
- Installation and maintenance of earthquake observation system
- Commissioned business for measurement of vibration
- Design, manufacture, and sale of various measurement equipments

Booth No. 3

Tono Research Institute of Earthquake Science (TRIES), Association for the Development of Earthquake Prediction (ADEP)

Tono Research Institute of Earthquake Science (TRIES) was established in 1997. The purpose of the institute is as follows:
1. Development of instrument and technic for observing geophysical components in deep underground and research about behavior of underground water
2. Research about phenomena relating to earthquake generation
3. Research of mechanism of inland earthquake generation in active fault
4. Research of earthquake disaster prevention in the Tono area

We will introduce one of our research in the following:
We have been developing a multi-component borehole instrument (a comprehensive crustal activity observation instrument) that is capable of observing crustal activity at significant depths (like 1 km) for earthquake prediction and geophysical research. This instrument can be equipped with highly sensitive stress meters, strain meters, tilt meters, seismometers, accelerometers, thermometers, and magnetometers, and we can also choose any combination of the sensors. The stress meter could observe stress seismograms without scaling out for Tohoku earthquake(Mw9.0).

Booth No. 17

UMEZAWA MUSEN DENKI Co., Ltd.

梅澤無線電機株式会社
UMEZAWA.co.jp

We are a Japanese wholesaler/retailer of electronic components and equipments. Our clients are mainly small and medium-sized companies and educational institutes such as universities, technical colleges and high schools. Our mission is to fulfill customer needs. We serve this mission by searching products not only in Japan but also all over the world; furthermore, we design and manufacture original equipments with our partner companies. If you are looking for products for your research or business, please do not hesitate to contact us.

Booth No. 8

Earthquake Research Institute, The University of Tokyo

Earthquake Research Institute, the University of Tokyo, Japan, is the largest university institute for Solid Earth Science in our country, and is one of the oldest and renowned of its kind in the world with over 80 top-notch academics. We deal with: earthquake, tsunami, volcano, and Earth's interior.

For promoting research and education on these fields, we call for application to the visiting Professor / Post-doctoral Fellow positions (fully funded). We also welcome students either for a short visit or for entering the graduate school (some are funded). For more information, please visit us at ERI booth for the brochure, leaflet, posters, and on top of them, our staff standing by at your service.

Joint Symposia

J01 Monitoring of the cryosphere

Convener: *Masaki Kanao*
Co-convener: *J. Paul Winberry, Erik Ivins, Mirko Scheinert*

Description
Several kinds of environmental signals associated with ocean - cryosphere - solid earth systems have recently been detected in both polar regions. Ice-related motions that generate small magnitude events are generally named ice-quakes (ice-shocks) and can be generated by many glacial processes that include calving and basal slip. Cryoseismic waves are likely to be influenced by variations in environmental conditions, and the continuous study of their time-space variability provides indirect evidence of climate change. Glacial earthquakes are the most prominent phenomena found recently in polar regions, in particular at the Greenland ice sheet, new innovative studies from seismology and geodesy are expected by long-term monitoring under extreme conditions in the Earth's environment.

The response and influence on the cryosphere by the solid earth gives rise to a new understanding of earth surface interactions at a crucial time in earth history when global change is driving variations in mass balance of the polar ice sheets. This approach promotes integration of new earth science data into modeling of ice mass balance, ice dynamics, and solid earth responses to mass change. The glacial isostatic adjustment (GIA), the response of the solid earth to the changing mass of overlying ice, produces displacements of the crust measureable by modern geodetic techniques. Much effort has been focused on improving the ice history and earth rheological components in GIA models, as well as obtaining new geodetic measurements to test these models.

Taking these issues into account, the conveners are willing to invite many contributions to a special session on "Monitoring of the cryosphere", which will cover the recent achievements on glacial related seismic events, geodetic studies of the cryosphere dynamics and associated phenomenon observed in polar regions. It is especially encouraged to have contributions treating the observation and modeling of seismic signals involving dynamics of ice sheets, sea-ice, icebergs and glaciers. Although the glacial earthquakes are the most prominent evidence found recently in polar regions, all related topics involving polar geodesy and seismology are welcome, such as the dynamic feature of crust and mantle in the area, comparison of tectonic events and glacier-related seismicity, recent triggered earthquakes and active volcanoes, space satellite and ground based geodesy, GIA, harmonic tremor associated with cryoseismic events, etc.

J02 Recent large and destructive earthquakes

Convener: *Thorne Lay*
Co-convener: *Manabu Hashimoto*

Description
Large, damaging earthquakes continue to strike globally, producing loss of life and destruction in many regions around the world. In 2015 - 2016 alone, the Gorkha (Nepal), Meinog (Taiwan), Kumamoto (Japan), Muisne (Ecuador), Amatrice (Italy) and other earthquakes resulted in serious regional damage. Earthquake science is essential for revealing the nature of earthquake generation and for extracting lessons from these events to help society reduce the impacts of future events.

Geodesists and seismologists have been cooperating to unveil the secrets of earthquakes. Recent development and deployment of observation/measurement technologies such as space geodetic techniques (real-time GNSS, InSAR, GRACE etc.), global and regional broadband seismic networks, and tsunami recording systems now enable us characterize the full earthquake cycle and to image the rupture process of earthquakes with much higher resolution in space and time than before.

This session welcomes reports on all studies of recent devastating earthquakes with geodetic/seismological/tsunami techniques, including investigations of source process, slip distribution, damage, pre/co/post-seismic deformation, geological/geophysical structure around the source faults, tectonic implications, and other associated phenomena.

J03 Deformation of the lithosphere: Integrating seismology and geodesy through modelling (co-sponsored by the International Lithosphere Program (ILP))

Convener: *Kevin Furlong*
Co-convener: *Rob Govers, Takuya Nishimura*

Description
The past decade has witnessed significant advances in our capabilities to observe lithospheric deformation on a range of spatial and temporal scales. Improved tools for imaging earthquake rupture processes, and the combination of densified, continuous GPS (cGPS) networks with space-based and airborne direct observations of crustal deformation such as InSAR and LiDAR have led to substantial improvements in our understanding of lithospheric deformational processes. In this symposium we invite submissions reporting research involving the acquisition and analyses of seismologic and geodetic data, and the utilization of those data through modeling to map and quantify rates and patterns of lithospheric deformation. Of particular interest are (1) studies that integrate data sets and data types, (2) modeling of processes that span temporal ranges including the earthquake cycle and subsequent rupture, and (3) longer term processes that permanently deform the lithosphere.

This symposium is co-sponsored by the International Lithosphere Program.

J04 Geohazard early warning systems

Convener: *Mitsuyuki Hoshiba*
Co-convener: *Yusaku Ohta, Hiroaki Tsushima, Yih-Min Wu, Y. Tony Song*

Description
For earthquake and tsunami early warnings, real-time monitoring and analyzing earthquake ground motions with seismometers and GNSS, and on- and offshore tsunami observation have been extensively developed in last several years. These new developments provide powerful tools for earthquake and tsunami disaster preparedness and mitigations. Recently, great efforts have been made around the world to mitigate earthquake and tsunami disasters in a wide range, including observatory development, real-time monitoring, progress of theory, investigation of source mechanism, real-time forecasting, rapid damage assessment, and so on.

Geohazard early warning systems, such as earthquake and tsunami early warning systems, exist today in many locations around the world. This session is organized to bring together scientists and engineers from a broad range of backgrounds, such as seismology, geodesy, tsunami research and earthquake engineering, to promote collaborative communications at the leading edge of science and technology for mitigating earthquakes, tsunami and related hazards. In this session, we will discuss new ideas, methods and applications of (near) real-time data analysis of seismic, geodetic (GNSS) and tsunami data, as well as real-time predictions for disaster preparedness and mitigations. Although the main contents of the session are earthquake early warning, real-time GNSS analysis, and real-time tsunami forecast warning, other related topics are also encouraged.

IUGG GeoRisk commission sponsored panel discussion
The promise and challenges of seismo-geodesy for earthquake and tsunami early warning
The seismo-geodetic method provides accurate displacement and velocity waveforms by optimally extracting high

frequency information from accelerometers and low-frequency information from collocated GNSS instruments. These combined broadband observations retain the permanent (static) displacement, are immune to clipping and magnitude saturation for large earthquakes experienced by traditional seismic data, while being sensitive enough to resolve deep earth deformation too weak to detect with GNSS instruments. Rapid seismo-geodetic analysis techniques utilizing scaling relationships can provide accurate and effective tsunami warnings to the near field communities.

The panel will explore the scientific, technical, infrastructural, and programmatic opportunities and challenges to creating integrated seismic and geodetic observational networks for earthquake and tsunami early warning that properly utilize the useful information available from seismo-geodetic real time data.

J05 Crustal dynamics: Multidisciplinary approach to seismogenesis

Convener: *Takeshi Sagiya*
Co-convener: *Hiroyuki Noda, Kuo-Fong Ma*

Description
Recent deployment of dense seismic and geodetic observation networks has revealed detailed pattern of crustal stress and strain rate in tectonically active regions all over the world. Furthermore, the Mw 9.0 2011 Tohoku-oki earthquake in northeast Japan provided a unique opportunity to investigate how the Japanese Islands' crust responds to instantaneous as well as transient stress changes due to the giant fault motion. So now is a time to proceed toward integrated understanding of dynamic processes in the Earth's crust, such as great earthquakes and following relaxation. In those approaches, mechanical properties of the crustal and mantle rocks, and frictional properties of intra-plate as well as plate boundary faults, are important key factors. This session aims to bring various research results together to promote multidisciplinary investigation in the above-mentioned direction for better understanding of crustal dynamic processes. We welcome presentations regarding seismic, geodetic, and other geophysical observations and data analysis, laboratory experiments, geological field works, numerical simulations, and integrated modeling of seismogenic as well as other geodynamic processes.

J06 The spectrum of fault-zone deformation processes (from slow slip to earthquake)

Convener: *Hitoshi Hirose*
Co-convener: *Yoshihiro Ito, Chris Marone*

Description
The aim of this session is to bring together the latest, cutting-edge work on the spectrum of fault-zone deformation processes and slip behaviors. We welcome contributions on slow deformation and fast fault slip that will improve our understanding of fault creep, slow slip events, tectonic tremor, episodic tremor and slip, very low-frequency earthquakes, and ordinary earthquakes. The session will highlight linkages between slow and fast fault slip (earthquakes) and explore scaling relationships for the observed spectrum of fault slip behaviors. Contributions from all areas are welcome, including geophysical and geodetic observations, studies of fault zone structure, laboratory experiments, geological surveys, theoretical works, and numerical studies.

J07 Tracking the sea floor in motion

Convener: *Ryota Hino*
Co-convener: *Narumi Takahashi, Tadashi Ishikawa, David Chadwell*

Description
Observations of seafloor deformation uncover various important tectonic processes difficult to resolve by conventional onshore monitoring. Remarkable technological progress achieved in the last decade has allowed monitoring motions of the sea floor with broad frequency range. A number of new discoveries are being made to characterize behavior of submarine faults, particular in subduction zones as well as migration of materials related to submarine volcanic activities. We invite submissions on studies based on various different techniques; e.g. GPS/A, pressure recording, direct-path acoustic ranging, broadband seismometries, and measurements of gravity, tilt and strain. Papers on measurement systems, data processing methods, observational results, and modeling studies using seafloor observations are all welcome.

J08 Imaging and interpreting lithospheric structures using seismic and geodetic approaches

Convener: *Takaya Iwasaki*
Co-convener: *Shuichi Kodaira, Ryo Honda, Tim Stern*

Description
This session covers the imaging and interpretation of crustal and upper mantle structures using seismological and/or geodetic approaches in a variety of tectonic settings for the purpose of understanding the geodynamical processes occurring in the lithosphere. Settings may include oceanic ridges, active/passive continental margins, continental collision zones, rift and basins, oceanic/continental lithospheres, etc. We welcome papers on crustal/lithospheric structures and their heterogeneities, on any scale, as obtained from a variety of geophysical measurements including seismic, geodetic, and potential data surveys. We also encourage presentation of technical papers focusing on methodological aspects of imaging and their applications to real data.

J09 Geodesy and seismology general contributions

Convener: *Kenji Satake*
Co-convener: *Aitaro Kato, Yoshiyuki Tanaka, Takuto Maeda*

Description
This symposium is for general contributions in seismology and geodesy, which does not belong to any other symposia.

IAG Symposia

IAG01 Reference Frames

G01 Reference frames

Convener: *Geoffrey Blewitt*
Co-convener: *Johannes Böhm, Zuheir Altamimi, Carine Bruyninx*

Description
Reference systems and frames are of primary importance for Earth science based research, satellite navigation as well as for practical applications in geo-information. A precisely defined reference frame is needed for an improved understanding of the Earth's rotation and its gravity field, sea level change with time, tectonic plate motion and deformation, glacial isostatic adjustment, geocenter motion, deformation due to Earthquakes, local subsidence and other crustal displacements. We invite presentations dealing with theoretical aspects and the practical realization of reference frames, as well as their application for research tasks like those mentioned above. Further emphases of the session are on global terrestrial and regional reference frames, celestial reference frames, and the co-location of space geodetic techniques on ground and in space.

IAG02 Gravity field

G02 Static gravity field

Convener: *Roland Pail*
Co-convener: *Leonid Vitushkin, Hussein Abd-Elmotaal, Michael Sideris*

Description
Global and regional static gravity field models of high accuracy and spatial resolution encapsulate important information for a wide range of applications. Input to these models are on the one hand data satellite-based data, especially from dedicated space missions such as GRACE, GOCE and next-generation missions in the future, satellite altimetry and ground, air- and shipborne data. The development of such gravity models requires effective combination of these data applying advanced methods on global down to local scale. Modern developments of sensor technology both, for ground- and satellite-based systems, and new measurement concepts, such as quantum gravimeters and optical clocks, will in the near future complement and support gravity campaigns and networks using absolute, superconducting and other relative gravimeters.

Static gravity field models are essential for the unification of the existing height systems around the world and the establishment of an International Height Reference System (IHRS), inertial navigation, the derivation of the mean dynamic ocean topography and geostrophic ocean currents (in combination with satellite altimetry), and also for constraining geophysical models of lithospheric structures.

This session solicits contributions that focus on all aspects of
(1) global high-resolution static gravity model developments and assessment, from methodological issues to modeling results, evaluation of uncertainties, and applications
(2) solution of various formulations of geodetic boundary-value problems resulting in precise local and regional high-resolution gravity/geoid models
(3) gravity campaigns and networks using absolute, superconducting and other relative gravimeters, as well as future technologies

(4) unification of existing height systems and the establishment of an IHRS
(5) developments in theory, processing methods, downward continuation of satellite and airborne data, treatment of altimetry and shipborne data, terrain modeling
(6) geophysical and oceanographic applications of static gravity field models
(7) mission concepts, instrumentation and processing strategies for future gravity field missions

G03 Time variable gravity field

Convener: *Shuanggen Jin*
Co-convener: *Srinivas Bettadpur, Jürgen Kusche*

Description
The time variable Earth's gravity field is related to the mass transport and the physic processes within Earth's system (the atmosphere, oceans, hydrology, and cryosphere), such as melting of ice sheets and glaciers, ocean circulation and sea level variations, hydrological cycle, post-glacial rebound and earthquake-induced gravity change. Nowadays, satellite gravimetry missions, particularly the Gravity Recovery and Climate Experiment (GRACE), showed great success to estimate the time-varying gravity field with unprecedented accuracy and resolution, which has been widely used to investigate mass flux within the ocean-land water cycle and Earth's system coupling as well as responses to climate change together with complimentary data from Jason-1/2, ICESat, Cryosat-2, GNSS, and InSAR. Furthermore, various initiatives are ongoing to prepare for future gravity mission and most promising is the US/German GRACE Follow-on (GRACE-FO) mission in August 2017.

This interdisciplinary session solicits contributions on (1) time-varying gravity field estimation and improvement from satellite gravimetry missions and combination synergies, (2) mass transport in the Earth system and responses to climate change, and (3) status and simulated results of future time-varying gravity field missions.

IAG03 Earth rotation and Geodynamics

G04 Earth rotation and geodynamics

Convener: *Manabu Hashimoto*
Co-convener: *Chengli Huang, Janusz Bogusz, Matt King, Jianli Chen*

Description
The Earth is moving and deforming in response to forces acting on the Earth from outside or inside of our planet. Geodynamics, studies of motion and deformation of the Earth, includes the entire range of phenomena associated with Earth rotation and Earth orientation such as polar motion, Universal Time or length of day, precession and nutation, the observation and understanding of which are critical to the transformation between terrestrial and celestial reference frames. It also includes tidal processes such as solid Earth and ocean loading tides, and crust and mantle deformation associated with tectonic motions and isostatic adjustment etc.

During the last couple of decades, research of geodynamics significantly advanced owing to rapid development of measurement and computation technologies, understanding of the Earth's dynamics and kinematics were deepened. Many geoscientists have come to use the fruit of geodynamics in a more restricted sense to address processes such as plate tectonics and postglacial rebound. Because the Earth as a mechanical system responds to both internal and external forces, and because these responses are sometimes coupled, this session covers studies on the entire range of physical processes associated with the motion and the deformation of the solid Earth. We saw the significant progress of observation in Earth rotation exploiting newly developed observation/measurement technologies, besides traditional

VLBI/SLR/LLR/GPS/DORIS, including Super-conductive laser gyroscope measurement, GRACE date on hydrological contribution to earth rotation, Galileo/BeiDou, etc. VGOS will be put into work next year. Studies on developments of new theories or computational techniques, new observation/measurement techniques using emerging technologies are also welcome.

IAG04 Positioning and Applications

G05 Multi-signal positioning: Theory and applications

Convener: *Marcelo Santos*
Co-convener: *Allison Kealy, Vassilis Gikas, Pawel Wielgosz, Jinling Wang*

Description
Signals of various types have been used for positioning in different applications at different levels of accuracy. They can be used separately but have been increasingly integrated. This symposium deals with theoretical developments and applications of multi-signal positioning. We invite the submissions of papers dealing with, but not excluded to, manned or unmanned, multi-sensor systems navigation and guidance, transportation, personal mobility, industrial and indoor positioning applications environmental monitoring, used of low-cost sensors including GNSS systems and smartphone navigation sensors, geospatial mapping and engineering, ranging from construction work, geotechnical and structural health monitoring, mining, to natural phenomena such as landslides and ground subsidence, geodetic applications and high-precision GNSS technologies and applications and the use of multi-signals stemming from modernized signals and issues and opportunities coming from multi-constellation signals. The integration of different types of signals brings all sorts of challenges and opportunities and this symposium is open to any discussion about them.

G06 Geodetic remote sensing

Convener: *Michael Schmidt*
Co-convener: *Jens Wickert, Felipe Nievinski, Lung-Chih Tsai, Yoshinori Shoji*

Description
In the context of this session the expression “Geodetic Remote Sensing” comprises atmosphere (including e.g. troposphere and ionosphere) monitoring, space weather studies as well as GNSS reflectometry. In general the Earth's atmosphere can be structured into various vertical layers depending on physical parameters such as temperature, water vapor or charge state. From the geodetic point of view the atmosphere is nowadays not only seen as a disturbing quantity which has to be corrected but also as a target quantity, since almost all geodetic measurement techniques provide valuable information about the atmospheric state. A prominent example for these developments is the operational use of ground- and space-based GNSS measurements to improve global and regional weather forecasts since 2006.

One of the major tasks in ionosphere research activities concerns the determination of physically relevant parameters from space geodetic observations to monitor ionosphere phenomena, such as the equatorial anomaly, and to perform space weather studies. Space weather and especially its impacts and risks are gaining more and more importance in politics and sciences, since our modern society is highly depending on space-borne techniques, e.g., for communication, navigation and positioning. Near real-time or even real-time approaches are currently under development, e.g. to monitor and analyse the state of the ionosphere, to predict ionosphere target parameters, or to optimize ultra-fast tropospheric products using data from GNSS permanent networks. Coupling processes between different atmospheric layers and inter-relations with climate change and natural hazards are further up-to-date topics. The backbone of all these studies and investigations is the integration of different geodetic observation techniques, consistent models and appropriate approaches following the goals of the Global Geodetic Observing System (GGOS).

Another important geodetic remote sensing technique is GNSS reflectometry (GNSS-R). After interacting with the neutral and ionized atmospheric layers, GNSS signals can be reflected off water, ice, and soil surface and exploited to derive geophysical properties of these surfaces as altimetric height, surface roughness, soil moisture, snow height, humidity or vegetation index. Such products are not only relevant for the geodetic community but also for an interdisciplinary geophysical user community with regard to important topics such as global sea-level monitoring, hydrological loading or drought/flooding observations.

In this session, contributions on atmosphere modeling including post-processing and (near) real-time approaches as well as studies on the combination of ground- and space-based geodetic observation techniques (including terrestrial GNSS, satellite altimetry, radio occultations, VLBI, DORIS) are welcome. Hereby we appreciate studies on the neutral and ionized atmosphere, including space weather related investigations, atmospheric coupling processes and climate change studies. We also welcome studies on GNSS reflectometry and related geophysical applications. Presentations on the estimation and forecast of atmospheric parameters (including atmospheric data assimilation) and on the usage of numerical weather models to improve GNSS positioning are other examples which would be appreciated.

IAG05 IAG Joint

G07 Global Geodetic Observing System (GGOS) and Earth monitoring services

Convener: *Hansjörg Kutterer*
Co-convener: *Richard Gross, Detlef Angermann, Toshimichi Otsubo*

Description
The Global Geodetic Observing System (GGOS) of the International Association of Geodesy (IAG) has been designed to advance our understanding of the dynamic Earth by quantifying our planet's changes in space and time. It provides the observations needed to map, monitor and understand changes in the geodetic parameters describing the Earth system and the underlying processes. A global geodetic frame of reference of high quality and consistency is provided as the fundamental backbone for monitoring and consistently interpreting key processes. Moreover, GGOS complements other Earth monitoring systems and services as a unique contribution of the global scientific geodetic community. Present challenges are the monitoring of geo-hazards, sea level variations, global height changes or atmospheric parameters.

The focus of this symposium lies on the progress of the consistent scientific integration of Earth geometry, rotation and gravity observations as well as related numerical and geophysical models. Presentations are welcome which address (1) the observation architecture, (2) the standardization, management, processing and interpretation of the GGOS observation data, (3) the implementation of new observations technologies such as atom-interferometry, highly precise clocks, ring laser gyroscopes, (4) the integrated analysis and interpretation of geodetic parameters, time series and fields.

IASPEI Symposia

IASPEI01 Seismological Observation and Interpretation

S01 Open session

Convener: *Thomas Meier*
Co-convener: *Domenico Di Giacomo, Aitaro Kato*

Description
Essential for seismology is the rapid and reliable detection, location, and magnitude estimation of seismic events based on effective data retrieval, data archiving and analysis. Presentations are invited for the following topics:

1. Developments in seismic networks and data centers, international data exchange and management of massive data sets.
2. Analysis of errors in onset time readings. Automated determination of onset times for crustal, mantle, and core phases including their uncertainties.
3. Location of seismic events and developments in new location techniques like reverse time migration and multiple event location techniques. Estimation of location uncertainties using ground truth events.
4. Developments in array techniques for the detection and location of events as well as for measurements of seismic wavefield attributes.
5. Estimation of magnitude, energy and moment of seismic events at various scales.
6. Determination of seismic source parameters from analogue recordings.
7. Analysis of earthquake catalogues with respect to their completeness, homogeneity, uncertainties, magnitude-frequency distribution, and spatio-temporal distribution of events.
8. Propagation and inversion of seismic waves

S02 Anthropogenic seismicity

Convener: *Stanislaw Lasocki*
Co-convener: *Carlos Alberto Vargas Jimenez, Hiroshi Ogasawara, Harsh Gupta*

Description
The phenomenon of anthropogenic seismic activity is an unwanted rockmass response to technological processes. With rising demands for energy and minerals this type seismicity appears in areas previously known as aseismic and in association with quite diverse technological processes. The induced or triggered earthquakes accompany underground and open-pit mining, conventional and unconventional hydrocarbon production, reservoir impoundment, geothermal energy production, underground fluid and gas storage including carbon sequestration and many other technological processes that perturb the boundary conditions in the affected rockmass. The socio-economic impact of the triggered and induced seismicity is very significant. On the one hand, these events, though being small compared to tectonic earthquakes, because of their shallowness are often damaging and occasionally devastating. On the other hand, the hazards associated with triggered earthquakes can be and are often overrated. It is clear that vital technological activities can lose public confidence unless the accompanying seismic risks are accurately assessed and properly presented to public. Finally, earthquakes whose origin, whether natural or anthropogenic, is under debate, pose questions that need to be answered with high certainty. The goal of this session is to recognize the severity of the anthropogenic seismicity world-widely, and to summarize the present state of knowledge about these seismic processes. We welcome both cross-sectional multi-aspect theoretical, methodical and experimental studies as well as interesting case histories linked to particular inducing technologies. The session is meant, among others, to help in identifying common areas of seismic processes induced by different technologies. Consideration on the predictability and controllability of anthropogenic earthquakes are especially invited.

S03 Imaging of heterogeneities in the Earth with seismic scattered waves and ambient noise

Convener: *Hisashi Nakahara*
Co-convener: *Ulrich Wegler*

Description
Seismic scattered waves or coda waves carry rich information on heterogeneities of the Earth. For example, the spatial distribution and the frequency dependence of the strength of scattering attenuation and intrinsic absorption in the Earth have been estimated from amplitude information of coda waves. Recently ambient noise cross correlation has also been used to study seismic structure in the Earth thanks to the development of seismic interferometry. Moreover, time-lapse imaging or monitoring of the Earth has been conducted using tiny changes in phase information of coda waves and ambient noise cross correlation. In order to advance these studies, following studies would be necessary: theory and observations of wave propagation in realistic heterogeneous media including scattering and attenuation, coda wave and full envelope analysis, generation mechanisms and characteristics of ambient noise, theoretical and practical studies on seismic interferometry, temporal change in medium velocity and heterogeneity, and so on. We would like to widely invite presentations related to the above subjects.

S04 Historical and macroseismic studies of earthquakes

Convener: *Paola Albini*
Co-convener: *Kenji Satake*

Description
Instrumentally reliable data on earthquakes, depending on the area of the world, span no more than a century, too short a period to grasp effectively the seismic history of a region. Historical and macroseismic data, as opposed to instrumentally recorded data, contribute expanding backwards in time our knowledge of the seismic behaviour of an area, to the point that they are today widely recognised by the seismological community as crucial, especially in seismic hazard related studies. Researchers dealing with the interpretative processes of deriving seismological data from diversely originated and –originally- non-seismological observations of earthquake effects are invited to present case histories derived from their own experience. In addition to a discussion on how macroseismic effects on people and buildings are collected and processed, considerations on how the data - derived both from written accounts and in situ geological investigations - of effects on the natural environment is treated, are invited. Finally, we welcome suggestions from emerging, fresh looks at how favouring an interdisciplinary approach may result in an exhaustive reappraisal of individual earthquakes or the seismicity of an area.

S05 Preservation and usage of analog seismogram archives

Convener: *Paul Richards*
Co-convener: *Graziano Ferrari, Emile Okal*

Description
Seismology as an observational science is based upon studies of ground motion from earthquakes and explosions that were successfully documented by analog recording methods for about eighty years, prior to the emergence of digital recording in the 1960s and 1970s. We ask: how can archives of analog seismograms be turned into a usable resource in the digital era, which today permits sophisticated methods of analysis that cannot directly be applied to the earlier types of recording?

We note that the time-scale of earthquake occurrence in different regions has often required examination of ground motions recorded over periods far longer than the three or four decades for which digital documentation is available. Concerning research on explosions and how well nuclear testing can be monitored by seismological methods, we note (1) that almost all such explosions in the atmosphere, at the surface, and underwater, took place prior to the modern era of digital recording; and (2) that there are far more analog recordings of underground nuclear explosions at regional distances, than digital.

Vast archives of analog seismograms exist in many different countries, that have developed different practices on how such archives should be treated. Specific efforts at scanning and digitizing key datasets have been successful, and such efforts at data rescue need to be communicated to institutions responsible for unused archives. Basic documentation on what data exist and what can be accessed, is hard to find. Very few seismologists who received their training since the 1980s have practical experience of working with analog seismograms. Seismologists who were trained in the 1970s or earlier and are still active, face a daunting task in developing ways to bring out the relevant information recorded in the past, for study using the methods that future generations of seismologists will surely develop. Opportunities for interaction between those familiar with analog seismograms, and modern analysts, will not last indefinitely. Can we develop consensus on what subsets of analog data should be saved, if such data cannot all be kept indefinitely?

Presentations are invited to this special session, that bring out scientific results derived from analysis of analog seismogram archives, and/or assessments of management issues related to the production of scientific results. Following the session a panel will discuss key steps needed, to plan and coordinate the work of extracting and circulating useful information from analog seismogram archives.

S06 Advancement in methodologies for CTBT monitoring

Convener: *Tormod Kværna*
Co-convener: *Michelle Grobbelaar, So Gu Kim, Stephen C. Myers, Nurcan Meral Ozel, David Jepsen*

Description
The waveform networks (seismic, infrasound and hydroacoustic) of the International Monitoring System (IMS) for verifying compliance with the Comprehensive Nuclear-Test-Ban Treaty (CTBT) together currently consist of more than 200 high-quality stations distributed worldwide. Data from these stations has become a very important asset in the development of methods and the performance of experiments related to nuclear explosion monitoring, as well as for basic earth scientific studies. In this session we call for papers focusing on recent research and developments in seismology and seismoacoustics advancing the capability to monitor compliance with the CTBT. Examples include analysis of seismic and infrasound signals from the DPRK nuclear explosions, absolute and relative event locations, improvement in seismic velocity models, event characterization and identification, processing methods for arrays, three-component stations and networks, as well as specific field experiments.

IASPEI02 Earthquake Hazard, Risk and Strong Ground Motion

S07 Strong ground motions and earthquake hazard and risk

Convener: *Toshiaki Yokoi*
Co-convener: *John Clinton, Massimiliano Pittore, Masumi Yamada, Jamison Steidl*

Description
Dense networks with high quality strong motion sensors, often incorporated alongside broadband seismic or GNSS instrumentation, are now the norm in many regions of the world, with continuous data available with minimal latency for a wide variety of applications.

These recordings are allowing to improve seismic hazard calculations both for long term planning and for real time assessment and rapid response. Furthermore, the development of innovative tools for assessing exposure and to follow its dynamic are offering new opportunities for a better assessment of earthquake risk.

This symposium solicits contributions that describe novel instrumentation and (permanent or temporary) network approaches that include strong motion monitoring, and real-time or off-line data processing and dissemination strategies that interpret strong motion records. Significant results of studies dealing with seismic hazard and risk assessment (including real time applications) by innovative approaches and methodological improvements are particularly welcome as well as those performed at regional, national or site-specific scale.

S08 Paleoseismology and paleotsunami studies: their potential and limitation

Convener: *Koji Okumura*
Co-convener: *Masanobu Shishikura, Xiwei Xu*

Description
Geologic and historic studies on past large earthquakes and tsunamis are the keys to know the hazards in the future and to prepare for them. A lot of data on paleoearthquakes and paleotsunamis have been acquired and are applied for hazard assessments and the assessments have been tested by actual events. The 16 April 2016 Kumamoto earthquake, for example, was a successful case for rupture and slip forecast but timing had not been constrained. On the other hand the 2004 Sumatra and 2011 Tohoku earthquakes and tsunamis were far beyond our knowledge at the time of the occurrence. These experiences urge paleoseismology to evaluate its potential and limitation and explicitly announce them. This session invites the latest worldwide researches on paleoearthquakes and paleotsunamis with reflection and perspective for better hazard assessments. The contributions on the investigation on actually occurred earthquakes and tsunamis recently with reference to pre-event studies are much encouraged.

IASPEI03 Earthquake Generation Process

S09 Open session: Earthquake generation process - physics, modeling and monitoring for forecast

Convener: *Eleftheria Papadimitriou*
Co-convener: *Alexey Zavyalov, David Rhoades, Naoshi Hirata*

Description
It is known that the process of destruction is not a momentary act, but there is a process taking place in time and

space. In preparation of macro-destruction destruction process is going through a number of levels (stages), starting with the micro-scale and ending on macro-scale, including earthquake focal area. In this symposium, we invite researchers to discuss the results and directions for further researches on the physics of seismic process - from experiments in laboratory conditions, rock bursts in mines and in seismically active regions during the preparation of strong earthquakes.

Special emphasis will be given to quantitative physical models of the seismic process at different scales, observations on earthquake triggering by other earthquakes or nearby faults, and synchronization between nearby faults with positive stress coupling, fault system interactions controlling earthquake occurrence, the connection of smaller magnitude seismicity with stress changes as expressed through the Rate/State model, calculation of stress changes from changes in earthquake occurrence. Modeling and simulations across a wide range of spatial and temporal scales provide a better understanding source processes and interactions, and advance predictive capabilities.

S10 Development, testing and application of earthquake forecasting models

Convener: *David Rhoades*
Co-convener: *Antonella Peresan, David Jackson, Kosuke Heki*

Description
The provision of authoritative information about the future occurrence of potentially damaging earthquakes requires the development, testing and application of earthquake forecasting models. Model development is being facilitated by the improvement of potential data and modelling inputs. Long-term models, which have previously relied mainly on earthquake and fault data inputs, can now be enhanced by the inclusion of strain–rate estimates derived from geodetic data. Medium Eand short–term models can also entertain inputs from geodetic data, models of stress accumulation and space–based geophysical observations. Some studies of proposed earthquake precursors are advancing from the anecdotal stage to the model development stage. Many proposed models are being prospectively tested by the Collaboratory for the Study of Earthquake Predictability in a variety of regions and on a variety of timescales. There is on-going discussion about which consistency and comparative tests should be used. Methods have been proposed for forming hybrid forecasting models from several existing models and/or input data streams. Long-term models are widely applicable in seismic hazard analysis. Short-term and hybrid models have been applied to inform communities during recent mainshock–aftershock sequences. The form, in which authoritative information about future earthquake occurrence should be disseminated, in order to enhance earthquake preparedness in threatened communities, is an important issue. We invite contributions on all these aspects.

S11 Geo & space technologies to study pre–earthquake processes: Observation, modeling, forecasting

Convener: *Dimitar Ouzounov*
Co-convener: *Katsumi Hattori, J.Y Liu, Masao Nakatani*

Description
Session will primarily concern the interdisciplinary observations of earthquake processes and our further understanding of the physics of earthquakes and the phenomena that precedes their energy release. Based on interdisciplinary studies session would provide new evidence about possible coupling between our planet's environment with its lithosphere, which provides a better understanding of the physics of earthquake and earthquake cycles. The session anticipates talks that include but not limited to observations, modeling and analyses of seismic, geochemical, electromagnetic, and thermodynamic processes related to stress changes in the lithosphere along with their statistical and physical validation. Presentations on the latest developments in earthquake predictability and prospective testing associated with major earthquakes are welcomed.

S12 An interdisciplinary approach towards earthquake prediction studies

Convener: *Dimitar Ouzounov*
Co-convener: *S. Pulinets, Katsumi Hattori, J.Y. Liu, Q. Huang*

Description
This session expands the discussions on earthquake predictability by presenting the latest validation of cross-disciplinary physical signals associated with the major earthquakes. It advances the existing studies on earthquake phenomena towards integration in a common interdisciplinary approach to understand better the earthquake processes. This approach could provide some new evidences about the existence of pre-earthquake signals, which may help for the better understanding of global tectonics and volcanic activities. The topics of the session are as follows but not limited:

- Discussion on the physics of earthquake preparation processes;
- Theory, laboratory experiments, computational simulation for generation and propagation of pre-earthquake signals;
- Seismic, electrical, electromagnetic, electro-chemical and thermodynamic observations of pre-earthquake processes and their connection with seismic cycle.

IASPEI04 Earthquake Source Mechanics

S13 Earthquake source mechanics

Convener: *Satoshi Ide*
Co-convener: *Hideo Aochi, Simone Cesca, Torsten Dahm, Yuji Yagi*

Description
Recent high-quality seismic and geodetic observations provide large volume of data, which enabled accurate determination of earthquake locations, size, and source parameters including moment tensors, and detailed imaging of earthquake rupture processes, with the aid of improvements in various techniques solving inverse problems. Abundant information from these analyses is the basis to study diversity of seismic activity including swarms and triggered events, and to seek governing laws and conditions for rupture initiation and growth, and is also useful to estimate the stress state, fault geometry, and fluid movement around seismic regions. Entire earthquake process from long-term tectonic loading and slow nucleation to rapid rupture propagation with strong motion radiation is now recognized using numerical simulations. The validity of assumptions in these simulations is tested by the data analysis and laboratory experiments, which are also supported by several drilling projects. In this symposium, we invite contributions from data analysis and interpretations for earthquake parameters and source process, improvement and validation of routine analysis techniques, theoretical and numerical modeling for dynamic ruptures and seismic cycles, and observational and experimental works for the physics of earthquakes. Studies of giant earthquakes including recent events such as the 2015 Nepal (Mw 7.8), Illapel, Chile (Mw 8.3), 2016 Kumamoto, Japan (Mw 7.0), and Central Italy (Mw 6.2) earthquakes will be also important topics in this symposium.

IASPEI05 Earth Structure and Geodynamics

S14 Upper mantle and transition zone dynamics and structure

Convener: *Christine Thomas*

Description
The main features of the upper mantle and transition zone are the seismic discontinuities that define it. The discontinuities are believed primarily due to phase changes in the olivine component of the peridotitic mantle, and to a lesser extent from

non-olivine components. The radial structure is disrupted by plumes and subducted lithospheric slab material that can often be imaged tomographically. Scattered waves seen in the coda of direct arrivals indicate the presence of smaller scale heterogeneities as well. Both the large-scale and small-scale structure are products of the dynamical evolution of the mantle but also of mineralogical variations. We welcome contributions to this session from observational and theoretical seismology, geodynamics and mineral physics that yield insights into the upper mantle's dynamical processes and composition.

S15 Mid-mantle structure

Convener: *Christine Houser*

Description

The mid-mantle, roughly corresponding to the region extending from 800 - 2000 km depth, is enigmatic since the signals detected by seismic tomography are weaker and lack the vertical and radial coherence observed in the transition zone and lowermost mantle. Although relatively seismically quiet, the mid mantle regulates the material transfer from surface plate tectonics and the thermal (chemical?) boundary at the core-mantle interface. Recent advancements in seismic imaging, dynamic modeling, and mineral physics have found signals in the mid mantle such as scattered wave arrivals, viscosity contrasts, and the iron electron spin transition which provide new opportunities to examine Earth's convective history. In this session, we invite observations and modeling from seismology, geodynamics, geochemistry and mineral physics regarding the mid-mantle's present state and its role in Earth evolution.

S16 Large low shear velocity provinces and deep mantle structure

Convener: *Allen K. McNamara*

Description

Large low shear velocity structures (LLSVPs) are characteristic of seismic wavespeeds in the lowermost mantle. They comprise a few percent of the volume of the Earth and thus are a significant component of its structure. LLSVPs exhibit features suggesting that they are compositionally different to the bulk of the mantle, though their origins are unclear. In this session, we invite contributions from observational seismology, geodynamics and mineral physics with the aim of understanding the locations, origins and behavior of LLSVPs.

S17 Outer core structure and dynamics

Convener: *George Helffrich*

Description

The outer core is believed to be liquid iron-nickel alloy with around 10 wt% of additional light elements such as Si, C, S, H, P or N. While its density and wavespeed profile is very close to being one of a homogeneous composition in uniform self-compression, recent seismological studies suggest lower wavespeeds near the core-mantle boundary and the inner core boundary. In this session we invite contributions bearing on the chemical homogeneity of the outer core. Contributions from seismology, geomagnetism, core dynamics, mineral physics, geochemistry and experimental petrology are welcome.

S18 Inner core structure

Convener: *Hrvoje Tkalcic*

Description

The inner core crystallizes from the liquid iron alloy of the outer core, yet its seismic structure is complex. Wavespeeds in it are anisotropic with a strength and possibly an orientation that varies radially. Multiple datasets confirm quasi-hemispheric modulation of bulk wavespeeds in the top several hundred kilometres of the inner core, which, to date, is the most robust seismological observation. The inner core boundary has been shown to have complex lateral variations, possibly due to topography and lateral variations in crystallisation. The recent attenuation studies converge on a more complex lateral variation than purely hemispheric. The complex structure reflects both the present thermochemical conditions in the core and its dynamical evolution after crystallisation in the past. We invite contributions in this session from seismology, core dynamics, geomagnetism and mineral physics that bear on inner core structure and evolution.

S19 Planetary seismology

Convener: *Philippe Lognonné*
Co-convener: *Bruce Banerdt, Taichi Kawamura, Patrick Gaulmes*

Description

Since the historical Apollo 11, seismology is no longer limited to Earth. The success of the Apollo Passive Seismic Experiment generated a variety of seismic investigations even 40 years after the end of the Network operation. The seismic lunar structure, including core, mantle and crust as well as the detection of Tidal triggered Deep Moonquake and high energetic seismic impacts are a few of these discoveries. More recently, normal modes have been detected on Jupiter and ring's structures associated to Saturn's normal modes have been detected. Last but not least, the Insight mission, focused on seismology, will be launched in 2018 to Mars and seismology might also be considered for the exploration of Europa and Venus for future missions.

The goals of this session are to present the state of the art in planetary seismology, either for the analysis of data from Apollo and Giant planets, or for the modeling of seismic signals and seismic sources on all solar system planets and small bodies. Presentations on existing space qualified seismic instruments, new instrumental or mission concept will also be welcome.

S20 Earth and planetary space and remote sensing seismology; i.e., seismology without seismometers

Convener: *Lucie Rolland*
Co-convener: *Kosuke Heki, Elvira Astafyeva, Philippe Lognonné*

Description

This session will present recents observations and modelling of Quakes generated Waves détected without seismometers and will includes measurement of seismic waves by GPS in the ionosphere, airglow for tsunami, and other technics in Earth and Planetary seismology.

IASPEI06 Tectonophysics and Crustal Structure

S21 Lithospheric structure

Convener: *Jaroslava Plomerová*
Co-convener: *Shun Karato, Juan Carlos Afonso, Ulrich Achauer, Kevin P. Furlong*

Description
The aim of this multidisciplinary symposium is to bring together scientists working in the fields of observational and theoretical seismology, electromagnetism, geodynamics, tectonics, mineral physics, experimental petrology, modelling and geochemistry to present their achievements in various studies of the lithosphere-asthenosphere system, to stimulate interdisciplinary discussion and interpretations of the results. Contributions presenting results on

- Scales of the lithosphere and upper mantle heterogeneity and anisotropy. Regional and global studies
- Origin and imaging of the mantle lithosphere discontinuities (Moho, MLD, LAB, etc.)
- Advantages and resolutions of different inversion methods for studying the deep Earth structure
- Models of anisotropic fabrics of the lithosphere-asthenosphere system resulting from ancient and recent processes
- Dynamics of the lithosphere-asthenosphere system from multi-observable probabilistic tomography
- Constraints from textures in xenoliths and exposed mantle sections
- Constraints from laboratory studies
- Constraints from geodetic observations (e.g., post-seismic deformation, slow slip events)
- Mechanical interactions between the lithosphere and asthenosphere
- The role of water in the development of anisotropy
- Relationship between surface tectonics and the underlying mantle flow
- The future of geophysical imaging,

achieved with the use of different technique, are preferably welcome. Special attention will be paid to the lithosphere-asthenosphere boundary (LAB), the most extensive and active plate boundary on the Earth, which remains, particularly beneath continents, relatively cryptic compared to other first-order structural subdivisions of Earth. Determination of the LAB depth and answers on what the LAB means from the structural, rheological and physico-chemical point of view remains highly debated and represents a first-order problem in the geosciences. Only multi-disciplinary and/or transdisciplinary efforts, bringing together various disciplines from the Earth Sciences, can shed light on the above questions and lead to i) a better understanding of the lithosphere-asthenosphere system, ii) unravel what the LAB truly is, iii) how it evolves, iv) how it can be better imaged, and v) what role it has played and still plays in the evolution of our planet.

S22 Lithosphere structure and dynamics: Plate boundary deformation at lithospheric scale (co-sponsored by the International Lithosphere Program (ILP))

Convener: *Kevin Furlong*
Co-convener: *Rob Govers*

Description
The goal of this symposium is to bring together scientists who are observing and modeling plate deformation, with an emphasis on plate boundary processes. We are interested in both modern (e.g. GPS, InSAR, Seismologic, etc.) rates and patterns of plate boundary deformation and also the geologic record of past deformation in and near plate boundaries, including paleoseismic studies. Topics of interest include (but are not limited to): partitioning of deformation along plate boundaries, permanent versus ephemeral deformation, near-surface versus deeper rates and patterns of deformation, role of rheology in localizing/diffusing plate boundary deformation, and related topics. We welcome contributions from all styles of plate boundary deformation, i.e. subduction, rifting, and translational.

IASPEI07 Education and Outreach

S23 Geoscience and society

Convener: *Satoko Oki*
Co-convener: *Akihiko Ito, Fuhsing Lee, Alessandro Amato*

Description
For better or worse, geoscience has impacts on the society. Geological phenomena such as earthquakes, tsunamis, landslides, or subsidence are of strong concern to the public especially in disaster-prone countries. This can be an advantage for geoscientists in outreach and education while other basic sciences first need to make efforts in publicity activities of their existences. Geoscience may also get special consideration in the share of the budget.

On the other hand, geoscientists are often accused for the damage caused by disasters. In some cases, this accusation arouses public distrust in geoscience or geoscientists. The public over-expectation in forecasting or predicting geohazards should be scaled back to an appropriate level corresponding to the realistic of geoscience, and this is one of the purposes of the outreach and education.

In this session, we widely report the communication with the public -- either school kids, mid- and high school students, undergraduate students, or the grownups -- regarding geoscience and geohazards. Science communication to build a familiarity to basic science can be an important candidate. We also welcome risk communication activities to empower the public to be prepared to the future disasters.

IASPEI08 International Heat Flow Commission

S24 Methods and instruments of experimental geothermics - application and recent evolution

Convener: *Yuri Popov*
Co-convener: *Andrea Förster*

Description
Experimental geothermics is a basis of fundamental investigations of the Earth's thermal regime and different applications in applied science and industry. Representativeness of geothermal databases, reliability of theoretical modeling, role of basic geothermics in wide spectrum of Earth's sciences, efficiency of applied geothermics depend on quality of experimental methods and instruments and reliability of experimental geothermal data. Different aspects of experimental geothermics will be discussed within the session program. The session will address the following topics:

- Advanced methods and instruments for determination of temperature and temperature gradient in wells;
- Technique for determination of equilibrium temperature gradient from temperature measurements in drilled and shut-in wells and application results;
- Possibilities of optical-fiber technique for temperature measurements in wells;
- Determination of 3D variations of rock thermal properties accounting for anisotropy and multi-scale heterogeneity;
- Laboratory technique for thermal property measurements at in-situ conditions and measurement results;
- Rock thermal property measurements in wells;
- Measurements of rock thermal properties on high porous and fractured rock samples, weakly consolidated rock samples, and core cuttings;
- Determination of rock thermal properties from standard petrophysical logging data;
- Experimental data on correlations between thermal and other physical properties of rocks;

- Experimental databases on rock thermal properties accounting for lithology, porosity, pore fluid properties, rock anisotropy, in-situ conditions, etc.;
- Determination of heat production;
- Metrological testing of instruments for measurements of temperature, temperature gradient and rock thermal properties as necessary stage in experimental geohermics;
- Recording vertical variations in conductive heat flow;
- New applications of experimental geothermics related to problems of geothermal energy and hydrocarbon recovery.

Other contributions related to experimental geothermics are also invited.

S25 Development and application of geothermal databases

Convener: *Shaopeng Huang*
Co-convener: *Will Gosnold*

Description

Geothermal data such as terrestrial heat flow, underground temperature, and thermal conductivity, thermal diffusivity, specific heat, radiogenic heat production rate of rocks are fundamental to our understanding of the origin and the flow of Earth's internal heat. On the one hand, they carry rich information about the Earth's energy budget, evolution, tectonic history, thermal structure, paleoclimate change, and geothermal energy resource potentials on various scales; on the other hand, their measurements are subject to site-specific perturbations associated with geological, geographical, hydrological, and even climatic settings. This symposium is intended to provide a forum for the scientists and students to share their successful stories and discuss the challenges encountered in the development and application of various geothermal databases. The topics of interests include, but not limited to, the followings:

- Update and reanalysis of the Global Heat Flow Database;
- New development in the reconstruction of a climate history from borehole temperatures
- Renovation of an existing geothermal database with advanced online database technology
- Development of new databases of geothermal interests
- Geothermal database in the assessment of the sustainability of geothermal energy development
- Quality control and other challenges in the development of a geothermal database

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S26 Exploring connections between heat flow and tectonics

Convener: *Valiya M. Hamza*
Co-convener: *Makoto Yamano*

Description

Understanding the role of terrestrial heat flow in molding tectonic processes in the interior of the Earth continue to be a major topic of interest in geosciences. The connecting links are multifaceted, spanning over such diverse topics as thermo-physical characteristics of subduction zones, brittle-ductile transition in the lithosphere, consequences of magma emplacement in the crust and thermal mobilization of minerals. Accordingly, the focus of the symposium will be on concepts and case examples on the interactions between heat flow and tectonic activities on local, regional and global scales. Specifically, this session call for papers on models and measurements describing terrestrial heat flux, characteristics of deep temperature profiles, consequences of magma emplacements at shallow depths, thermal mobilization of mineral resources and nature of interactions between subsurface temperature field and seismicity. Presentation and discussion of geothermal manifestations on local, regional and global scales are also welcome.

S27 Geothermal energy: Ground source heat pump, hydrothermal system, and hot dry rocks

Convener: *Makoto Taniguchi*
Co-convener: *Philipp Blum*

Description

Geothermal energy is one of the important renewable energy for sustainable society. This includes not only traditional deep geothermal system but also shallow ground heat pump, hydrothermal system, and dry rocks. In this session, we will present and discuss all geothermal energy from deep to shallow, and from wet to dry, on local, regional and global scales. This session calls for papers on observations, modeling, concepts and case studies of geothermal energy, in particular, interactions between deep geothermal system and shallow hydrothermal system, interactions between heat pump flow and surface conditions such as land use/cover, and interaction between hot dry rocks and fractured water flow, but not limited.

Kobe International Conference Center

* Closed Meeting

Room	Timing	Sat. July 29	Sun. July 30	Mon. July 31	Tue. August 1	Wed. August 2	Thu. August 3	Fri. August 4
Reception office (2F)	08:00-18:00	ISC ExeCom *						
Main Hall	13:30-16:00			Joint Opening				
	16:00-17:30							IASPEI Closing Plenary
	16:30-18:00			IASPEI Opening Plenary				
	17:30-18:00							Joint Closing
International Conference Room (301)	16:00-17:30							IAG Closing Plenary
	16:30-18:00			IAG Opening Plenary				
303	8:30-10:00		IASPEI Bureau *	IASPEI Office (SG)				
	10:00-12:00		IASPEI ExeCom *					
304	8:30-18:00		IAG Executive *	IAG Office (SG)				
401	18:00-20:00			IAG Council *	IAG Services	IASPEI Commission Source		
402	12:00-13:30				IAG Comission 4	IAG Int. Gravity Field Service (IGFS)	IAG Commission 1	
	18:00-20:00			IASPEI Commission Edu&Outr	IASPEI Commission CoSOI	IASPEI Commission Tect&Struct		
403	12:00-13:30				IAG Comission 3	IAG ICC Theory	IASPEI ExeCom + Scientific Program Committee 2019	
	12:00-15:00		ISC Governing Council *					
	15:00-18:00		FDSN 1_ General Meeting					
	18:00-20:00			IASPEI Commission SHR	IASPEI Commission Earth Str Geodyn	IASPEI Commission Modeling & Pred		
404	12:00-13:30			IASPEI LACSC	IASPEI ASC	IASPEI AfSC		IASPEI ESC
	18:00-20:00			IAG GGOS Focus Area 1	IAG Comission 2		IAG GGOS BNO CSM	
503	12:00-13:30			FDSN WG1	FDSN WG2	FDSN WG3	FDSN WG5	
	12:00-13:00							FDSN WG4
	13:00-16:00							FDSN 2_ General Meeting

Guidelines for oral presentation

All speakers are requested to check all of the presentation materials / data at the podium in your session room during a lunch break or a coffee break just before your session. Please bring a USB storage device (type A) with your presentation data. Please be seated in the "Next speaker's seat" at least 10 minutes prior to the start of your presentation.

1. Equipment

The session rooms are equipped with the following items for presentations:

- LCD projector
- A podium with microphone and desk-top light, laser pointer
- A Windows PC for the speakers

Please bring your presentation data on a USB storage device (type A) and upload it on the conference PC on the podium in the session room. Please make sure to bring your own PC and connector if your presentation data is made by Mac or if you to use movies (see “for presenting with your own PC” below.).

PC in the each session room for presentation:
OS: Windows 7
Applications: Power Point (Version: 2016 / 2013 / 2010 / 2007) / Acrobat Reader

Notes

1) Aspect ratio of the screen is 4 by 3.
2) When you make a PowerPoint file for your presentation, please be sure that all graphics are embedded in the presentation file. Fonts should be standard fonts such as Times New Roman, Arial, Courier etc. If nonstandard fonts must be displayed, they should be embedded in the presentation files.
3) Sound function will not be available.

<For presenting with your own PC>

1) Please save all of your presentation data on your desktop in advance.
   Save all data linked to your presentation data in the same folder on your desktop.
2) Turn off any sleep functions and screen savers.
3) Please bring all required connection cables for your own PC.
4) Only D-sub 15-pin (VGA) connector will be available. Please bring your own power adapter, a transformer, and a D-sub 15-pin (VGA) adapter to connect to projector.
5) Please bring back up data to the conference site.
6) To avoid the possible spread of computer viruses, always scan your presentation files beforehand with updated anti-virus software.

2. Presentation time

Type of presentation	Presentation time	Discussion	Total
Invited talks (30 min. / 15 min.)	27 min. / 12 min.	3 min.	30 min. / 15 min.
Oral presentations	12 min.	3 min.	15 min.

3. Time keeping (Bells)

<Invited talks (30min.)>

After a lapse of...	Caution	
25 min.	Once	Warning
27 min.	Twice	End of Speech
30 min.	3 times	End of Discussion

<Invited talks (15min.) / Oral presentations>

After a lapse of...	Caution	
10 min.	Once	Warning
12 min.	Twice	End of Speech
15 min.	3 times	End of Discussion

Guidelines for poster presentations

1. Symposia grouping and location

The poster sessions will take place on the 2nd and 3rd floor in the Kobe Chamber of Commerce and Industry. The poster board will be marked with the program number. Please check p.52-53.

Session grouping & room

Poster I

Symposia: G01, G02, G04, G06, J01, J03, J05, J06, S03
Room: Shinsho Hall (3rd floor)

Poster II

Symposia: S01, S02, S06, S07, S09, S10, S11, S12, S19, S20, S22
Room: Event Hall (2nd floor)

Poster III

Symposia: G03, G05, G07, J02, J04, J07, J08, J09
Room: Shinsho Hall (3rd floor)

Poster IV

Symposia: S04, S05, S08, S13, S14, S17, S18, S21, S23, S24, S25, S26, S27
Room: Event Hall (2nd floor)

2. Mounting and presentation time

Posters will be allotted in four groups. Presenting authors are expected to stand by their poster during the allocated core times.

Poster I & II:
August 1, 9:00-18:00 (Core time: 15:30-16:30)
August 2, 9:00-18:00 (Core time: 15:30-16:30)

Poster III & IV:
August 3, 9:00-18:00 (Core time: 15:30-16:30)
August 4, 9:00-16:00 (Core time: 15:00-16:00)

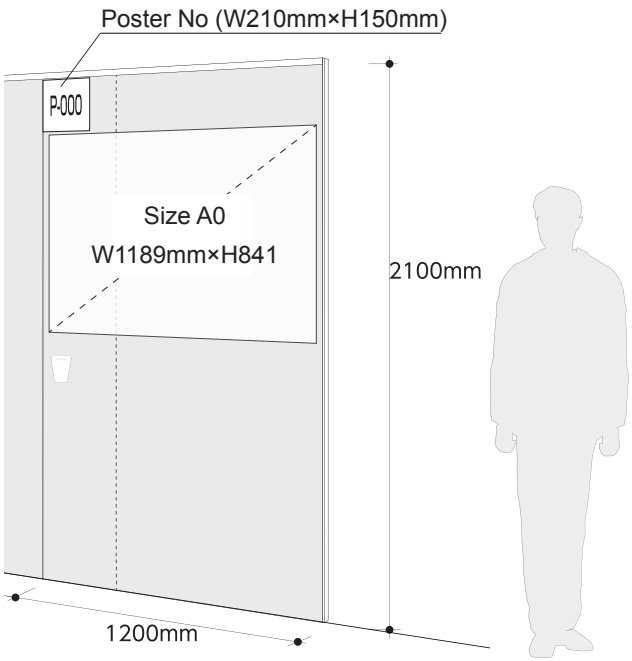
All authors are responsible for mounting and removing their own posters (The secretariat prepares pushpins). Your poster should be mounted before the beginning of the first core time and removed at the end of the last core time.

Poster removal:
Poster I & II: August 2, 18:00-19:00
Poster III & IV: August 4, 16:00-17:00

**Please make sure to bring back your poster with you. The Secretariat will NOT be responsible for the loss of the poster after removal time.

3. Poster dimensions

Each poster board will be given a specific number. Please make sure to mount on the poster board with the number assigned to your poster presentation. The poster number consists of the symposium code (serves only to keep display logic) and number of actual poster board (e.g., J01-P-01 means poster board 01 within the J01 symposium)
The recommended dimension of your poster is 1189mm wide and 841mm high (landscape orientation).
In order to fit the poster board, your poster should not exceed the recommended size. Prepare your material beforehand so that it will fit the space available and can be easily attached to the board.



4. Poster printing

Please make sure to print your poster in advance. There are some stores which have a service to print posters on-site. Please check the website below.

Kinko's Sannomiya Center (Japanese language site only)
http://www.kinkos.co.jp/store/kb001.html

Guidelines for chairs

Sessions should be started strictly on time. At the session, the chairpersons should be active in keeping the time limit of each talk so that time can be spared for questions.
There will be assisting staff members to help with the operation.

1. Next chairperson's seat

You are kindly requested to be seated at the "Next chairperson's seat" located in each session room at least 10 minutes prior to your session start.

2. Procedure of session

Keeping speakers on time is crucial for smooth and on-time proceeding of the program. Please make sure that all speakers present at the "Next speaker's seat" beforehand.

In the event of cancellation of presentation(s), please take its assigned time for discussion and start the session with the next presentation as originally scheduled.

1) Please introduce yourself to start the session, then, the title of presentation and the name of contributor to start each presentation.
2) Careful time-keeping is vital in ensuring smooth running of the whole program. Each speaker will be timed and notified the time.
3) If you have no question from audience, you are kindly requested to make some questions to the speaker.

3. Time keeping (Bells)

Chairpersons are requested to adhere to the time limitation and conduct the session in such a way that it progresses smoothly and punctually. The time allocated for each presentation is as follows:

Type of presentation	Presentation time	Discussion	Total
Invited talks (30 min. / 15 min.)	27 min. / 12 min.	3 min.	30 min. / 15 min.
Oral presentations	12 min.	3 min.	15 min.

A time keeper is assigned to each session room for time management. Speakers will be notified of their remaining time by the following rule:

<Invited talks (30min.)>

After a lapse of...	Caution	
25 min.	Once	Warning
27 min.	Twice	End of Speech
30 min.	3 times	End of Discussion

<Invited talks (15min.) / Oral presentations>

After a lapse of...	Caution	
10 min.	Once	Warning
12 min.	Twice	End of Speech
15 min.	3 times	End of Discussion

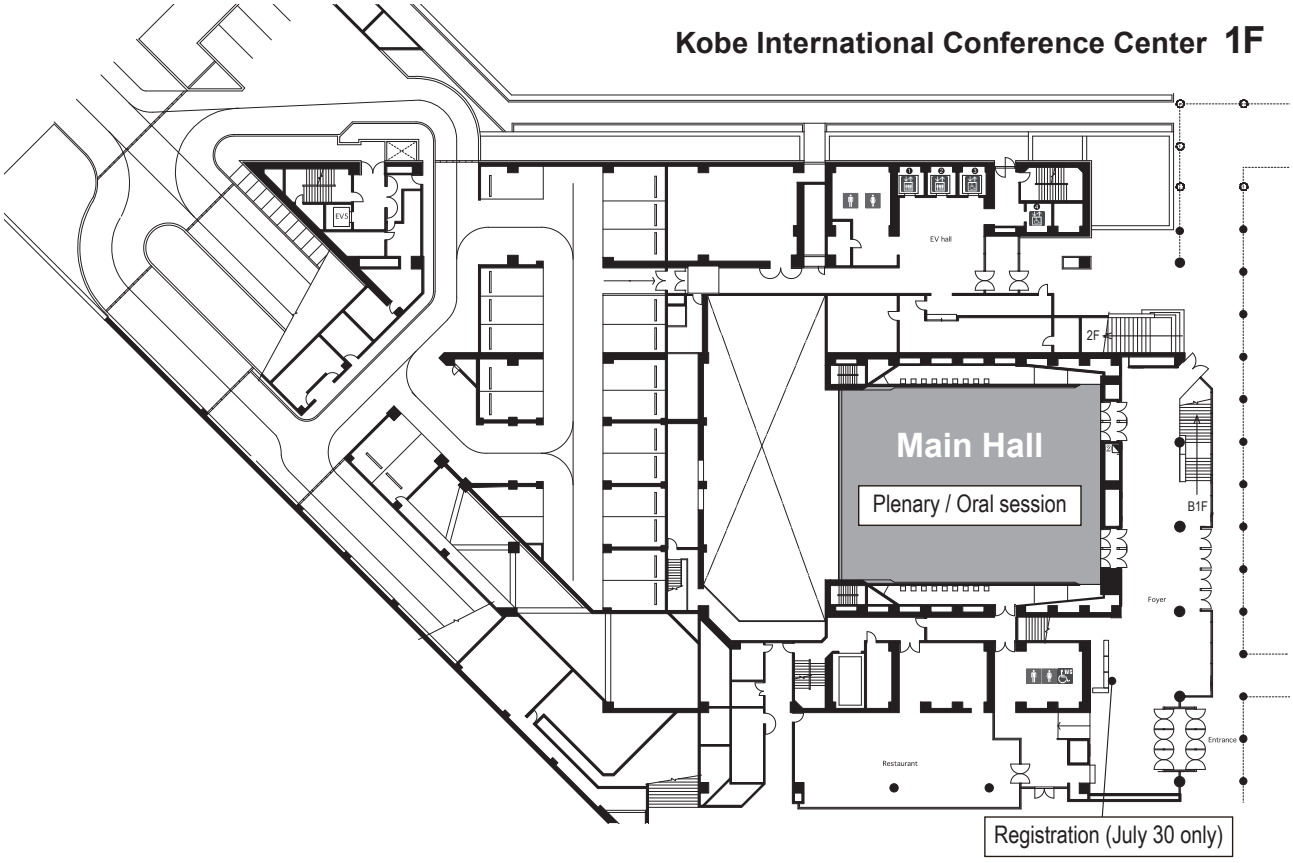
Date & Time \ Place		Kobe International Conference Center				
		Main Hall	Intl Conf Room (301)	401	402	403
Mon July 31	08:30-10:00	**S07-1** Strong ground motions and e rthquake hazard and risk	**J06-1** The spectrum of fault-zone deformation processes (from slow slip to earthquake)	**J03-1** Deformation of the lithosphere: Integrating seismology and geodesy through modelling	**S19-1** Planetary seismology	**S02-1** Anthropogenic seismicity
	10:30-12:00	**S07-2** Strong ground motions and earthquake hazard and risk	**J06-2** The spectrum of fault-zone deformation processes (from slow slip to earthquake)	**J03-2** Deformation of the lithosphere: Integrating seismology and geodesy through modelling	**S19-2** Planetary seismology	**S02-2** Anthropogenic seismicity
	12:00-13:30	Lunch / Business Meetings				
	13:30-16:00	**Joint opening ceremony Plenary lectures**				
	16:00-16:30	Coffee Break				
	16:30-18:00	**IASPEI Opening plenary**	**IAG Opening plenary**			
	18:00-20:00	Business Meetings				
Tue Aug 1	08:30-10:00	**S07-3** Strong ground motions and earthquake hazard and risk	**J06-3** The spectrum of fault-zone deformation processes (from slow slip to earthquake)	**J03-3** Deformation of the lithosphere: Integrating seismology and geodesy through modelling	**S19-3** Planetary seismology	**S02-3** Anthropogenic seismicity
	10:30-12:00	**S07-4** Strong ground motions and earthquake hazard and risk	**J06-4** The spectrum of fault-zone deformation processes (from slow slip to earthquake)	**S22-1** Lithosphere structure and dynamics: Plate boundary deformation at lithospheric scale	**S19-4** Planetary seismology	**S02-4** Anthropogenic seismicity
	12:00-13:30	Lunch / Business Meetings				
	13:30-15:00	**S07-5** Strong ground motions and earthquake hazard and risk	**J09-1** Geodesy and seismology general contributions	**S03-1** Imaging of heterogeneities in the Earth with seismic scattered waves and ambient noise	**S20-1** Earth and planetary space and remote sensing seismology; i.e., seismology without seismometers	**S02-5** Anthropogenic seismicity
	15:00-15:30	Coffee Break				
	15:30-16:30	Poster Session				
	16:30-18:00	**S07-6** Strong ground motions and earthquake hazard and risk	**J09-2** Geodesy and seismology general contributions	**S03-2** Imaging of heterogeneities in the Earth with seismic scattered waves and ambient noise		**S02-6** Anthropogenic seismicity
	18:00-20:00	Business Meetings				
Wed Aug 2	08:30-10:00	**S07-7** Strong ground motions and earthquake hazard and risk	**J02-1** Recent large and destructive earthquakes	**S03-3** Imaging of heterogeneities in the Earth with seismic scattered waves and ambient noise	**S14 -1** Upper mantle and transition zone dynamics and structure	**J01-1** Monitoring of the cryosphere
	10:30-12:00	**S07-8** Strong ground motions and earthquake hazard and risk	**J02-2** Recent large and destructive earthquakes	**S03-4** Imaging of heterogeneities in the Earth with seismic scattered waves and ambient noise	**S14-2** Upper mantle and transition zone dynamics and structure	**J01-2** Monitoring of the cryosphere
	12:00-13:30	Lunch / Business Meetings				
	13:30-15:00	**S07-9** Strong ground motions and earthquake hazard and risk	**J02-3** Recent large and destructive earthquakes	**S03-5** Imaging of heterogeneities in the Earth with seismic scattered waves and ambient noise	**S15-1** Mid-mantle structure	**J01-3** Monitoring of the cryosphere
	15:00-15:30	Coffee Break				
	15:30-16:30	Poster Session				
	16:30-18:00		**J02-4** Recent large and destructive earthquakes	**S06-1** Advancement in methodologies for CTBT monitoring	**S16-1** Large low shear velocity provinces and deep mantle structure	
	18:00-20:00	Business Meetings				

Kobe International Conference Center				The Kobe Chamber of Commerce and Industry	
501	502	504+505	503	Shinsho Hall (3F)	Event Hall (2F)
S01-1 Open session	**G02-1** Static gravity field	**G04-1** Earth rotation and geodynamics			
S01-2 Open session	**G02-2** Static gravity field	**G04-2** Earth rotation and geodynamics			
Lunch / Business Meetings					
Coffee Break					
Business Meetings					
S01-3 Open session	**G02-3** Static gravity field	**G04-3** Earth rotation and geodynamics	**S09-1** Open session: Earthquake generation process - physics, modeling and monitoring for forecast		
S01-4 Open session	**G02-4** Static gravity field	**G04-4** Earth rotation and geodynamics	**S09-2** Open session: Earthquake generation process - physics, modeling and monitoring for forecast		
Lunch / Business Meetings					
J05-1 Crustal dynamics: Multidisciplinary approach to seismogenesis	**G02-5** Static gravity field	**G06-1** Geodetic remote sensing	**S09-3** Open session: Earthquake generation process - physics, modeling and monitoring for forecast		
Coffee Break					
Poster Session					
J05-2 Crustal dynamics: Multidisciplinary approach to seismogenesis	**G02-6** Static gravity field	**G06-2** Geodetic remote sensing	**S10-1** Development, testing and application of earthquake forecasting models	**Poster I** (G01, G02, G04, G06, J01, J03, J05, J06, S03)	**Poster II** (S01, S02, S06, S07, S09, S10, S11, S12, S19, S20, S22)
Business Meetings					
J05-3 Crustal dynamics: Multidisciplinary approach to seismogenesis	**G01-1** Reference frames	**G06-3** Geodetic remote sensing	**S11-1** Geo & space technologies to study pre–earthquake processes: Observation, modeling, forecasting		
J05-4 Crustal dynamics: Multidisciplinary approach to seismogenesis	**G01-2** Reference frames	**G06-4** Geodetic remote sensing	**S11-2** Geo & space technologies to study pre–earthquake processes: Observation, modeling, forecasting		
Lunch / Business Meetings					
J05-5 Crustal dynamics: Multidisciplinary approach to seismogenesis	**G01-3** Reference frames	**G06-5** Geodetic remote sensing	**S12-1** An interdisciplinary approach towards earthquake prediction studies		
Coffee Break					
Poster Session					
J08-1 Imaging and interpreting lithospheric structures using seismic and geodetic approaches	**G01-4** Reference frames	**G03-1** Time variable gravity field	**S12-2** An interdisciplinary approach towards earthquake prediction studies		
Business Meetings					

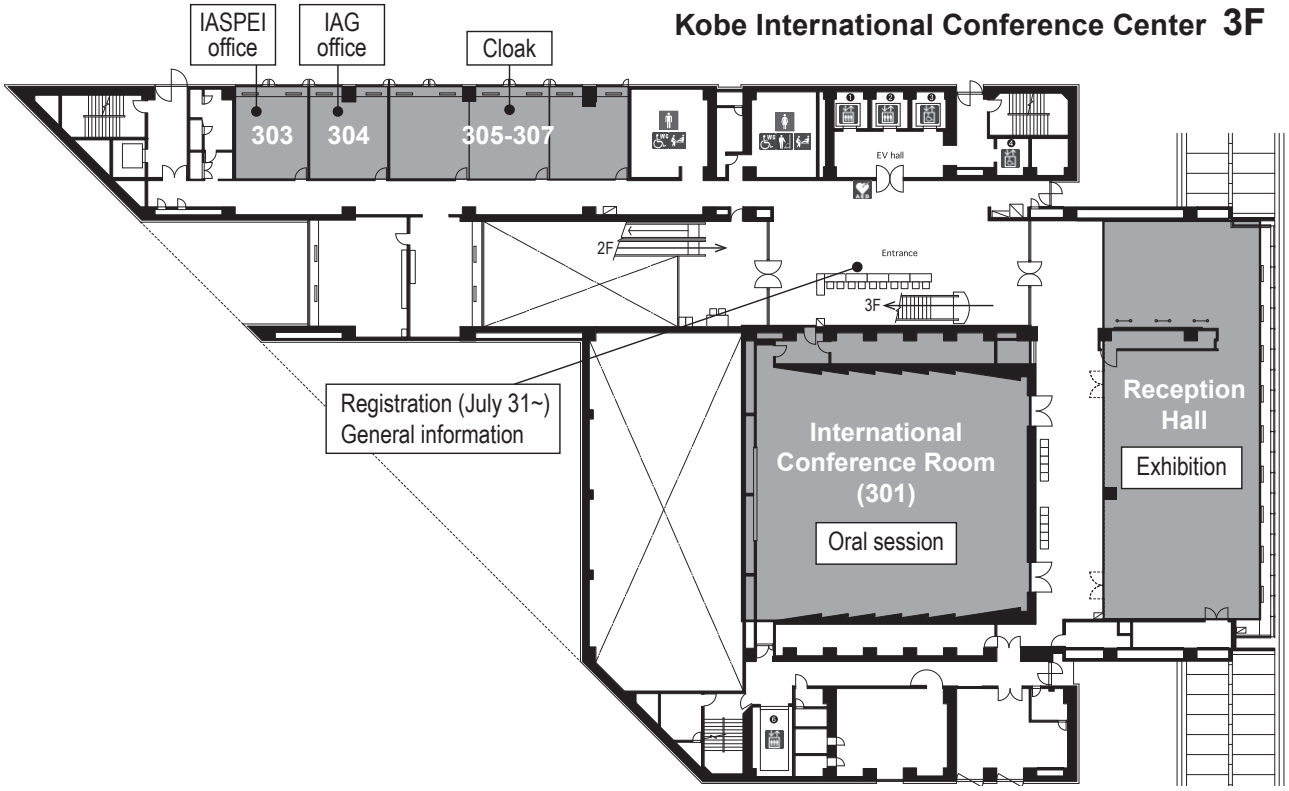
Date & Time \ Place		Kobe International Conference Center				
		Main Hall	Intl Conf Room (301)	401	402	403
Thu Aug 3	08:30-10:00	**S13-1** Earthquake source mechanics	**J04-1** Geohazard early warning systems	**J07-1** Tracking the sea floor in motion	**S17-1** Outer core structure and dynamics	**S04-1** Historical and macroseismic studies of earthquakes
	10:30-12:00	**S13-2** Earthquake source mechanics	**J04-2** Geohazard early warning systems	**J07-2** Tracking the sea floor in motion	**S18-1** Inner core structure	**S04-2** Historical and macroseismic studies of earthquakes
	12:00-13:30	Lunch / Business Meetings				
	13:30-15:00	**S13-3** Earthquake source mechanics	**J04-3** Geohazard early warning systems	**J07-3** Tracking the sea floor in motion	**S23-1** Geoscience and society	**S04-3** Historical and macroseismic studies of earthquakes
	15:00-15:30	Coffee Break				
	15:30-16:30	Poster Session				
	16:30-18:00	**S13-4** Earthquake source mechanics	**J04-4** Geohazard early warning systems	**J09-3** Geodesy and seismology general contributions	**S23-2** Geoscience and society	**S04-4** Historical and macroseismic studies of earthquakes
	18:00-20:00	Business Meetings				
Fri Aug 4	08:30-10:00	**S13-5** Earthquake source mechanics	**J04-5** Geohazard early warning systems	**J09-4** Geodesy and seismology general contributions	**S08-1** Paleoseismology and paleotsunami studies: their potential and limitation	**S05-1** Preservation and usage of analog seismogram archives
	10:30-12:00	**S13-6** Earthquake source mechanics	**J04-6** Geohazard early warning systems	**J09-5** Geodesy and seismology general contributions	**S08-2** Paleoseismology and paleotsunami studies: their potential and limitation	**S05-2** Preservation and usage of analog seismogram archives
	12:00-13:30	Lunch / Business Meetings				
	13:30-15:00		**J04-7** Geohazard early warning systems	**J09-6** Geodesy and seismology general contributions		**S05-3** Preservation and usage of analog seismogram archives
	15:00-16:00	Poster Session				
	16:00-17:30	**Joint and IASPEI Closing**	**IAG Closing**			

Kobe International Conference Center				The Kobe Chamber of Commerce and Industry	
501	502	504+505	503	Shinsho Hall (3F)	Event Hall (2F)
J08-2 Imaging and interpreting lithospheric structures using seismic and geodetic approaches	**G01-5** Reference frames	**G03-2** Time variable gravity field	**S26-1** Exploring connections between heat flow and tectonics		
J08-3 Imaging and interpreting lithospheric structures using seismic and geodetic approaches	**G01-6** Reference frames	**G03-3** Time variable gravity field	**S26-2** Exploring connections between heat flow and tectonics		
Lunch / Business Meetings					
S21-1 Lithospheric structure	**G07-1** Global Geodetic Observing System (GGOS) and Earth monitoring services	**G03-4** Time variable gravity field	**S25** Development and application of geothermal databases		
Coffee Break					
Poster Session					
S21-2 Lithospheric structure	**G07-2** Global Geodetic Observing System (GGOS) and Earth monitoring services	**G03-5** Time variable gravity field	**S24-1** Methods and instruments of experimental geothermics - Application and recent evolution	**Poster III** (G03, G05, G07, J02, J04, J07, J08, J09)	**Poster IV** (S04, S05, S08, S13, S14, S17, S18, S21, S23, S24, S25, S26, S27)
Business Meetings					
S21-3 Lithospheric structure	**G07-3** Global Geodetic Observing System (GGOS) and Earth monitoring services	**G05-1** Multi-signal positioning: Theory and applications	**S24-2** Methods and instruments of experimental geothermics - Application and recent evolution		
S21-4 Lithospheric structure	**G07-4** Global Geodetic Observing System (GGOS) and Earth monitoring services	**G05-2** Multi-signal positioning: Theory and applications	**S27-1** Geothermal energy: Ground source heat pump, hydrothermal system, and hot dry rocks		
Lunch / Business Meetings					
S21-5 Lithospheric structure	**G07-5** Global Geodetic Observing System (GGOS) and Earth monitoring services	**G05-3** Multi-signal positioning: Theory and applications			
Poster Session					

Kobe International Conference Center 1F



Kobe International Conference Center 3F



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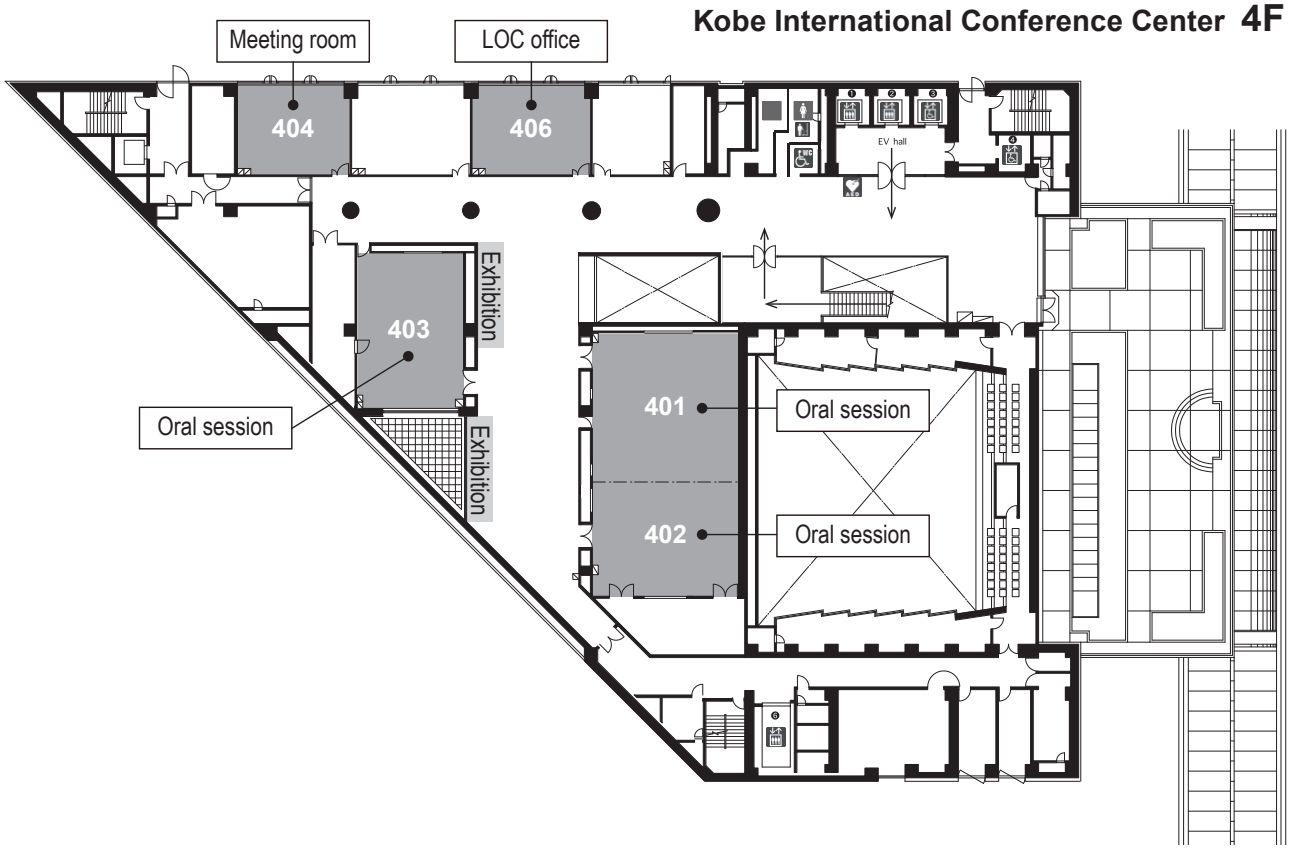
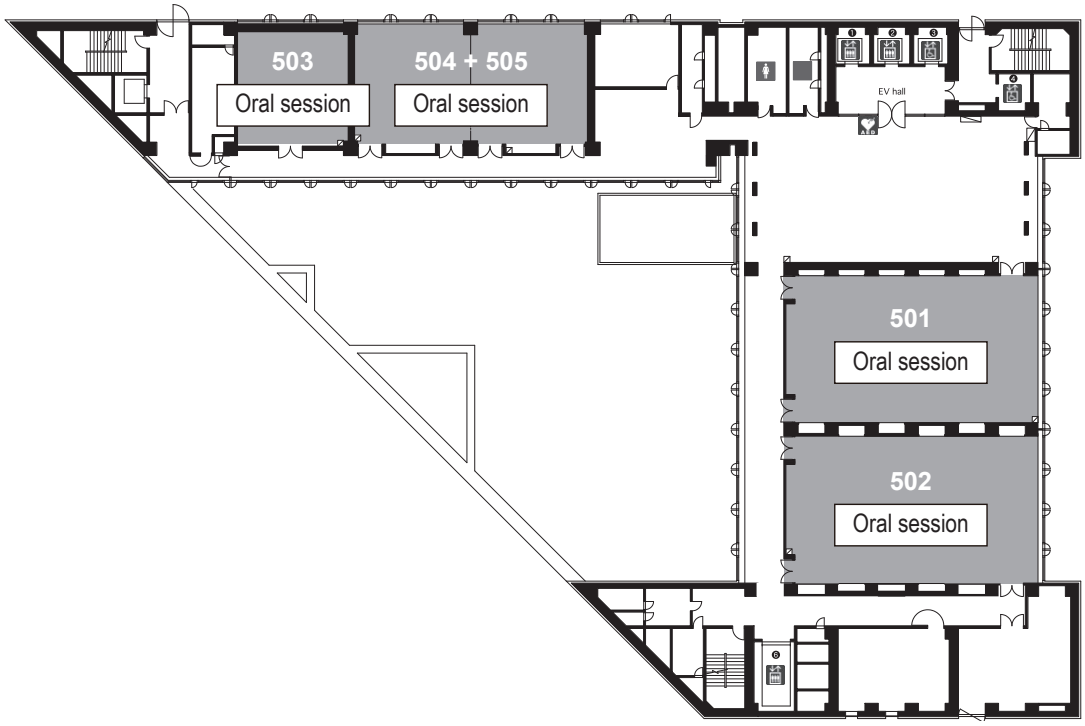
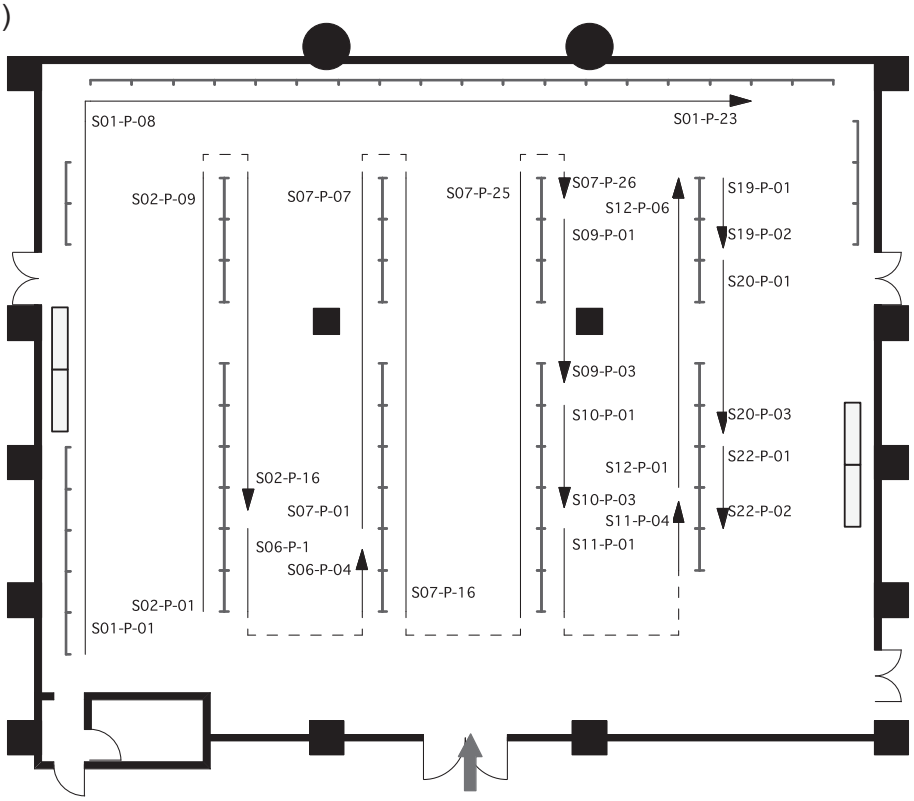


Kobe International Conference Center 5F

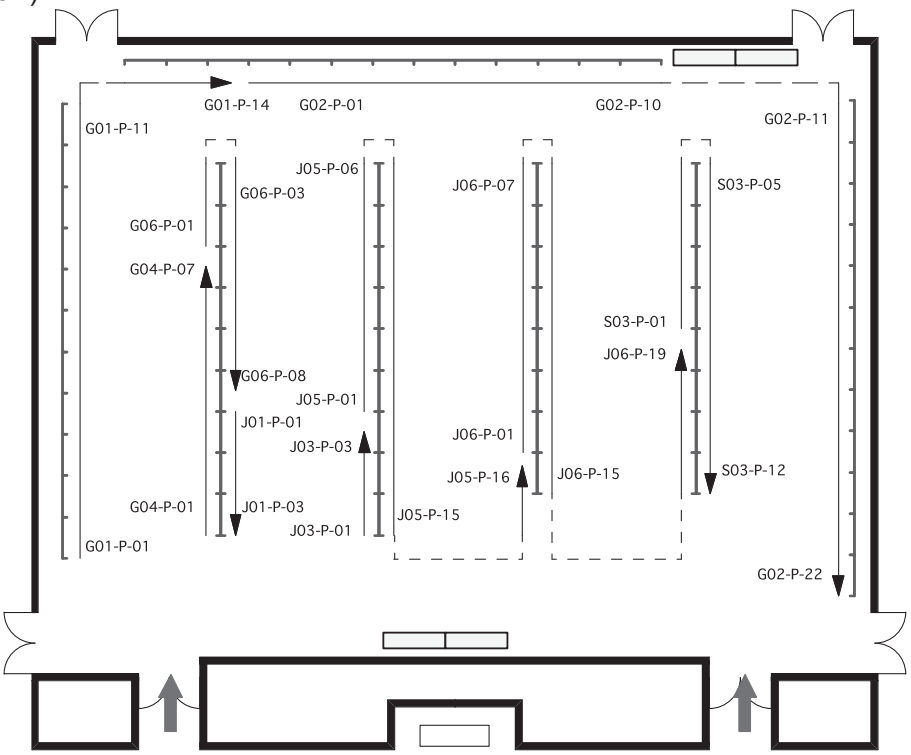


August 1-2

Event Hall (2F)

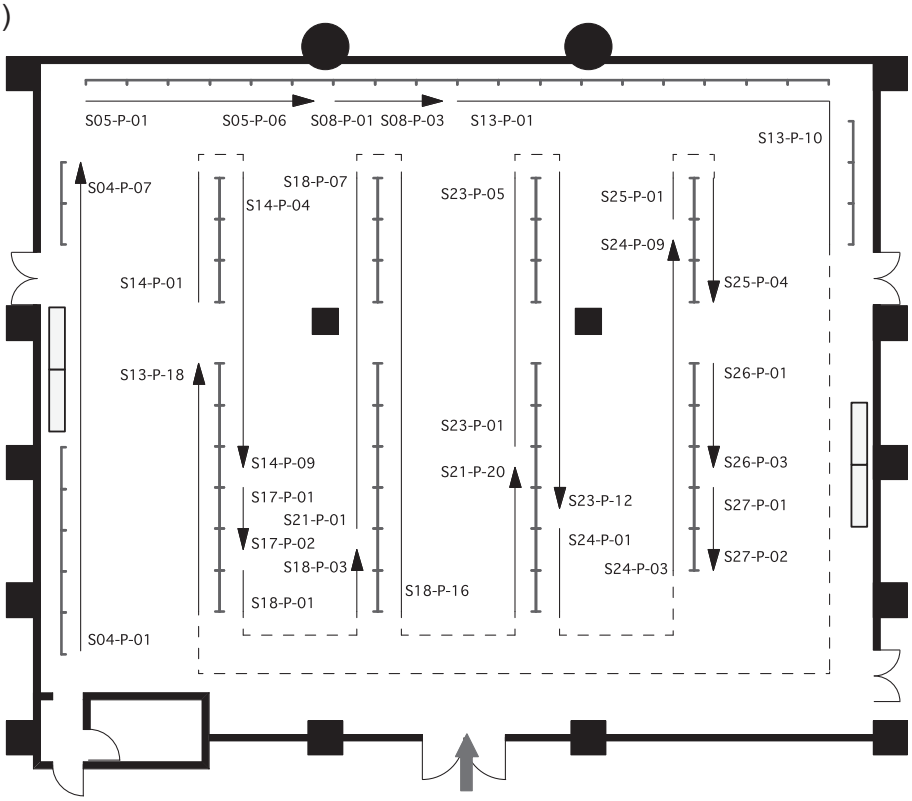


Shinsho Hall (3F)

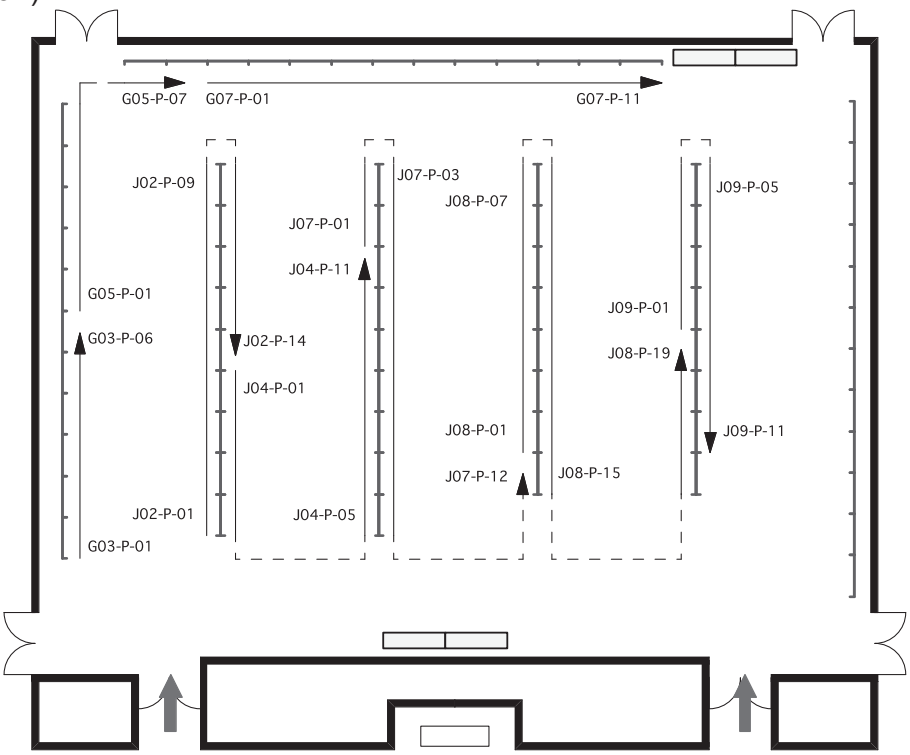


August 3-4

Event Hall (2F)



Shinsho Hall (3F)



Opening ceremony and plenaries

Date: Monday, July 31 13:30-18:00

Joint opening ceremony and plenary lectures

Place: Main Hall

13:30 Greetings

Message from the Prime Minister
Welcome message from Kobe City
Message from SCJ president: Dr. Onishi
SSJ president: Dr. Yamaoka
IUGG president: Dr. Sideris

14:00 Plenary lectures

14:00 Prof. Kosuke Heki (Department of Earth and Planetary Sciences, Hokkaido University)
"Geodesy in Japan : Legends and highlights"

14:40 Prof. Barbara Romanowicz (University of California, Berkeley, and Collège de France, Paris)
"Imaging the earth's deep interior using seismic waves in the age of high-performance computing"

15:20 Prof. Manabu Hashimoto (Disaster Prevention Research Institute, Kyoto University)
"Evolution of earthquake science with space geodesy"

16:00 Coffee break

Opening plenaries

16:30-18:00 IASPEI opening plenary
Place: Main Hall

16:30-18:00 IAG opening plenary
Place: International Conference Room

Geodesy in Japan : Legends and highlights

Kosuke Heki
Department of Earth and Planetary Sciences, Hokkaido University

In this talk, I briefly review early histories of geodesy and geodynamics in Japan, and introduce a few highlights during the last two centuries.

(1) Dawn of geodesy: Meridional arc length measurement in 1801

The samurai government of Japan closed the country in 1639 and only allowed contacts with the western world through Dutch traders using a tiny window at Nagasaki, Kyushu. Even in this period, the Dutch version of the French book *Astronomie* (Lalande, 1764) was imported to Japan as *Astronomia of Sterrekunde* (1773), and it drew attention of samurai scientists in the astronomical bureau of the government. In the middle of the 18th century, geodetic expeditions by the French academy of science revealed the difference between the arc lengths between Ecuador and Finland, and confirmed the Earth's ellipticity. In Japan, Tadataka Ino (1745-1818), a wealthy retired merchant in Kanto, studied modern geodesy to accurately map the Japanese Islands. He was also keen in measuring the meridional arc length in Japan, and determined it as 110.75 km by numbers of surveying campaigns early in 19th century in NE Japan. This is marginally different from the modern value 110.95 km, and the overall accuracy of the maps made by his surveys amazed Europeans who entered Japan 50 years later.

(2) Polar motion and the International Latitude Service: Z-term in 1900

Japan opened the country again in 1854, and the new government vigorously imported up-to-date science at that time from Europe and America. The first international geodetic observation campaign started in 1899 soon after Mizusawa, NE Japan, was selected as one of the latitude observatories along 39°08'. After analyzing the data in 1900, the ILS central bureau at Potsdam, Germany, suggested to reduce the weight of the Japanese data due to its abnormally large residuals derived using the equation relating the latitude change $\Delta\theta$ with the polar motion (X, Y), i.e. $\Delta\theta = X\cos\varphi + Y\sin\varphi$. The young director of the observatory, Hisashi Kimura (1870-1943), found that a new longitude-independent annually-changing term could largely reduce the residual (Kimura, 1902 *Astron. J.*). The new term (Z-term) was officially adopted by ILS, and this became one of the earliest world-class achievements by a Japanese scientist. The Z-term is also the first signature of the fluid core of the Earth, detected earlier than the seismological discovery of the shadow zone of the S wave in 1906.

(3) Geodetic campaigns to detect continental drift during 1920-1930s

Torahiko Terada (1878-1935), a professor of physics (also a member of the Earthquake Research Institute) in University of Tokyo, was a supporter of the continental drift hypothesis by Alfred Wegener. He hypothesized that the Japanese Islands came apart from the continent and have been drifting away (similar to the modern back-arc opening concept). To verify this idea, Japanese national committee of geodesy conducted the first campaign in 1928 to detect the drift of the Tobishima Island off the coast of the Japan Sea (Tobishima means "flying island", just like *Laputa* in *Gulliver's Travels*) using both astronomical positioning and terrestrial triangulation. Re-occupations in 1934 and in 1954 did not yield consistent coordinate changes for different intervals and techniques. After all, the attempt was not successful (opening of the Japan Sea is not currently active anyway), but the practice of such an ambitious project 90 years ago still impresses us.

(4) Last 70 years

Advance of geodesy after the World-War II in Japan and the world is so rapid, as recognized in various papers presented in this meeting, and I will just mention a few milestones. Yoshihide Kozai (1928-) formulated how the orbital elements of satellites change in time (e.g. 1959 *Astron. J.*), which paved way to the accurate measurement of J_2 and the discovery of J_3 of the Earth by periodic changes of the perigee height of the Vanguard satellite. In 1987, a long history of earth rotation observations based on optical telescopes ended, and Int. Polar Motion Service (central bureau at Mizusawa, Japan) was replaced by IERS. Space geodesy in Japan started in 1980s at Simosato (SLR) and Kashima (VLBI), with the Japanese participation in NASA/Crustal Dynamics Project. Deployment of the dense GNSS array started in the middle of 1990s, and resulted in many new discoveries such as slow fault movements. Newly launched Japanese satellites for geodesy include Ajisai (SLR), ALOS-1&2 (SAR), and QZSS (GNSS). The current frontier seems to lie in the ocean floor positioning with the GNSS-Acoustic technique.

Imaging the earth's deep interior using seismic waves in the age of high-performance computing

Barbara Romanowicz
University of California, Berkeley, and Collège de France, Paris

Global seismic tomography was first developed in the late 1970's and early 1980's. P wave travel time tomography based on data from ISC bulletins revealed for the first time the unique long wavelength structure in the lowermost mantle (Dziewonski et al., 1977; Clayton and Comer, 1983; Dziewonski, 1984). This structure, correlated with the earth's geoid, consists of two large low velocity regions, located antipodally in equatorial regions under the Pacific Ocean and under Africa, andnow commonly referred to as "large low shear velocity provinces" (LLSVPs). They are surrounded by a ring of fast velocities, which is generally interpreted as the graveyard of tectonic slabs. Concurrently, the first images of upper mantle structure obtained using surface wave data confirmed the main features expected from plate tectonics theory (Woodhouse and Dziewonski, 1984), with lower than average (hotter) shear velocities along the mid-ocean ridge system, increasing with age of the plate, and thick, faster than average (colder) continental roots, as well as evidence for large scale convection below the plates from the first images azimuthal anisotropy (Tanimoto and Anderson, 1984).

Since then, various datasets utilizing teleseismic body wave travel times, normal mode splitting data, surface wave dispersion and/or long period waveforms have led to sharper images, particularly in subduction zones, where different behaviors of slabs have been shown, some ponding in the transition zone, and some penetrating deeper, and ponding around 1000 km depth, as was recently clearly shown (Fukao and Obayashi, 2013). In the lowermost mantle, anticorrelation of tomographically inferred shear wave speed and bulk sound velocity suggests that the LLSVPs are not only hotter but also chemically distinct from the surrounding mantle, which is confirmed by observations of body waveform distorsions indicating sharpness of their borders.

Detecting the narrow plumes expected to arise at boundary layers from simple thermally driven mantle convection, and suggested to be the origin of mid-plate, hotspot volcanism (Tuzo-Wilson, 1963; Morgan, 1971) has been more challenging. While their presence in body wave travel time images has been suggested (Zhao, 2004; Montelli et al., 2005), the existence of these plumes has remained controversial, because of the poor illumination afforded for travel time tomography by the available distribution of earthquake sources and receivers, generally combined with modelling of first arrivals based on ray theory, which "hides" low velocity structures, due to wavefront healing.

With the advent of numerical methods that enable accurate seismic wavefield computations in arbitrary three-dimensional structures at the global scale, it is now possible to apply the tools of waveform tomography to better detect the presence of slow velocity anomalies of limited extent in the earth's mantle. Such methods have first been applied at the continental scale (e.g. Zhu et al., 2012, Rickers et al., 2013), and more recently at the global scale (e.g Lekic and Romanowicz, 2011; French et al., 2013; French and Romanowicz, 2014,2015 ; Bozdag et al., 2017).

Global mantle imaging now reveals better focused, finer scale low shear velocity structure both in the upper and in the lower mantle. In the deep mantle, broad columns of lower than average velocity extend from the core-mantle boundary to ~1000 km depth in the vicinity of those active hotspots that lie above the LLSVPs, while no such structures are present under other hotspots. These columns of diameter larger than 500 km, are wider than expected for classical thermally driven plumes, and likely involve thermo-chemical processes. Their quasi-vertical orientation indicates absence of significant mantle wind in the lower mantle, implying very sluggish motions away from these localized upwellings. In contrast, many of these columns are deflected horizontally when they reach 1000 km depth, where they become thinner and are not as well resolved at present. There is evidence, on the basis of observations beneath Iceland, Hawaii and Samoa, that the roots of these broad plumes contain large (800 - 900 km wide), thin (less than 30 km) ultra low velocity zones (ULVZs), with reductions in shear velocity in excess of 25%. In particular, under Iceland, the mega-ULVZ's shape is axisymmetric, implying a close dynamic relationship with the plume, and likely the presence of partial melt.

In the upper mantle, we observe quasi-periodic, low velocity structures with a wavelength of ~2000 km, elongated horizontally for thousands of kilometers in the direction of absolute plate motion (APM), most prominent in the depth range 200-300 km, but extending from the base of the lithosphere into the transition zone, suggesting the presence of secondary scale convection similar to "Richter rolls" (Richter and Parsons, 1975), possibly interacting with fingering due to injection of low viscosity fluid from mantle plumes.
With further improvements in our ability to more completely exploit information in seismograms, the new type of tomography illustrated here opens the way to exciting new discoveries and better understanding of mantle dynamics.

Evolution of earthquake science with space geodesy

Manabu Hashimoto
Disaster Prevention Research Institute, Kyoto University

There is no doubt about that the earthquake science has been evolving along with geodesy. Reid (1910) proposed the *Elastic Rebound Theory* based on the data of triangulation before and after the 1906 San Francisco earthquake. In Japan, the Land Survey Department of Army (the predecessor of the Geospatial Information Authority, Japan; GSI) repeated triangulation and leveling surveys and left invaluable information on the mechanics of faulting such as the 1923 Kanto and 1946 Nankai earthquakes etc. However, these techniques require much labor and long time to obtain significant displacements or strains, because of short line of sight. Consequently, it took more than 80 years to reveal horizontal crustal deformation over the entire Japanese islands.

Development of space geodesy could overcome these drawbacks to conventional geodetic techniques. Very Long Baseline Interferometry (VLBI) and Satellite Laser Ranging (SLR) directly measured distance between continents and detected motion of plates in 1980's, which validated plate tectonics. Thanks to the successes in several experiments of Global Positioning System (GPS), GSI started to deploy a nation-wide continuous GPS network in Japan (GEONET). 4 days after the start of GEONET in 1994, a M8.2 earthquake hit eastern Hokkaido. The retrieved deformation was amazing, because the entire Hokkaido shifted eastward up to 44 cm. Later in the same year, another M7.6 earthquake occurred off the Sanriku coast, northeastern Japan, and was followed by a slowly decaying movement toward the Pacific ocean; postseismic transients. In 1996, some GEONET sites in southern Kanto shifted slowly oceanward with no large earthquakes accompanied. This discovery of slow-slip ignited a worldwide hunt for slow-slip with GPS. Now, we know a wide variety of characteristics of slow-slip. Daily coordinates are accurate enough to give interseismic deformation within a decade. Spatio-temporal variations in geodetic coupling have been estimated using time series of coordinates in most subduction zones. Modeling with crustal blocks and their bounding faults has been applied to GPS velocity field in continents and island arcs to estimate slip rate of faults and motion of blocks. These are now the mainstream of seismo-geodesy and their results are being exploited for the hazard evaluation.

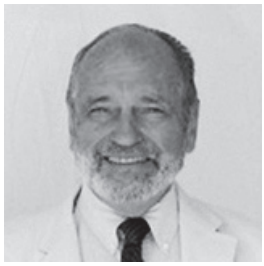
In parallel to the research of long-term deformation, movements with higher frequency than 1Hz have been studied utilizing a kinematic technique. A couple of groups showed that kinematic solutions of GPS during the 2011 Tohoku earthquake and found the usefulness to estimate size of rupture of earthquake larger than M8. This technique is expected to make significant improvements to tsunami warning system. Kinematic technique gives us a precise position on the sea surface, which is vital for the GPS-acoustic positioning (GPS/A) under the sea. Recent deployment of GPS/A stations along the Pacific coast of Japan revealed spatial distribution of interseismic coupling.

Spatial resolution depends on the density of distribution of control points that are repeatedly occupied, which prevents us from knowing detailed structure of earthquake faults. SAR Interferometry (InSAR) solved this problem. The first successful example is the 1992 Landers earthquake, whose coseismic displacement Massonnet et al. (1993) derived from ERS-1 images. Since then, observations with SAR sensors have been made and revealed complicated nature of earthquake ruptures. Recent deployment of satellites with a short revisit time and well-controlled orbits enables us to study temporal variations in surface deformation in plate boundary zones and intraplate deforming zones with as high spatial resolution as a couple of meters.

Kuhn (1962) called facts against the paradigm of normal science "anomaly". He pointed out that accumulation of "anomaly" will force a paradigm shift; scientific revolution. The emergence of plate tectonics was certainly a scientific revolution and changed a view of earthquake. The developments mentioned above definitely deepened our understanding of earthquake generation process and earthquake cycle, but satellite geodesy did not change the view of earthquake in the framework of plate tectonics but verify it. However, we can find "anomalies" that are not easy to fit the leading models. For example, the 2010 Haiti earthquake raised fan delta and lowered its adjacent mountains. Sequence of earthquakes in New Zealand from Darfield to Kaikoura is astonishing. The Gorkha, Nepal, earthquake ruptured only a part of fully coupled zone of the Main Himalayan Thrust. On the other hand, the Tohoku earthquake was out of scope of long-term forecast in Japan. In late 2016, we observed that a fault ruptured with only 6 years interval in eastern Japan. At least, a simple recurrence model such as "characteristic earthquake model" may not be applied to these examples. These events may force us to reconsider the present model in mainstream. Is minor revision of model enough? Or do we need to replace it with other idea? We should seek answer to these questions. If these observations are real anomalies, we are now experiencing the revolution of earthquake science. It is exciting, isn't it?

IASPEI Medal

In 2013 IASPEI began to award a Medal for "sustaining IASPEI goals and activities and for scientific merits in the field of seismology and physics of the Earth's interior". The IASPEI Bureau is proud to announce that it has unanimously selected as recipient of the 2017 IASPEI Medal: Eric Robert Engdahl for his outstanding career contributions to seismology and more than 40 yearlong engagement with IASPEI.
The IASPEI Medal 2017 will be presented to Bob Engdahl during the IAG-IASPEI 2017 on Monday 31 July 2017.



Eric Robert Engdahl
International Cooperation for Better Understanding of the Earth

IAG Young Authors Awards

The IAG Young Author Award is to draw attention to important contributions by young scientists in the Journal of Geodesy and to foster excellence in scientific writing. The applicant must be 35 years of age or younger when submitting the paper for the competition. The paper must present his or her own research, and must have been published in the two annual volumes of the Journal of Geodesy preceding the IAG Scientific Assembly.

The winner of the Award 2015 is Xingxing Li for the article "Li, X., et al.: Accuracy and reliability of multi-GNSS real-time precise positioning: GPS, GLONASS, BeiDou, and Galileo" published in the Journal of Geodesy (2015), 89: 607-635.

The winner of the Award 2016 is Olga Didova for the article "Didova, O., et al.: An approach for estimating time-variable rates from geodetic time series" published in the Journal of Geodesy (2016) 90: 1207–1221.

Joint Symposia

J01. Monitoring of the cryosphere

Session: **J01-1**
Session title: Monitoring of the cryosphere I
Type: Oral
Date: Wednesday, August 2, 2017
Time: 08:30 - 10:00
Room: Room 403
Chairs: Paul Winberry (Central Washington University)
Masaki Kanao (National Institute of Polar Research)

Time	Title	Program No.
08:30	**Seismic Tremors and their Relation to Cryosphere Dynamics in April 2015 around the Lutzow-Holm Bay, East Antarctica** Masaki Kanao	J01-1-01
08:45	**Repetitive cryoseismicity at the Fimbulisen Ice Shelf, East Antarctica** Myrto Pirli, Sebastian Hainzl, Andreas Koehler, Johannes Schweitzer	J01-1-02
09:00	**Seismology reveals ice sheet basal conditions** Genti Toyokuni, Hiroshi Takenaka, Ryota Takagi, Masaki Kanao, Seiji Tsuboi, Yoko Tono, Dean Childs, Dapeng Zhao	J01-1-03
09:15	**Complex Behavior of Glacial Earthquakes Reveal Subglacial Conditions** J. Paul Winberry, Audrey Huerta, Richard Aster, Howard Conway, Michelle Koutnik, Sridhar Anandakrishnan, Andrew Nyblade, Douglas Wiens	J01-1-04
09:30	**Advances in Design and Deployment of Seismic Arrays for Polar Regions** Audrey Huerta, J. Paul Winberry, Bruce Beaudoin, Paul Carpenter, Doug Wiens, Andrew Nyblade, Rick Aster, Sridhar Anandakrishnan, Jason Hebert, Philip Chung, Kent Anderson, Susan Bilek, Terry Wilson	J01-1-05
09:45	**Absolute Gravity Measurements in Antarctica from 2009 to 2015** Larry Hothem, Y. Rogister, A. Memin, J. OBrien, M. Amos, P. Gentle, T. Wilson, A. Capra	J01-1-06

Session: **J01-2**
Session title: Monitoring of the cryosphere II
Type: Oral
Date: Wednesday, August 2, 2017
Time: 10:30 - 12:00
Room: Room 403
Chairs: Erik Ivins (Jet Propulsion Lab, California Institute of Technology)
Masato Furuya (Hokkaido University)

Time	Title	Program No.
10:30	**Inter-annual modulation of seasonal glacial velocity changes in the Eastern Karakorum detected by ALOS-1/2 data** Muhammad Usman, Masato Furuya	J01-2-01
10:45	**The influence of the Antarctic lithosphere on glacial isostatic adjustment modelling** Jorg Ebbing, Folker Pappa, Valentina Barletta, Rene Forsberg, Fausto Ferraccioli, Bas Blank, Wouter V. D. Wal, Michael Kern	J01-2-02
11:00	**Geodetic studies of GIA and ice sheet changes by JARE** Yoichi Fukuda, Yuichi Aoyama, Koichiro Doi, Hideaki Hayakawa, Jun'ichi Okuno, Jun Nishijima, Takahito Kazama, Keiko Yamamoto, Toshihiro Higashi, Kazuo Shibuya	J01-2-03 invited
11:30	**Using geodetic data to constrain contemporary GIA signals in Scandinavia and North America** K. Simon, R. E. M. Riva	J01-2-04
11:45	**5000 Year Advance and Retreat Models for West Antarctica and a Geodetically Based Solution for Mantle Viscosity and More Recent and Accelerated Cryospheric Loss** Erik Ivins, Helene Seroussi, Lambert Caron, Surendra Adhikari, Eric Larour, Douglas Wiens, Andrew Lloyd, Mirko Scheinert	J01-2-05

Session: **J01-3**
Session title: Monitoring of the cryosphere III
Type: Oral
Date: Wednesday, August 2, 2017
Time: 13:30 - 15:00
Room: Room 403
Chairs: Eric Larour (Jet Propulsion Laboratory/California Institute of Technology/NASA)
Takahiro Abe (Hokkaido University)

Time	Title	Program No.
13:30	**High resolution gradient fingerprint mapping and its impact on urban planning** Eric Larour, Erik Ivins, Surendra Adhikari	J01-3-01
13:45	**Sea level rise from the Greenland and Antarctica ice sheet melt from combined CryoSat and GRACE inversion** Rene Forsberg, Sabastian Simonsen, Valentina Barletta	J01-3-02

14:00	**A 25-year Arctic Sea-level Record (1991-2016) and first look at Arctic Sea Level Budget Closure** Ole Andersen, Stine K. Rose, Marcello Passaro, Jerome Benveniste	J01-3-03
14:15	**The regional high-precision ice flow velocity mapping using DInSAR and offset tracking methods** Kaoru Shiramizu, Koichiro Doi, Yuichi Aoyama	J01-3-04
14:30	**Glacier surge mechanism of Steele Glacier in Yukon, Canada: the 2011-2016 surging episode** Takahiro Abe, Masato Furuya, Daiki Sakakibara	J01-3-05
14:45	**Present-Day Ice Reservoir Mass Balance Estimates** C. K. Shum, Jian Sun, Kun Shang, Junyi Guo, Yuchan Yi, Vibhor Agarwal, Chunli Dai, Santiago de La Pena, Ian Howat, Qiang Shen, Guoqing Zhang, Alexander Braun, Graham Cogley, Xiaoli Ding, Linghong Ke, Chungyen Kuo, Hyongki Lee	J01-3-06

Session: **J01-P**
Type: Poster
Date: Tuesday, August 1/ Wednesday, August 2, 2017
Time: 15:30 - 16:30
Room: Shinsho Hall

Title	Program No.
Classification of ice tremor recorded at Syowa Station in Antarctica Yuya Tanaka, Yoshihiro Hiramatsu, Yoshiaki Ishihara, Masaki Kanao	J01-P-01
GROUND DEFORMATION MAPPING BY ALOS1/2 INSAR: CASE STUDIES AT HERSCHEL ISLAND, CANADA, AND BATAGAIKA CRATER, SIBERIA Kazuki Yanagiya, Masato Furuya	J01-P-02
Temperature dependent seismic-frequency attenuation in ice and permafrost Seth Saltiel, Brian Bonner, Shan Dou, Jonathan Ajo-Franklin	J01-P-03

J02. Recent large and destructive earthquakes

Session: **J02-1**
Session title: Recent large earthquakes I
Type: Oral
Date: Wednesday, August 2, 2017
Time: 08:30 - 10:00
Room: Intl Conf Room (301)
Chairs: Manabu Hashimoto (Kyoto University)
Thorne Lay (University of California Santa Cruz)

Time	Title	Program No.
08:30	**Complex seismicity and hypocenter distribution of the 2016 Kumamoto earthquakes, Kyushu, Japan, and their relation to the stress field and crustal structure** Hiroshi Shimizu, Group for urgent joint seismic observation of the 2016 Kumamoto earthquakes	J02-1-01 invited
09:00	**Detailed crustal deformation and fault ruptures of the 2016 Kumamoto Earthquake revealed by ALOS-2 SAR data** Tomokazu Kobayashi, Hiroshi Yarai, Yu Morishita, Satoshi Kawamoto, Satoshi Fujiwara, Takayuki Nakano	J02-1-02
09:15	**Ground motion simulation during the 2016 Kumamoto earthquake mainshock in near-fault area and Aso caldera** Kimiyuki Asano, Tomotaka Iwata	J02-1-03
09:30	**Simultaneous estimation of the dip angles and slip distribution on the two active faults of the 2016 Kumamoto earthquake through a weak non-linear inversion of InSAR data based on ABIC** Yukitoshi Fukahata, Manabu Hashimoto	J02-1-04
09:45	**Postseismic deformation of 2016 Kumamoto earthquake by the dense GNSS continuous observation** Shigeru Nakao, Takeshi Matsushima, Takao Tabei, Makoto Okubo, Tadashi Yamashina, Takahiro Ohkura, Takuya Nishimura, Takuo Shibutani, Masahiro Teraishi, Takeo Ito, Takeshi Sagiya, Kenjiro Matsuhiro, Teruyuki Kato, Jun'ichi Fukuda, Atsushi Watanabe, Yusaku Ohta, Satoshi Miura, Tomotsugu Demachi, Hiroaki Takahashi, Mako Ohzono, Teruhiro Yamaguchi, Kazumi Okada	J02-1-05

Session: **J02-2**
Session title: Recent large earthquakes II
Type: Oral
Date: Wednesday, August 2, 2017
Time: 10:30 - 12:00
Room: Intl Conf Room (301)
Chairs: Thorne Lay (University of California Santa Cruz)
Manabu Hashimoto (Kyoto University)

Time	Title	Program No.
10:30	**Comparison of macroseismic studies of two similar megathrust earthquakes in Ecuador** Juan-Carlos Singaucho, Celine Beauval	J02-2-01
10:45	**The 2016 Mw 7.8 Pedernales, Ecuador earthquake: aftershock sequence analysis using a minimum 1D velocity model** Sergio Leon-Rios, Ana Luiza Martins, Amaya Fuenzalida-Velasco, Lidong Bie, Tom Garth, Pablo Gonzalez, James Holt, Andreas Rietbrock, Benjamin Edwards, Marc Regnier, Diego Mercerat, Michel Pernoud, Matthieu Perrault, Javier Santo, Alexandra Alvarado, Susan Beck, Anne Meltzer	J02-2-02
11:00	**The 2015 Nepal earthquake: Evidence for a horizontal underthrusting of India beneath the Himalaya** Qi Wang, Xuejun Qiao	J02-2-03
11:15	**Is the 2013 Lushan earthquake (Mw=6.6) an independent event or a strong aftershock of the 2008 Wenchuan, China mainshock (Mw=7.9)?** Shoubiao Zhu	J02-2-04
11:30	**Coseismic deformation associated with the 2001 Ms 8.1 Kunlun earthquake from GPS and its tectonic implications** Kaihua Ding, Qi Wang, Jeffrey Freymueller, Ping He, Shuiping Li, Yunguo Chen, Yangmao Wen, Caijun Xu, Shaomin Yang, Xuejun Qiao	J02-2-05

Session: **J02-3**
Session title: Recent large earthquakes III
Type: Oral
Date: Wednesday, August 2, 2017
Time: 13:30 - 15:00
Room: Intl Conf Room (301)
Chairs: Thorne Lay (University of California Santa Cruz)
Manabu Hashimoto (Kyoto University)

Time	Title	Program No.
13:30	**Shattering a plate boundary: Complex multi-fault rupture during the 2016 Mw 7.8 Kaikoura earthquake, New Zealand** Ian Hamling, Sigrun Hreinsdottir, Stephen Bannister, Eric Fielding, Bill Fry, Caroline Holden, Ana Kaiser, Nicola Litchfield, Christof Mueller, Laura Wallace, Tim Wright	J02-3-01 invited
14:00	**Surface Ruptures that could have been caused by aftershocks of the 2016 Kaikoura earthquake** Sidao Ni	J02-3-02
14:15	**Crustal deformation of the 2016 Kaikoura earthquake, New Zealand, revealed by ALOS-2** Yu Morishita, Tomokazu Kobayashi, Satoshi Fujiwara, Hiroshi Yarai	J02-3-03
14:30	**Complex rupture of the 2016 Kaikoura earthquake, New Zealand** Simone Cesca, Joachim Saul, Yong Zang, Rongjiang Wang, Sebastian Hainzl, Vasiliki Mouslopoulou, Onno Oncken, Torsten Dahm	J02-3-04
14:45	**Seafloor displacement of the 13 November 2016 New Zealand earthquake estimated from tsunami waveforms and GPS data** Aditya Gusman, Kenji Satake, Endra Gunawan	J02-3-05

Session: **J02-4**
Session title: Recent large earthquakes IV
Type: Oral
Date: Wednesday, August 2, 2017
Time: 16:30 - 18:00
Room: Intl Conf Room (301)
Chairs: Shin-Chan Han (University of Newcastle)
Thorne Lay (University of California Santa Cruz)

Time	Title	Program No.
16:30	**Postseismic deformation following the 2016 Mw 7.8 Kaikoura earthquake, New Zealand** Sigrun Hreinsdottir, Ian Hamling, Susan Ellis, Laura Wallace, Paul Denys, Neville Palmer, Lara Bland, Phaedra Upton, Charles Williams, Elisabetta D'Anastasio	J02-4-01
16:45	**Intraslab rupture triggering megathrust rupture co-seismically in the December 17, 2016 Solomon Islands Mw 7.9 earthquake** Thorne Lay, Lingling Ye, Charles Ammon, Hiroo Kanamori	J02-4-02
17:00	**Anatomy of the source zones of large earthquakes in Japan** Dapeng Zhao, Zhouchuan Huang, Xin Liu	J02-4-03
17:15	**From Sumatra 2004 to Today, through Tohoku-Oki 2011: what we learn about Tsunami detection by ionospheric sounding** Giovanni Occhipinti, Lucie Rolland, Julian Eisenbeis, Shingo Watada, Pierdavide Coisson, Jonathan Makela, Philippe Lognonné, Hélène Hebert	J02-4-04
17:30	**Linking Oceanic Tsunamis and Geodetic Gravity Changes of Large Earthquakes** Yuning Fu, Y. Tony Song, Richard Gross	J02-4-05

17:45	**Postseismic gravity changes caused by viscoelastic relaxation after recent great earthquakes since 2004** Shin-Chan Han, Jeanne Sauber, Fred Pollitz	J02-4-06

Session: **J02-P**
Type: Poster
Date: Thursday, August 3/ Friday, August 4, 2017
Time: 15:30 - 16:30 / 15:00 - 16:00
Room: Shinsho Hall

Title	Program No.
Fault source model for the 2016 Kumamoto earthquake sequence based on ALOS-2/PALSAR-2 pixel-offset data: evidence for dynamic slip partitioning Yuji Himematsu, Masato Furuya	J02-P-01
Crustal deformation of the 2016 Kumamoto earthquake sequence (1) - Foreshocks - Tomokazu Kobayashi, Satoshi Kawamoto, Yohei Hiyama	J02-P-02
Crustal deformation of the 2016 Kumamoto earthquake sequence (2) - Mainshock - Hiroshi Yarai, Tomokazu Kobayashi, Yu Morishita, Satoshi Fujiwara	J02-P-03
Crustal deformation of the 2016 Kumamoto earthquake sequence (3) - Small displacement linear surface ruptures detected by ALOS-2 SAR - Satoshi Fujiwara, Hiroshi Yarai, Tomokazu Kobayashi, Yu Morishita, Takayuki Nakano, Basara Miyahara, Hiroyuki Nakai, Yuji Miura, Haruka Ueshiba, Yasuaki Kakiage, Hiroshi Une	J02-P-04
Relationship between subsurface structure and large-scale fissures in the northwestern region in Aso valley caused by the 2016 Kumamoto earthquake Issei Doi, Toshitaka Kamai, Satoshi Goto, Ryokei Azuma, Takahiro Ohkura, Hidehiko Murao, Kenji Mima	J02-P-05
New Guidelines for the Seismic Forecast Information after Big Earthquakes in Japan Noriko Kamaya, Kiyoshi Takeda, Tetsuo Hashimoto	J02-P-06
Characterized Source Model of 2016 Meinong Earthquake, Taiwan, Inferred by the Empirical Green's Function Method Yin-Tung Yen, Yi-Ying Wen, Ming-Che Hsieh	J02-P-07
Slip Distribution of the 2015 Lefkada Earthquake and its Implications for Fault Segmentation Lidong Bie, Pablo Gonzalez, Andreas Rietbrock	J02-P-08
Characterized source model for estimating strong ground motions during 2016 Tottori-ken Chubu Earthquake Susumu Kurahashi, Kojiro Irikura, Ken Miyakoshi	J02-P-09
Changes of S-wave velocity and polarization anisotropy associated with the 2011 Tohoku Earthquake detected by the observation of the seismic ACROSS signals Takahiro Kunitomo, Yasuhiro Asai, Hiroshi Ishii	J02-P-10
A coupled model of stress-driven frictional afterslip and viscoelastic relaxation following the 2011 Tohoku-oki earthquake Junichi Fukuda, Kaj Johnson	J02-P-11
Tidal triggering of earthquakes after the 2011 Tohoku earthquake Sachiko Tanaka	J02-P-12
The ISC Event Bibliography: an update Domenico Di Giacomo, Elizabeth Ball, Dmitry Storchak	J02-P-13
The seismotectonic implications of source models of M-7 class earthquakes before ad after the 2011 Tohoku-Oki Earthquake using offshore tsunami records Tatsuya Kubota, Ryota Hino, Yusaku Ohta, Syuichi Suzuki	J02-P-14

J03. Deformation of the lithosphere: Integrating seismology and geodesy through modelling

Session: **J03-1**
Session title: Deformation of the lithosphere: Integrating seismology and geodesy through modelling I
Type: Oral
Date: Monday, July 31, 2017
Time: 08:30 - 10:00
Room: Room 401
Chairs: Rob Govers (Utrecht University)
Kevin Furlong (Penn State University)

Time	Title	Program No.
08:30	**Pre-, Co-, and Post-seismic deformation of the 2016 Oct 21th M 6.6 Central Tottori earthquake** Takuya Nishimura, Manabu Hashimoto, Yoshinobu Hoso, Hiromu Sakaue, Yuji Ito	J03-1-01 invited

09:00	**Postseismic deformation following the 1995 Kobe earthquake detected by space geodesy** Manabu Hashimoto, Takuya Nishimura, Taku Ozawa, Hiroshi Munekane, Mikio Tobita	J03-1-02
09:15	**Slow Slip Events in Cascadia: Observation and Hazard Analysis Derived from Sentinel-1 InSAR** Howard Zebker, Yujie Zheng	J03-1-03
09:30	**Hidden Earthquake Potential in Plate Boundary Transition Zones** Kevin Furlong, Matthew Herman	J03-1-04
09:45	**Interseismic Strain Partitioning in Nankai Subduction Zone, Southwest Japan: Block Movement and Internal Deformation of the Forearc Sliver** Takao Tabei, Masahiko Shiomi, Takeo Ito, Makoto Okubo	J03-1-05

Session: **J03-2**
Session title: Deformation of the lithosphere: Integrating seismology and geodesy through modelling II
Type: Oral
Date: Monday, July 31, 2017
Time: 10:30 - 12:00
Room: Room 401
Chairs: Kevin Furlong (Penn State University)
Rob Govers (Utrecht University)

Time	Title	Program No.
10:30	**Postseismic Deformation Following the 2002 Mw7.9 Denali Fault Earthquake** Jeffrey Freymueller, Hugh Harper, Yan Hu	J03-2-01 invited
11:00	**Estimation of spatiotemporal distribution of interplate slip after the 2003 Tokachi-oki earthquake incorporating viscoelastic relaxation** Yuji Itoh, Takuya Nishimura	J03-2-02
11:15	**Reconciling short and long term observations of megathrust cycles at subduction zones** Rob Govers, Kevin Furlong	J03-2-03
11:30	**Heterogeneous interseismic coupling along the Peruvian subduction zone and rigid motion of the Peruvian Sliver** Juan Carlos Villegas-Lanza, Mohamed Chlieh, Olivier Cavalie, Hernando Tavera, Patrice Baby, Jose Chire, Jean-Mathieu Nocquet	J03-2-04
11:45	**Crustal deformation and surface kinematics after the 2010 earthquakes in Latin America** Laura Sanchez, Hermann Drewes	J03-2-05

Session: **J03-3**
Session title: Deformation of the lithosphere: Integrating seismology and geodesy through modelling III
Type: Oral
Date: Tuesday, August 1, 2017
Time: 08:30 - 10:00
Room: Room 401
Chairs: Rob Govers (Utrecht University)
Kevin Furlong (Penn State University)

Time	Title	Program No.
08:30	**Modeling lithospheric tectonics with space geodesy: the problem of timescales** Mian Liu	J03-3-01
08:45	**Anisotropic horizontal thermal contraction of young oceanic lithosphere inferred from stress release by oceanic intraplate earthquakes** Ryohei Sasajima, Takeo Ito	J03-3-02
09:00	**GPS observation of Biot's slow wave in the Earth's crust triggered by Hurricane Sandy's storm surge** Geoffrey Blewitt, Jinhai Zhang, William E. Holt, Zhenxing Yao	J03-3-03
09:15	**Performance of 3-D Surface Displacement Measurement from Sub-pixel Correlation of Optical Imagery and InSAR: a Multi-Sensor Approach** Dewan Mohammad Enamul Haque, Yasser Magsoudi Mehrani, ASM Maksud Kamal	J03-3-04
09:30	**Lithosphere dynamics and earthquake simulation: implication for seismic hazard analysis** Alik Ismail-Zadeh, Alexander Soloviev, Vladimir Sokolov	J03-3-05

Session: **J03-P**
Type: Poster
Date: Tuesday, August 1/ Wednesday, August 2, 2017
Time: 15:30 - 16:30
Room: Shinsho Hall

	Title	Program No.
	Intraplate Seismicity in Fennoscandian Shield Annakaisa Korja, Marja Uski, Timo Tiira	J03-P-01
	Analysis of Detailed Crustal Strains due to the Dense GNSS Array in the Tokai Region, Central Japan Teruyuki Kato, Hiromu Sakaue, Takuya Nishimura, Ryoya Ikuta, Yasushi Harada	J03-P-02
	The topography of the lithosphere-asthenosphere boundary beneath the Korean Peninsula from S receiver functions Sang-Hyun Lee, Junkee Rhie, Tae-Seob Kang, Seongryong Kim, Hyun Jae Yoo, Won Sang Lee, Yongcheol Park	J03-P-03

J04. Geohazard early warning systems

Session: **J04-1**
Session title: Geohazard early warning systems I
Type: Oral
Date: Thursday, August 3, 2017
Time: 08:30 - 10:00
Room: Intl Conf Room (301)
Chairs: Yih-Min Wu (National Taiwan University)
Mitsuyuki Hoshiba (Meteorological Research Institute, JMA)

Time	Title	Program No.
08:30	**ShakeAlert@taiwan** Yih-Min Wu, Ming Yang, TC Huang	J04-1-01 invited
09:00	**Challenges for implementing Earthquake Early Warning: A Case Study in Nicaragua** Frederick Massin, John Francis Clinton, Maren Boese, Carlo Virgilio Cauzzi, Wilfried Strauch	J04-1-02
09:15	**Reducing Digitiser Latency for Earthquake Early Warning: New Strategies for Seismic Hardware** Clare Sweeney, Neil Watkiss	J04-1-03
09:30	**A new methodology for Earthquake Early Warning (EEW) by a high-dense seismic network deployed at interstation distance of less than 5 km** Kenji Kanjo	J04-1-04

Session: **J04-2**
Session title: Geohazard early warning systems II
Type: Oral
Date: Thursday, August 3, 2017
Time: 10:30 - 12:00
Room: Intl Conf Room (301)
Chairs: Yusaku Ohta (Tohoku University)
Yih-Min Wu (National Taiwan University)

Time	Title	Program No.
10:30	**Magnitude scaling relationships from the first 3s of P-wave arrivals in Mainland of China** Jindong Song, Dongwang Tao, Shanyou Li, Qiang Ma, Haiying Yu	J04-2-01
10:45	**A Fast Algorithm for Earthquake Early Warning Systems Based on the Energy release of P Waves in the Interval tS-tP** Armando Cuellar, Gerardo Suarez, Juan Manuel Espinosa-Aranda	J04-2-02
11:00	**Seismogeodesy for Rapid Earthquake Magnitude Estimation** Dara Goldberg, Yehuda Bock, Diego Melgar	J04-2-03
11:15	**Determination of warning earthquake magnitude from the initial P-wave recordings based on half periods and characteristic periods** Dongwang Tao, Qiang Ma, Jindong Song, Haiying Yu, Jiang Wang, Shanyou Li	J04-2-04
11:30	**Prediction of the Magnitude and Epicentral Distance from a Single Seismic Record, a Case Study of Ahar-Varzaghan Earthquake** Majid Mahood	J04-2-05

Session: **J04-3**
Session title: Geohazard early warning systems III
Type: Oral
Date: Thursday, August 3, 2017
Time: 13:30 - 15:00
Room: Intl Conf Room (301)
Chairs: Mitsuyuki Hoshiba (Meteorological Research Institute, JMA)
Hiroaki Tsushima (Meteorological Research Institute, Japan Meteorological Agency)

Time	Title	Program No.
13:30	**Testing of GMPEs for absolute velocity response spectra for earthquake early warning of long-period ground motion intensity in Japan** Yadab P. Dhakal, Wataru Suzuki, Takashi Kunugi, Shin Aoi	J04-3-01
13:45	**Real-time prediction of ground shaking without source information: Data assimilation and simulation of seismic wave propagation for Earthquake Early Warning** Mitsuyuki Hoshiba, Masashi Ogiso	J04-3-02
14:00	**Real-Time Ground Motion Prediction based on Radiative Energy Transfer using Front-Site Waveform Information and Data Assimilation for the Application to Regional Earthquake Early Warning** Mike Lindner, Masato Motosaka	J04-3-03
14:15	**Propagation of local undamped motion (PLUM) method and its improvement using P-phase discrimination for more rapid earthquake early warning based on wavefield-estimation approaches** Yuki Kodera	J04-3-04
14:30	**Recent advances in tsunami warning and earthquake early warning of the Japan Meteorological Agency after the 2011 Great Tohoku Earthquake and Tsunami** Satoshi Harada	J04-3-05 invited

Session: **J04-4**
Session title: Geohazard early warning systems IV
Type: Oral
Date: Thursday, August 3, 2017
Time: 16:30 - 18:00
Room: Intl Conf Room (301)
Chairs: Hiroaki Tsushima (Meteorological Research Institute, Japan Meteorological Agency)
Naotaka Yamamoto (NIED)

Time	Title	Program No.
16:30	**Geo-hazard early warning systems: A UNESCO perspective** Jair Torres, Margherita Fanchiotti, John Clinton	J04-4-01
16:45	**Real-Time Tsunami Inundation Forecast System using NIED S-net** Shin Aoi, Naotaka Yamamoto, Wataru Suzuki, Kenji Hirata, Hiromitsu Nakamura, Takashi Kunugi, Tomohiro Kubo	J04-4-02 invited
17:15	**New Insights on Tsunami Genesis and Energy Source** Y. Tony Song, Soomon Yim, Ali Mohtat	J04-4-03
17:30	**Synthesis of Offshore Tsunami Records and Inundation Including Seismic Waves and Tsunami: Anticipated Nankai Trough Earthquakes, Southwest, Japan** Tatsuhiko Saito, Toshitaka Baba, Shunsuke Takemura, Eiichi Fukuyama	J04-4-04
17:45	**Rapid estimation of tsunami source location based on Tsunami Centroid Location (TCL) using NIED oceanfloor observation networks** Naotaka Yamamoto, Takeshi Nakamura, Shin Aoi, Wataru Suzuki, Narumi Takahashi	J04-4-05

Session: **J04-5**
Session title: Geohazard early warning systems V
Type: Oral
Date: Friday, August 4, 2017
Time: 08:30 - 10:00
Room: Intl Conf Room (301)
Chairs: Naotaka Yamamoto (NIED)
Y. Tony Song (NASA Jet Propulsion Labortory)

Time	Title	Program No.
08:30	**Tsunami data assimilation including effects of coseismic deformation for real-time tsunami forecasting using pressure gauges** Takuto Maeda	J04-5-01
08:45	**A fast tsunami data assimilation approach on the 2012 Haida Gwaii earthquake: based on the employment of Green's function** Yuchen Wang, Kenji Satake, Takuto Maeda	J04-5-02
09:00	**Evaluating the efficiency of a tsunami warning system to recover a tsunami source based on the r-solution method** Tatyana Voronina, Alex Romanenko, Artem Loskutov	J04-5-03
09:15	**Improvement of tsunami-forecasting method based on tsunami inversion: small-size and large-amplitude tsunamis** Hiroaki Tsushima	J04-5-04
09:30	**Near-field tsunami forecasting from offshore pressure data in association with the earthquake early warning** Akiko Horiuchi, Ryota Hino, Yusaku Ohta, Hiroaki Tsushima	J04-5-05
09:45	**Airborne observations with a nadir-pointing radar altimeter for a great tsunami detection** Tomoyuki Hirobe, Niwa Yoshihiro, Takahiro Endoh, Daisuke Inazu, Takero Yoshida, Hidee Tatehata, Akitsugu Nadai, Takuji Waseda, Toshiyuki Hibiya	J04-5-06

Session: **J04-6**
Session title: Geohazard early warning systems VI
Type: Oral
Date: Friday, August 4, 2017
Time: 10:30 - 12:00
Room: Intl Conf Room (301)
Chairs: Y. Tony Song (NASA Jet Propulsion Labortory)
Jianghui Geng (Wuhan University)

Time	Title	Program No.
10:30	**Developing a Rapid Tsunami Response System: Application to South America Region** Bruno Adriano, Shunichi Koshimura	J04-6-01
10:45	**The Operational Result for GEONET Real-time Analysis System for Rapid Finite Fault Modeling** Naofumi Takamatsu, Satoshi Kawamoto, Yohei Hiyama, Satoshi Abe, Yusaku Ohta, Takuya Nishimura	J04-6-02
11:00	**Real-time multi-GNSS precise point positioning for earthquake and tsunami early warning over Asia-Pacific regions** Jianghui Geng, Shaoming Xin, Xiaotao Li, Jiang Guo, Xingyu Chen	J04-6-03
11:15	**Real-Time Detection of Tsunami Ionospheric Disturbances with Stand-Alone GNSS Receivers** Giorgio Savastano, Attila Komjathy, Olga Verkhoglyadova, Yong Wei, Augusto Mazzoni, Mattia Crespi	J04-6-04
11:30	**Inversion of tsunami and sea level uplift from GNSS-TEC: toward a breakthrough for tsunami monitoring systems?** Philippe Lognonne, Virgile Rakoto, Khaled Khelfi, Lucie Rolland, Elvira Astafyeva, Pierdavide Coisson, Giovanni Occhipinti, Carene Larmat, Dimitri Komatitsch	J04-6-05
11:45	**Possibility of real-time volcanic plume monitoring using GNSS phase residual and SNR data** Yusaku Ohta, Masato Iguchi	J04-6-06

Session: **J04-7**
Session title: Geohazard early warning systems VII
Type: Oral
Date: Friday, August 4, 2017
Time: 13:30 - 15:00
Room: Intl Conf Room (301)
Chairs: Jianghui Geng (Wuhan University)
Yusaku Ohta (Tohoku University)

Time	Title	Program No.
13:30	**Withdrawn**	J04-7-01
13:45	**Dynamic of aquifer compaction: Insight from continental-scale Sentinel-1 InSAR survey** Mahmud Haghshenas Haghighi, Mahdi Motagh	J04-7-02
14:00	**Panel Discussion** **The Promise and Challenges of Seismo-Geodesy for Earthquake and Tsunami Early Warning (IUGG GeoRisk Commission Sponsorship)** Moderators: John LaBrecque, John Rundle Panelists: Gerald Bawden, Jeffrey Freymuller, Jianghui Geng, Yusaku Ohta, Diego Melgar, Sebastien Riquelme	

Session: **J04-P**
Type: Poster
Date: Thursday, August 3/ Friday, August 4, 2017
Time: 15:30 - 16:30 / 15:00 - 16:00
Room: Shinsho Hall

Title	Program No.
Real-Time Seismological Monitoring System in Northern Sakhalin Igor V. Matveev, Vera V. Bykova, Alexander G. Mikhin, Ruben E. Tatevossian	J04-P-01
An Earthworm based Earthquake Early Warning System with Integrated GMPEs and IPEs for Southwest Iberian Peninsula Jose Antonio Jara, Nuria Romeu, Xavier Goula, Yolanda Colom, Antoni Roca	J04-P-02
Numerical shake prediction incorporating heterogeneous structure: the 2016 Kumamoto Earthquake Masashi Ogiso, Mitsuyuki Hoshiba, Azusa Shito, Satoshi Matsumoto	J04-P-03
Waveform matching for the ocean bottom pressure data toward real-time tsunami forecast Wataru Suzuki, Shin Aoi, Naotaka Yamamoto	J04-P-04
Development of semi-real-time tsunami calculation system for ocean-bottom pressure gauge stations in southwestern and northeastern Japan Takeshi Nakamura, Narumi Takahashi, Wataru Suzuki, Naotaka Yamamoto	J04-P-05
Sea level observations in the coasts of the Mexican Pacific of the tsunami caused by the 2011 Tohoku Earthquake Octavio Gomez-Ramos, Jorge Zavala-Hidalgo, Angel Ruiz-Angulo, Felipe Hernandez-Maguey, Miriam Zarza-Alvarado, Jose Santiago-Santiago, Valente Gutierrez-Quijada	J04-P-06
Decay Properties of Bay Oscillations Induced by the Tsunami of Nankai-Trough Earthquake Yusuke Oishi, Takashi Furumura, Fumihiko Imamura, Kei Yamashita, Daisuke Sugawara	J04-P-07
Real-time correction of tsunami site effect by frequency-dependent tsunami-amplification factor Hiroaki Tsushima	J04-P-08
Revisiting the 1985 M8.1 Michoacan earthquake: Tsunami simulations and synthetic GPS data to test rapid response Angel Ruiz-Angulo, Diego Melgar, Carlos Mendoza	J04-P-09
REGARD: GNSS-based rapid finite fault modeling system Satoshi Kawamoto, Yohei Hiyama, Satoshi Abe, Naofumi Takamatsu, Yusaku Ohta, Takuya Nishimura, Masaru Todoriki	J04-P-10
Accuracy of a continuous/on-demand GPS/Acoustic seafloor positioning using a slackly moored buoy in the Kuroshio region Misae Imano, Motoyuki Kido, Yusaku Ohta, Narumi Takahashi, Tatsuya Fukuda, Hiroshi Ochi, Chie Honsho, Ryota Hino	J04-P-11

J05. Crustal dynamics: Multidisciplinary approach to seismogenesis

Session: **J05-1**
Session title: Crustal dynamics: Multidisciplinary approach to seismogenesis I
Type: Oral
Date: Tuesday, August 1, 2017
Time: 13:30 - 15:00
Room: Room 501
Chairs: Takeshi Sagiya (Nagoya University)
Kuo-Fong Ma (National Central University)

Time	Title	Program No.
13:30	**Southern Costa Rica and the Next Decade: A Spatial and Temporal Opportunity for an International Subduction Zone Observatory** Marino Protti, Cyril Muller	J05-1-01
13:45	**Spatio-temporal variation of the postseismic deformation of the 2011 off the Pacific coast of Tohoku Earthquake (M9.0) detected by means of terrestrial and seafloor observations** Takeshi Iinuma, Yusaku Ohta, Satoshi Miura, Jun Muto, Fumiaki Tomita, Motoyuki Kido, Ryota Hino	J05-1-02
14:00	**Stress field around fault zones of the 2016 Kumamoto earthquake sequence (Mj7.3) inferred from moment tensor data from 1996 to 2016** Satoshi Matsumoto, Yusuke Yamashita, Manami Nakamoto, Masahiro Miyazaki, Shin-ichi Sakai, Yoshihisa Iio, Kazuhiko Goto, Tomomi Okada, Mako Ohzono, Toshiko Terakawa, Masahiro Kosuga, Masayuki Yoshimi, Youichi Asano	J05-1-03
14:15	**Effects of Postseismic Stress Redistribution of the 2011 Tohoku Earthquake on Fault Activities** Yan Hu, Roland Burgmann, Naoki Uchida, Brent Delbridge, Kelin Wang	J05-1-04
14:30	**Modeling deformation processes of the island arc crust and mantle during the postseismic period of the Tohoku-oki earthquake** Bunichiro Shibazaki, Satoshi Miura, Akemi Noda, Takeshi Iinuma, Takumi Matsumoto	J05-1-05
14:45	**Frictional strength of plate interfaces inferred from numerical simulations of stress fields for oceanic plates: Application to the North American-Pacific plate interface off northeast Japan** Akemi Noda, Mitsuhiro Matsu'ura	J05-1-06

Session: **J05-2**
Session title: Crustal dynamics: Multidisciplinary approach to seismogenesis II
Type: Oral
Date: Tuesday, August 1, 2017
Time: 16:30 - 18:00
Room: Room 501
Chairs: Hiroyuki Noda (Kyoto University)
Takeshi Sagiya (Nagoya University)

Time	Title	Program No.
16:30	**A unified representation of Earth's quasi-dynamic deformation processes** Sylvain Barbot	J05-2-01 invited
17:00	**Rheological Structure Beneath Java Island after the 2006 Java Tsunami Earthquake Based on GPS Data** Endra Gunawan, Irwan Meilano, Hasanuddin Z. Abidin, N. Rahma Hanifa, Rio Raharja, Susilo Susilo, Joni Efendi	J05-2-02
17:15	**Afterslip and Viscoelastic Relaxation Model Following The 2010 Mentawai Earthquake Deduced from Postseismic Surface Deformation** Mohammad Yuzariyadi, Irwan Meilano, Endra Gunawan, Kosuke Heki	J05-2-03
17:30	**Reciprocal relationship between seismically estimated slip rates and geodetically estimated slip-deficit rates at plate interfaces: Physical interpretation and logical consequence** Mitsuhiro Matsu'ura, Shunichi Nomura, Yoshihiko Ogata, Naoki Uchida	J05-2-04
17:45	**Characteristics of spatiotemporal variation of hypocenters and the diversity of waveforms of deep low-frequency earthquakes in northeastern Japan** Masahiro Kosuga	J05-2-05

Session: **J05-3**
Session title: Crustal dynamics: Multidisciplinary approach to seismogenesis III
Type: Oral
Date: Wednesday, August 2, 2017
Time: 08:30 - 10:00
Room: Room 501
Chairs: Kuo-Fong Ma (National Central University)
Takeshi Sagiya (Nagoya University)

Time	Title	Program No.
08:30	**Spatial heterogeneity of crustal stress** Yoshihisa Iio	J05-3-01 invited
09:00	**Fault rocks and paleostress fields in the San-in shear zone, western Japan** Hideto Uchida, Hideki Mukoyoshi	J05-3-02

09:15 **Three-dimensional seismic velocity structure beneath the northern South Island, New Zealand from dense seismic observation** J05-3-03
Tomomi Okada, Yoshihisa Iio, Satoshi Matsumoto, Stephen Bannister, Shiro Ohmi, Masumi Yamada, Shintaro Horiuchi, Tsutomu Miura, Tadashi Sato, Jarg Pettinga, Francesca Ghisetti, Richard Sibson

09:30 **3d distribution of fluids and their origins in a seismogenic zone, Northern Miyagi, NE Japan** J05-3-04
Zenshiro Saito, Yasuo Ogawa, Masahiro Ichiki, Hideyuki Satoh

09:45 **A new temperature proxy on faults during earthquake by using maturity of carbonaceous materials: Kinetic effect on the maturation** J05-3-05
Shunya Kaneki, Tetsuro Hirono

Session: **J05-4**
Session title: Crustal dynamics: Multidisciplinary approach to seismogenesis IV
Type: Oral
Date: Wednesday, August 2, 2017
Time: 10:30 - 12:00
Room: Room 501
Chairs: Takeshi Sagiya (Nagoya University)
Kuo-Fong Ma (National Central University)

Time	Title	Program No.
10:30	**GPS VELOCITY FIELD IN THE NORTHWESTERN CORNER OF SOUTH AMERICA** Hector Mora-Paez, James Kellogg, Jeff Freymueller, Dave Mencin, Rui Fernandes da Silva, Leonardo Cardona-Piedrahita, Sindy Lizarazo, Leidy Giraldo, Fredy Diaz-Mila	J05-4-01 invited
11:00	**Taiwan vertical velocity field from precise leveling observations, 2000-2015** Kwo-Hwa Chen, Kuo-En Ching	J05-4-02
11:15	**Observation of aseismic crustal deformation in Taiwan by analysis of InSAR and GPS data** Kotaro Tsukahara, Youichiro Takada	J05-4-03
11:30	**Rapid crustal deformation in SW Taiwan caused by the interaction between active faults and reactivated mud diapirs** Kuo-En Ching, Yuan-Hsi Lee, Ruey-Juin Rau, Ming Yang, Yi-Jhen Hung, Song-Chuen Chen, Lingho Chung, Jei-Ching Hung, Chien-Liang Chen	J05-4-04
11:45	**Performance of VADASE single-frequency GPS solutions in the 2016 M 6.5 Meinong, Taiwan, earthquake** Ruey-Juin Rau, Choon-Muar Ker, Giorgio Savastano, Mattia Crespi	J05-4-05

Session: **J05-5**
Session title: Crustal dynamics: Multidisciplinary approach to seismogenesis V
Type: Oral
Date: Wednesday, August 2, 2017
Time: 13:30 - 15:00
Room: Room 501
Chairs: Hiroyuki Noda (Kyoto University)
Kuo-Fong Ma (National Central University)

Time	Title	Program No.
13:30	**Early recurrence of an M6 intraplate earthquake (5.8 years) observed in northern Kanto region, Japan, after the 2011 Tohoku-oki earthquake** Yo Fukushima, Shinji Toda, Satoshi Miura	J05-5-01
13:45	**Crustal deformation process in Mid-Niigata as observed by dense GPS network before and after the 2011 Tohoku-oki earthquake** Angela Meneses-Gutierrez, Takeshi Sagiya, Shutaro Sekine	J05-5-02
14:00	**Crustal deformation in and around the Atotsugawa fault before and after the Tohoku-Oki earthquake** Tomomi Inamatsu, Youichiro Takada, Takeshi Sagiya, Takuya Nishimura	J05-5-03
14:15	**The role of the lower crust in crustal deformation of the Japan island arc** Takeshi Sagiya, Angela Meneses-Gutierrez, Xuelei Zhang, Yumi Shimoyama, Kouki Kumagai	J05-5-04
14:30	**Importance of fault rheology around brittle-plastic transition in long-term slip rate of major faults** Hiroyuki Noda	J05-5-05
14:45	**Seismicity and Geothermal activities in the Upemba Rift Basin (SE of the DR Congo)** Kadima Kabongo, Kipata Mwabanua	J05-5-06

Session: **J05-P**
Type: Poster
Date: Tuesday, August 1/ Wednesday, August 2, 2017
Time: 15:30 - 16:30
Room: Shinsho Hall

Title	Program No.
Investigation of remote earthquake triggering after the 2011 M9.0 Tohoku-oki earthquake Anca Opris, Bogdan Enescu, Yuji Yagi	J05-P-01
Simulation of postseismic deformation caused by the 2011 Tohoku-Oki earthquake Hisashi Suito	J05-P-02
Spatiotemporal distribution of locking and aseismic slips prior to the 2011 Tohoku-oki earthquake Momo Tanaka, Shoichi Yoshioka, Yukiko Nishino	J05-P-03
Source processes of the M6-class repeating earthquakes which occurred in northern Ibaraki Prefecture, Japan, on 2011 and 2016 Kazuhito Hikima	J05-P-04

Numerical Simulation of Plate Deformation and Stress in the Andaman Subduction Zone J05-P-05
R. Yadav, VM Tiwari

The 2016 M6.5 Pidie Jaya Earthquake, Aceh Province, Indonesia; Which Fault? J05-P-06
N. Rahma Hanifa, Irwan Meilano, Masyhur Irsyam, Agustan Agustan, Daryono Daryono, Danny H. Natawidjaja, Wahyu Triyoso, Sri Widiyantoro, Sri Hidayati, Mohamad Ridwan, Susilo Susilo, Endra Gunawan, Amir H. Isa, Supartoyo Supartoyo, Andri C. Utomo, Gayatri I. Marliyani, Bagoes D. Ramdhani, Refi R. Ramadian, Suchi Rahmadani, Alwidya A. Safitri

Regional stress field inferred from focal mechanisms obtained by dense seismic observation in the northern South Island, New Zealand J05-P-07
Tadashi Sato, Tomomi Okada, Yoshihisa Iio, Satoshi Matsumoto, Stephen Bannister, Shiro Ohmi, Masumi Yamada, Tsutomu Miura, Jarg Pettinga, Francesca Ghisetti, Richard Sibson

Crustal stress and strain inversion of the Taiwan orogen using a mixed linear-nonlinear Bayesian approach J05-P-08
Ray Y. Chuang

Afterslip and viscoelastic components observed in surface gravity change after the 2011 Great Tohoku earthquake J05-P-09
Shuhei Okubo, Xinlin Zhang, Yoshiyuki Tanaka, Yuichi Imanishi, Satoshi Miura, Sadato Ueki, Hiromitsu Oshima, Tokumitsu Maekawa, Kazumi Okada, Miwako Ando

The spatial distribution of the stress ratio in the aftershock area of the 2000 Western Tottori Earthquake J05-P-10
Takaki Iwata

Seismic velocity structure in the lower crust beneath the seismic belt in the San-in district, Japan J05-P-11
Hiroo Tsuda, Yoshihisa Iio, Takuo Shibutani

Depth dependence of stress field investigated from microseismicity in northwestern Kii Peninsula, southwestern Japan J05-P-12
Sumire Maeda, Toru Matsuzawa, Keisuke Yoshida, Shinji Toda, Hiroshi Katao

Tectonic Loading of the Atera Fault inferred from Dense GNSS Observation J05-P-13
Koki Kumagai, Takeshi Sagiya, Nobuhisa Matta

Spatio-temporal variation in Coda Q in the northeastern part of Niigata-Kobe Tectonic Zone in 2009-2014 J05-P-14
Masanobu Dojo, Yoshihiro Hiramatsu

The gravity anomalies analysis over the active reverse fault zones in Japan J05-P-15
Nayuta Matsumoto, Yoshihiro Hiramatsu, Akihiro Sawada, Shinsuke Okada, Ryo Honda, Toshiyuki Tanaka

Influence of water on rheological properties of feldspar aggregates under the lower crustal temperature and pressure J05-P-16
Masanori Kido, Jun Muto, Sanae Koizumi, Hiroyuki Nagahama

J06. The spectrum of fault-zone deformation processes (from slow slip to earthquake)

Session: **J06-1**
Session title: The spectrum of fault-zone deformation processes (from slow slip to earthquake) I
Type: Oral
Date: Monday, July 31, 2017
Time: 08:30 - 10:00
Room: Intl Conf Room (301)
Chairs: Tadafumi Ochi (AIST)
Hitoshi Hirose (Kobe University)

Time	Title	Program No.
08:30	**Numerical experiments on estimation of frictional properties and slip evolution on the Bungo Channel Long-term SSE fault with Ensemble Kalman Filter** Kento Nishikiori, Kazuro Hirahara	J06-1-01
08:45	**Long-term slow slip events in the Tokai region, central Japan, before 2000** Tadafumi Ochi	J06-1-02
09:00	**Correlation between Coulomb Stress Rate Change Imparted by Two Slow Slip Events and Seismic Rate Change in Lower Cook Inlet of the Alaska-Aleutian Subduction Zone** Shanshan Li, Jeffrey Freymueller, Jianjun Wang, Natalia Ruppert	J06-1-03
09:15	**Insights into the Causal Relationship between Slow Slip Events and Tectonic Tremors in Guerrero, Mexico** Carlos Villafuerte, Victor Cruz-Atienza	J06-1-04

09:30 **EFFECTS OF THE GEOMETRY OF THE MEXICAN SUBDUCTION ZONE TECTONIC-INTERFACE ON THE STRESS TRANSFER DUE TO INTERPLATE SLIP EVENTS.** J06-1-05
Miguel Angel Santoyo, Vladimir Kostoglodov, Carlos Mendoza

09:45 **Laboratory observations of slow stick slip: implications for slow earthquakes and the spectrum of fault slip behavior** J06-1-06 invited
Marco Maria Scuderi, Elisa Tinti, Cristiano Collettini

Session: **J06-2**
Session title: The spectrum of fault-zone deformation processes (from slow slip to earthquake) II
Type: Oral
Date: Monday, July 31, 2017
Time: 10:30 - 12:00
Room: Intl Conf Room (301)
Chairs: Naoki Uchida (Tohoku University)
Kimihiro Mochizuki (University of Tokyo)

Time	Title	Program No.
10:30	**Completing the Seismic Cycle: Approaching 100% slip recovery along the subduction megathrust beneath Nicoya Peninsula, Costa Rica** Andrew Newman, Christodoulos Kyriakopoulos, Tiegan Hobbs	J06-2-01
10:45	**Anomalous gravity changes observed during long-term slow slip events and a possible interpretation based on fluid flow** Yoshiyuki Tanaka, Yuichi Imanishi, Shuhei Okubo, Kazunari Nawa, Yoshiaki Tamura, Kenji Yoshida	J06-2-02
11:00	**Meaning and prospect for science of slow earthquakes** Kazushige Obara	J06-2-03 invited
11:15	**Emergence and disappearance of interplate repeating earthquakes after the 2011 Tohoku-oki earthquake: transition between slow slip and earthquakes** Naoki Uchida, Norishige Hatakeyama, Toru Matsuzawa, Wataru Nakamura	J06-2-04
11:30	**Spatio-temporal distribution of earthquakes around the subducted seamount off Ibaraki in response to the largest Mw7.8 aftershock of the 2011 Tohoku-oki earthquake** Kimihiro Mochizuki, Shinji Yoneshima, Tomoaki Yamada, Masanao Shinohara	J06-2-05
11:45	**Seismic quiescence of deep very low frequency earthquakes from later 2014 in western Shikoku, Japan** Satoru Baba, Akiko Takeo, Aitaro Kato, Takuto Maeda, Kazushige Obara, Takanori Matsuzawa	J06-2-06

Session: **J06-3**
Session title: The spectrum of fault-zone deformation processes (from slow slip to earthquake) III
Type: Oral
Date: Tuesday, August 1, 2017
Time: 08:30 - 10:00
Room: Intl Conf Room (301)
Chairs: Natalia Poiata (National Institute for Earth Physics, Romania)
Yoshihiro Ito (Kyoto University)

Time	Title	Program No.
08:30	**Rapid Tremor Migration Induced by Pore Pressure Waves** Victor M. Cruz-Atienza, Carlos Villafuerte, Harsha Bhat	J06-3-01
08:45	**Comprehensive detection of low frequency tremor triggered by teleseismic surface waves in northern Kii and western Shikoku, southwest Japan** Ryo Kurihara, Kazushige Obara, Akiko Takeo, Takuto Maeda	J06-3-02
09:00	**Analyzing tectonic tremor and low-frequency earthquakes' activity in western Shikoku using automatic detection and location scheme** Natalia Poiata, Jean-Pierre Vilotte, Kazushige Obara, Pascal Bernard	J06-3-03
09:15	**Continuous S-wave signals following 2014 Mw 6.8 SSE in the Hikurangi subduction margin offshore New Zealand** Yuriko Iwasaki, Kimihiro Mochizuki, Motoko Ishise, Erin Todd, Susan Schwartz, Stuart Henrys, Martha Savage, Anne Sheehan, Yoshihiro Ito, Laura Wallace, Spahr Webb, Tomoaki Yamada, Masanao Shinohara	J06-3-04
09:30	**Micro low-frequency tremor activity near Japan Trench** Satoshi Katakami, Yoshihiro Ito, Kazuaki Ohta, Ryota Hino, Shuichi Suzuki, Masanao Shinohara	J06-3-05
09:45	**Rheologically controlled spatial separation of the megathrust seismogenic zone and the zone of Episodic Tremor and Slip** Kelin Wang, Xiang Gao	J06-3-06 invited

Session: **J06-4**
Session title: The spectrum of fault-zone deformation processes (from slow slip to earthquake) IV
Type: Oral
Date: Tuesday, August 1, 2017
Time: 10:30 - 12:00
Room: Intl Conf Room (301)
Chairs: Aitaro Kato (University of Tokyo)
Chris Marone (Pennsylvania State University)

Time	Title	Program No.
10:30	**Renovated 3D image of Nankai accretionary wedge and shallow seismogenic zone off Kumano through reprocessing of 3D seismic data** Masataka Kinoshita, Kazuya Shiraishi, Greg Moore, Yasuhiro Yamada, Gaku Kimura	J06-4-01
10:45	**Evaluation of rock evolution process in seismogenic fault: Dynamic wave propagation modeling to the digitalized fault rocks** Chandoeun Eng, Tatsunori Ikeda, Takeshi Tsuji	J06-4-02
11:00	**Down-dip variations in a subducting low-velocity zone linked to episodic tremor and slip** Aitaro Kato, Mitsuhiro Toya, Takuto Maeda, Kazushige Obara, Tetsuya Takeda, Koshun Yamaoka	J06-4-03
11:15	**Interplate thermal regime and slab dehydration at the source region of episodic tremor and slow slip events in the Cascadia subduction zone** Yingfeng Ji, Shoichi Yoshioka	J06-4-04
11:30	**The dynamic stiffness as the indicator of slip mode and transition of the fault to a metastable stage.** Gevorg Kocharyan, Alexey Ostapchuk, Dmitry Pavlov	J06-4-05
11:45	**1972 Slow Mega Slip Event in Mexico Recoded with Tide Gauges** Vladimir Kostoglodov, Nathalie Cotte, Andrea Walpersdorf, Jose Antonio Santiago	J06-4-06

Session: **J06-P**
Type: Poster
Date: Tuesday, August 1/ Wednesday, August 2, 2017
Time: 15:30 - 16:30
Room: Shinsho Hall

Title	Program No.
Real-time slow slip monitoring with the Geodetic Data Stacking (GDS) method Kazuki Miyaoka, Takahiro Tsuyuki, Hisao Kimura	J06-P-01
Construction of short-term slow slip event catalog detected automatically from tilt and strain data within the Nankai subduction zone, Japan Takeshi Kimura, Satoshi Itaba, Takanori Matsuzawa, Hisanori Kimura	J06-P-02
Shallow Slow Slip Event Off the Kii Peninsula, Japan Satoshi Itaba, Satoshi Annoura, Tetsuo Hashimoto, Noriko Kamaya, Akio Katsumata	J06-P-03
Spatio-temporal evolution of recurrent slow slip events from 2010 to 2013 along the Ryukyu Trench, southwestern Japan Masayuki Kano, Jun'ichi Fukuda, Shin'ichi Miyazaki, Mamoru Nakamura	J06-P-04
Estimation of the spatiotemporal evolution of slow slip events in the Tokai region, central Japan, since 2013 using GNSS data Hiromu Sakaue, Jun'ichi Fukuda, Teruyuki Kato, Takuya Nishimura	J06-P-05
Estimating long-term and short-term slow slip events in the Bungo Channel area by MCMKF-based inversion Takatoshi Yokoi, Shinichi Miyazaki, Hiromu Sakaue, Jun'ichi Fukuda	J06-P-06
A trial to find long-term variation in slip-deficits in the Bungo Channel region, Nankai Trough Shinichi Miyazaki, Takatoshi Yokoi, Hiromu Sakaue, Jun'ichi Fukuda	J06-P-07
Slip velocities of early afterslips in northeastern Japan Shunsuke Morikami, Yuta Mitsui	J06-P-08
Low-frequency earthquake distribution covered with undrained layer of the overlying plate along Tokai plate boundary of the Nankai subduction zone Sadaomi Suzuki, Makoto Okubo, Kazutoshi Imanishi, Junichi Nakajima	J06-P-09
Variation of deep low frequency tremor activity along dip direction in western Shikoku, southwest Japan Akira Hikita, Akiko Takeo, Takuto Maeda, Aitaro Kato, Takanori Matsuzawa, Kazushige Obara	J06-P-10
Seismic anisotropy monitoring and detection of tremor activity in the southwest Japan subduction zone Motoko Ishise, Kiwamu Nishida, Kimihiro Mochizuki	J06-P-11
Low frequency tremor activity in the Tohoku subduction zone based on ocean bottom seismograms Hidenobu Takahashi, Ryota Hino, Masanao Shinohara, Yukihiro Nakatani, Syuichi Suzuki	J06-P-12
Low-frequency tremor activity in the shallow part of Nankai Trough and Ryukyu Trench revealed by long-term ocean bottom observation Yusuke Yamashita, Masanao Shinohara, Hiroshi Yakiwara, Tomoaki Yamada, Kazuo Nakahigashi, Hajime Shiobara, Kimihiro Mochizuki, Takuto Maeda, Kazushige Obara	J06-P-13

Network-MT survey in the vicinity of area with a forthcoming slow slip event in the SW part of Shikoku Island, SW Japan J06-P-14
Makoto Uyeshima, Maki Hata, Hiroshi Ichihara, Ryokei Yoshimura, Koki Aizawa

Moment tensor inversion of tectonic tremors in the Guerrero subduction zone J06-P-15
Emmanuel Caballero-Leyva, Victor M. Cruz-Atienza

Anisotropy in the subducted oceanic crust and the overlying continental crust coincides with slow slip phenomena in the flat portion of the Mexican subduction zone J06-P-16
Allen Husker, Jorge Castillo, Xyoli Perez-Campos, William Frank

The long duration, April 18, 2002 (Mw 6.7), Mexico earthquake; a small tsunami earthquake next to the Guerrero Gap J06-P-17
Ketzallina Flores, Vala Hjorleifsdottir, Shri Singh, Arturo Iglesias

Trench-parallel sliver motion in the Mexican oblique subduction zone J06-P-18
Ekaterina Kazachkina, Vladimir Kostoglodov, Allen Husker, Jose Antonio Santiago, Nathalie Cotte, Andrea Walpersdorf

Drilling into Active Faults - In-situ Investigations on the Mechanics and Structure of Faults in Central Japan J06-P-19
Kentaro Omura

J07. Tracking the sea floor in motion

Session: **J07-1**
Session title: Tracking the sea floor in motion I
Type: Oral
Date: Thursday, August 3, 2017
Time: 08:30 - 10:00
Room: Room 401
Chairs: Tadashi Ishikawa (Japan Coast Guard)
Diego Melgar (University of California, Berkeley)

Time	Title	Program No.
08:30	**Observational Results of Seafloor Crustal Deformation Near the Nankai Trough Axis** Keiichi Tadokoro, Mitsuru Kado, Hiroshi Kimura, Motoyuki Kido, Kenjiro Matsuhiro	J07-1-01 invited
08:45	**Interseismic seafloor GPS-A data used for tsunami generation modeling along the Nankai trough, Japan** Shun-Ichi Watanabe, Yehuda Bock, Diego Melgar, Tadashi Ishikawa, Yusuke Yokota, Keiichi Tadokoro	J07-1-02
09:00	**Postseismic deformation of the 2011 Tohoku Earthquake measured by GPS/Acoustic observations** Fumiaki Tomita, Motoyuki Kido, Yusaku Ohta, Takeshi Iinuma, Ryota Hino	J07-1-03
09:15	**Preliminary Results of Realistic Interseismic Modeling and GPS-Acoustics Measurements on the Continental Slope of the Cascadia Subduction Zone** Diego Melgar, David Chadwell, David Schmidt	J07-1-04
09:30	**Short-period ocean fluctuation induced by internal wave and its effect on GNSS/acoustic analysis** Motoyuki Kido, Ryo Matsui, Misae Imano, Chie Honsho	J07-1-05
09:45	**Refining ship navigation with precise point positioning to measure seafloor displacement using repeated sidescan sonar surveys** John DeSanto, David Sandwell, David Chadwell	J07-1-06

Session: **J07-2**
Session title: Tracking the sea floor in motion II
Type: Oral
Date: Thursday, August 3, 2017
Time: 10:30 - 12:00
Room: Room 401
Chairs: Ryota Hino (Tohoku University)
C. K. Shum (Ohio State University)

Time	Title	Program No.
10:30	**New Technologies for Seafloor Deformation: Optical Fiber Strainmeters and Self-Calibrating Pressure Recorders** Mark Zumberge, Glenn Sasagawa, William Hatfield, Matthew Cook	J07-2-01 invited
10:45	**Initial characteristics of LTBMS borehole sensors installed in the Nankai Trough, Japan** Toshinori Kimura, Eiichiro Araki, Yuya Machida	J07-2-02
11:00	**Laboratory experiments for evaluating long-term characteristics of pressure sensors used for seafloor pressure monitoring** Hiroaki Kajikawa, Tokihiko Kobata	J07-2-03
11:15	**Mega Earthquake Seismic Deformation Detection and Modeling Using GRACE and Ocean Bottom Pressure Measurements** Chunli Dai, C. K. Shum, Junyi Guo, Kun Shang, Ting-yi Yang, Yoshihiro Ito, Ryota Hino, Rongjiang Wang	J07-2-04

11:30	**Studying fault slip during and after the 2012 M 7.6 Costa Rica earthquake using land-based GNSS and near-trench fluid pressure observations** Tianhaozhe Sun, Kelin Wang, Earl Davis, Yan Jiang, Martin Heesemann	J07-2-05 invited
11:45	**On the Interpretation of oceanic variations in terms of ocean bottom pressure** Tomoya Muramoto, Yoshihiro Ito, Daisuke Inazu, Stuart Henrys, Laura Wallace, Stephen Bannister, Ryota Hino, Syuichi Suzuki, Kimihiro Mochizuki	J07-2-06

Session: **J07-3**
Session title: Tracking the sea floor in motion III
Type: Oral
Date: Thursday, August 3, 2017
Time: 13:30 - 15:00
Room: Room 401
Chairs: Narumi Takahashi (NIED/JAMSTEC)
John DeSanto (University of California, San Diego)

Time	Title	Program No.
13:30	**New buoy platform system for crustal displacement observation** Narumi Takahashi, Kentaro Imai, Yasuhisa Ishihara, Tatsuya Fukuda, Hiroshi Ochi, Misae Imano, Yusaku Ohta, Motoyuki Kido, Shuichi Kodaira	J07-3-01
13:45	**S-net project: Large-scale seismic and tsunami observation system on seafloor along the Japan Trench** Kenji Uehira, Masashi Michizuki, Toshihiko Kanazawa, Takashi Shinbo, Katsuhiko Shiomi, Takashi Kunugi, Shin Aoi, Takumi Matsumoto, Shoji Sekiguchi, Narumi Takahashi, Naotaka Yamamoto, Masanao Shinohara, Tomoaki Yamada	J07-3-02
14:00	**Real-time observation system of pressure gauges and accelerometers on seafloor using ICT through seafloor fiber cable installed in the off-Sanriku region, Japan** Masanao Shinohara, Tomoaki Yamada, Shin'ichi Sakai, Hajime Shiobara, Toshihiko Kanazawa	J07-3-03
14:15	**Seafloor deformation due to ocean tidal loading observed by seafloor cabled network** Eiichiro Araki	J07-3-04
14:30	**Monitoring submarine fault deformation using direct-path ranging** Florian Petersen, Heidrun Kopp, Dietrich Lange, Katrin Hannemann, Morelia Urlaub	J07-3-05 invited
14:45	**Slip rate of the North Anatolian Fault at the western part of the Sea of Marmara through seafloor geodetic measurement for two years** Ryusuke Yamamoto, Motoyuki Kido, Yusaku Ohta, Narumi Takahashi, Yojiro Yamamoto, Dogan Kalafat, Ali Pinar, Haluk Ozener, Sinan Ozeren, Yoshiyuki Kaneda	J07-3-06

Session: **J07-P**
Type: Poster
Date: Thursday, August 3/ Friday, August 4, 2017
Time: 15:30 - 16:30 / 15:00 - 16:00
Room: Shinsho Hall

Title	Program No.
Towards an Ocean Bottom Geodetic Observatory In Mexico: The First Steps Vala Hjorleifsdottir, Yoshihiro Ito, Victor Manuel Cruz-Atienza	J07-P-01
Quantitative evaluation of error sources for the GPS-A seafloor geodesy Yusuke Yokota, Tadashi Ishikawa, Shun-ichi Watanabe	J07-P-02
Recent seafloor movement in and around the rupture zone of the 2011 Tohoku-oki earthquake detected by GPS-Acoustic seafloor geodesy Tadashi Ishikawa, Yusuke Yokota, Shun-ichi Watanabe	J07-P-03
Detection of offshore vertical displacements after the 2011 Tohoku-oki Earthquake using GPS/A observations Fumiaki Tomita, Chie Honsho, Motoyuki Kido	J07-P-04
Little evidence of shortening motion across the Japan Trench after the 2011 Tohoku-oki earthquake from direct-path acoustic ranging Ryusuke Yamamoto, Ryota Hino, Motoyuki Kido, Chie Honsho	J07-P-05
Characteristics of a quartz pressure sensor assuming an ocean bottom environment for highly accurate measurements of small and long-term crustal deformation Yuya Machida, Shuhei Nishida, Eiichiro Araki, Toshinori Kimura	J07-P-06
Investigation of long period behaviors of seafloor pressure records based on field data and laboratory test results Ryota Hino, Syuichi Suzuki, Makiko Sato, Yusaku Ohta, Yoshihiro Ito, Hiroaki Kajikawa, Tokihiko Kobata	J07-P-07
Reexamination of the fault model for transient slow slip event in the Japan Trench before the 2011 Tohoku-Oki earthquake Yui Nishimagi, Yusaku Ohta, Ryota Hino	J07-P-08

Changes in physical properties of the Nankai Trough megasplay fault induced by earthquakes, detected by continuous pressure monitoring J07-P-09
Chihiro Kinoshita, Demian Saffer, Achim Kopf, Rosner Alexander, Laura Wallace, Eiichiro Araki, Toshinori Kimura, Yuya Machida, Reiji Kobayashi, Earl Davis, Sean Toczko

Possibility of tilt observation at the seafloor by a mobile ocean bottom seismometer J07-P-10
Hajime Shiobara, Aki Ito, Hiroko Sugioka, Yoshio Fukao, Masanao Shinohara

Monitoring of the shallow tremors around the source areas of the Nankai and Tonankai earthquakes by ocean bottom observations J07-P-11
Kensuke Suzuki, Eiichiro Araki, Toshinori Kimura, Yuya Machida, Demian Saffer, Narumi Takahashi, Shuichi Kodaira

Site amplification at Nankai seafloor observation network DONET1 in Japan evaluated by spectral inversion J07-P-12
Hisahiko Kubo, Takeshi Nakamura, Wataru Suzuki, Takeshi Kimura, Takashi Kunugi, Narumi Takahashi, Shin Aoi

J08. Imaging and interpreting lithospheric structures using seismic and geodetic approaches

Session: **J08-1**
Session title: Imaging and interpreting lithospheric structures using seismic and geodetic approaches I
Type: Oral
Date: Wednesday, August 2, 2017
Time: 16:30 - 18:00
Room: Room 501
Chairs: Brian Boston (Japan Agency for Marine-Earth Science and Technology)
Takaya Iwasaki (Earthquake Research Institute, the University of Tokyo)

Time	Title	Program No.
16:30	**3-D S-wave velocity structure under the Changbaishan volcanic area in Northeast China inverted with dense NECsaids array** Qi-Fu Chen, Xing-Li Fan, Wu Wang	J08-1-01
16:45	**First insights into the deep structure of the eastern Australian passive margin using wide-angle seismic data: Crustal segmentation from the Tasman Basin to the northern Lord Howe Rise** Flora Gallais, Gou Fujie, Shuichi Kodaira, Seiichi Miura, Brian Boston, Yasuyuki Nakamura, Ron Hackney, Saneatsu Saito, Kazuya Shiraishi, Yuka Kaiho, Yasuhiro Yamada, Scott Nichol, Georges Bernardel, Cameron Mitchell	J08-1-02
17:00	**Formation of the Lord Howe Rise continental ribbon during eastern Gondwana breakup from multi-channel seismic reflection data** Brian Boston, Yasuyuki Nakamura, Shuichi Kodaira, Seiichi Miura, Flora Gallais, Gou Fujie, Yuka Kaiho, Ron Hackney, Yasuhiro Yamada, Saneatsu Saito, Kazuya Shiraishi, Scott Nichol, George Bernardel, Cameron Mitchell	J08-1-03
17:15	**Coupled anisotropic and isotropic body-wave tomography of the upper mantle beneath northern Fennoscandia - Application of a novel code AniTomo to data from passive seismic experiment LAPNET (Finland)** Helena Munzarova, Jaroslava Plomerova, Eduard Kissling, Ludek Vecsey, Vladislav Babuska	J08-1-04

17:30 **Waveform-based estimation of velocity heterogeneity for prestack imaging from multifold wide-aperture seismic data** J08-1-05
Susumu Abe, Takao Nibe, Hiroshi Sato, Tatsuya Ishiyama

17:45 **Seismic Imagings of Sub-Crustal Reflectors Beneath the Iberia Microplate** J08-1-06
Imma Palomeras, Puy Ayarza, Jordi Diaz, Juan Carlos Afondo, Ramon Carbonell

Session: **J08-2**
Session title: Imaging and interpreting lithospheric structures using seismic and geodetic approaches II
Type: Oral
Date: Thursday, August 3, 2017
Time: 08:30 - 10:00
Room: Room 501
Chairs: Ryosuke Azuma (RCPEVE, Tohoku University)
Shuichi Kodaira (Japan Agency for Marine-Earth Science and Technology)

Time	Title	Program No.
08:30	**Tomographic imaging of the seismic velocity structure in southern Hokkaido, Japan: Implications for distributions of the crustal deep low-frequency earthquakes** Takahiro Shiina, Hiroaki Takahashi, Tomomi Okada, Toru Matsuzawa	J08-2-01
08:45	**Structural heterogeneities around inland earthquake areas in Hokkaido Island based on magnetotelluric observations** Hiroshi Ichihara, Yusuke Yamaya, Toru Mogi	J08-2-02
09:00	**Structure of the incoming/subducting Pacific Plate in the central part of the Japan Trench: Results from repeated ocean bottom seismograph observations** Koichiro Obana, Gou Fujie, Tsutomu Takahashi, Takashi Tonegawa, Yojiro Yamamoto, Shuichi Kodaira, Masanao Shinohara	J08-2-03
09:15	**Seismic structure around the slow slip source in the northeastern Japan forearc by an airgun-ocean bottom seismometer survey** Ryosuke Azuma, Ryota Hino, Kimihiro Mochizuki, Yoshio Murai, Hiroshi Yakiwara, Toshinori Sato, Masanao Shinohara	J08-2-04
09:30	**Structural variation in the rupture zone of the 2011 Tohoku-oki earthquake and its implications for depth-dependent seismic-slip behaviors** Shuichi Kodaira, Yasuyuki Nakamura, Yojiro Yamamoto, Koichiro Obana, Gou Fujie, Tetsuo No, Yuka Kaiho, Takeshi Sato, Seiichi Miura	J08-2-05
09:45	**Investigation of seismicity and subsurface structure around northern Tohoku using seismic data recorded by AS-net** Shinako Noguchi, Yoshihiro Sawada, Keiji Kasahara, Shutaro Sekine, Yoshihiro Tazawa, Hiroshi Yajima, Shunji Sasaki, Kimiko Ishida	J08-2-06

Session: **J08-3**
Session title: Imaging and interpreting lithospheric structures using seismic and geodetic approaches III
Type: Oral
Date: Thursday, August 3, 2017
Time: 10:30 - 12:00
Room: Room 501
Chairs: James Moore (Earth Observatory of Singapore)
Ryo Honda (Mount Fuji Research Institute)

Time	Title	Program No.
10:30	**Failed rift system in northern Honshu, Japan, imaged by improved seismic velocity structure using offshore earthquake events** Makoto Matsubara, Hiroshi Sato	J08-3-01
10:45	**Geometry and spatial variations of seismic reflection intensity of the upper surface of the Philippine Sea plate off the Boso Peninsula, Japan** Akihiro Kono, Toshinori Sato, Masanao Shinohara, Kimihiro Mochizuki, Tomoaki Yamada, Kenji Uehira, Takashi Shimbo, Yuya Machida, Ryota Hino, Ryosuke Azuma	J08-3-02
11:00	**Hydrocarbon accumulation controlled by tectonic activity in the subduction zone: Insight from advanced seismic velocity analysis** Chanmaly Chhun, Takeshi Tsuji, Arata Kioka	J08-3-03
11:15	**Imaging of the subducted Philippine Sea plate and the overriding SW Japan arc - Reinterpretation of the wide-angle reflection data in the Kii Peninsula, SW Japan -** Takaya Iwasaki, Susumu Abe, Eiji Kurashimo, Ken Yokota, Takashi Iidaka, Hiroshi Katao, Motonori Higashinaka, Ayako Nakanishi, Yoshiyuki Kaneda	J08-3-04
11:30	**Three dimensional attenuation structure in and around the source region of low frequency earthquakes beneath the Kii Peninsula, southwest Japan, revealed by dense seismic array observation** Noriko Tsumura, Hiroki Nakasako, Eri Umeyama, Naoki Mizuno, Eiji Kurashimo, Aitaro Kato, Shinichi Sakai, Takashi Iidaka, Takaya Iwasaki	J08-3-05
11:45	**Imaging the distribution of transient viscosity following the 2016 Mw 7.1 Kumamoto earthquake** James Moore, Hang Yu, Chi-Hsien Tang, Teng Wang, Sylvain Barbot, Dongju Peng, Sagar Masuti, Justin Dauwels, Ya-Ju Hsu, Valere Lambert, Bunichiro Shibazaki	J08-3-06

Session: **J08-P**
Type: Poster
Date: Thursday, August 3/ Friday, August 4, 2017
Time: 15:30 - 16:30 / 15:00 - 16:00
Room: Shinsho Hall

Title	Program No.
Multicore parallelization of 3D ray tracing algorithm using OpenMP Madineh Banihashem Kalibar, Hossein Sadeghi, Sayyed Keivan Hosseini	J08-P-01
Waveform inversion to image laterally inhomogeneous crustal structure - comparison among waveform inversion, traveltime inversion, and seismic migration - Takeshi Sato, Gou Fujie, Kazuya Shiraishi, Shuichi Kodaira, Seiichi Miura, Eiichi Asakawa, Takao Nibe, Norimitsu Yui, Susumu Abe, Romain Brossier, Jean Virieux	J08-P-02
Feasibility of the waveform analysis to the existing conventional wide-angle seismic survey data - Ocean Bottom Seismometer (OBS) and controlled-source seismic surveys in the Nankai subduction zone - Gou Fujie, Ayako Nakanishi, Takeshi Sato, Shuichi Kodaira	J08-P-03
Inversion of Gravity Anomalies Using Primal-Dual Interior Point Methods Azucena Zamora, Aaron Velasco	J08-P-04
Gravitational signal produced by global shallow-Earth density model Litho1.0 Josef Sebera, Roger Haagmans, Rune Floberghagen, Diego Fernandez Pietro, Joerg Ebbing, Michael Kern	J08-P-05
Deep Conductive Structure beneath the Kutcharo Caldera, Revealed by 3-D Inversion Analysis Ryo Honda, Hiroshi Ichihara, Yusuke Yamaya, Hideaki Hase, Toru Mogi, Makoto Uyeshima, Mitsuhiro Nakagawa	J08-P-06
Crustal structure beneath the eastern foot of the Japan Trench outer rise by airgun-ocean bottom seismometer survey Shuhei Otomo, Ryosuke Azuma, Ryota Hino, Gou Fujie, Shuichi Kodaira	J08-P-07
Velocity structure and Earthquake Distribution in Nagaoka Region Shutaro Sekine, Yoshihiro Sawada, Keiji Kasahara, Shunji Sasaki, Yoshihiro Tazawa	J08-P-08
Plate boundary property of the Philippine Sea plate revealed from later phase analysis beneath southwestern Ibaraki and northwestern Chiba prefectures, central Japan Hisanori Kimura, Naoshi Hirata	J08-P-9
Heterogeneous structure in the incoming Philippine Sea plate along the Nankai Trough Ayako Nakanishi, Mikiya Yamashita, Yojiro Yamamoto, Gou Fujie, Seiichi Miura, Shuichi Kodaira, Yoshiyuki Kaneda, Nomukazu Seama	J08-P-10
Detailed crustal and upper mantle structure of the subducting Philippine Sea plate and the overlying southwestern Japan arc, revealed by dense seismic array observation Eiji Kurashimo, Takashi Iidaka, Noriko Tsumura, Takaya Iwasaki	J08-P-11
3D seismic velocity structure beneath Kii Peninsula, southwestern Japan derived from receiver function analysis and seismic tomography Takuo Shibutani, Kazuro Hirahara	J08-P-12
Crustal velocity structure and configuration of the subducting Philippine Sea plate beneath the Japanese Islands identified from receiver function analysis Toshihiro Igarashi, Takashi Iidaka	J08-P-13
Geometry of the frontal thrust at the trench axis around the Hyuga-nada region revealed by high-resolution seismic reflection imaging Mikiya Yamashita, Ayako Nakanishi, Ryuta Arai, Shuichi Kodaira, Yasuyuki Nakamura, Seiichi Miura, Yoshiyuki Kaneda	J08-P-14
Three-dimensional P- and S-wave attenuation tomography in the Ryukyu Arc, Japan Masanao Komatsu, Hiroshi Takenaka	J08-P-15
Inhomogeneous rifting structure in the northern Okinawa Trough, an active backarc basin southwest of the Japan Islands Chiaki Okada, Azusa Nishizawa, Kentaro Kaneda, Mitsuhiro Oikawa, Daishi Horiuchi, Yukari Fujioka, Kosaku Arai	J08-P-16
Mantle heterogeneity in the oceanic lithosphere of the southwest sub-basin, South China Sea, from the wide-angle seismic and the gravimetric model Chuanchuan Lu, Tianyao Hao, Jian Lin	J08-P-17
The 3-D velocity structure of the 2008 Taoyuan Earthquake Sequence in Kaohsiung, Taiwan Min Hung Shih, Bor-Shouh Huang	J08-P-18
The shallow structure of Tatun Volcano Group from residual gravity and magnetic data Hsien-Hsiang Hsieh, Benjamin Fong Chao, Horng-Yuan Yen	J08-P-19

J09. Geodesy and seismology general contributions

Session: **J09-1**
Session title: Geodesy and seismology general contributions I
Type: Oral
Date: Tuesday, August 1, 2017
Time: 13:30 - 15:00
Room: Intl Conf Room (301)
Chairs: Tomokazu Kobayashi (Geospatial Information Authority of Japan)
Takeo Ito (Nagoya University)

Time	Title	Program No.
13:30	**Normal-faulting earthquakes in the northern area of Ibaraki Prefecture, Japan in 2011 and 2016 - Duplicate events detected by InSAR observations -** Tomokazu Kobayashi	J09-1-01
13:45	**Recent findings on dual tsunami sources: November 1945 Makran (NW Indian Ocean) and December 1908 Messina (Italy) tsunamis** Mohammad Heidarzadeh, Kenji Satake, Sebastian Krastel, David Tappin	J09-1-02
14:00	**Determining the Kaki Earthquake properties with using InSAR Method, 2013, Kaki, southwest Iran** Ramak Heidari, Maryam Sedghi, Mohamadreza Gheitanchi	J09-1-03
14:15	**Tsunami source of the 1979 Tumaco Earthquake estimated from historical tide gauge records and geodetic data** Bruno Adriano, Yushiro Fujii, Masahiro Yoshimoto, Shunichi Koshimura	J09-1-04
14:30	**Crustal blocks motion model and interplate coupling in Colombia based on GNSS observation network (GEORED)** Takeo Ito, Hector Mora Paez, Juan Ramon Pelaez Gaviria, Takeshi Sagiya	J09-1-05
14:45	**Rise Time of Coseismic Tectonic Deformation during Megathrust Earthquakes, as estimated from Observed Low-Frequency Acoustic-Gravity Waves** Takeshi Mikumo	J09-1-06

Session: **J09-2**
Session title: Geodesy and seismology general contributions II
Type: Oral
Date: Tuesday, August 1, 2017
Time: 16:30 - 18:00
Room: Intl Conf Room (301)
Chairs: Koji Masuda (Geological Survey of Japan, AIST)
Ryohei Sasajima (Nagoya University)

Time	Title	Program No.
16:30	**Resolution analysis for earthquake kinematics inversion** Josue Tago Pacheco, Ludovic Metivier, Romain Brossier, Victor Cruz Atienza, Jean Virieux	J09-2-01
16:45	**Effect of frictional properties of minerals in the crust on the depth of seismic faulting** Koji Masuda	J09-2-02
17:00	**Flexural mechanics and curvature evolution of the bending-unbending transition zone of subducting oceanic lithosphere** Ryohei Sasajima, Takeo Ito	J09-2-03
17:15	**Vertical Deformation Following Groundwater Drawdown by Excavating of 500 m Depth Shafts in Granite in Mizunami, central Japan in 2004-2016** Fumoako Kimata, Tasuhiro Asai, Ryo Honda, Hiroshi Ishii	J09-2-04
17:30	**ISC-EHB: Reconstructing the EHB Earthquake Database** Jennifer Weston, Bob Engdahl, Domenico Di Giacomo, James Harris, Dmitry Storchak	J09-2-05
17:45	**The ISC Bulletin and the derivative datasets for Geoscience research** Dmitry Storchak, Domenico Di Giacomo, James Harris, Konstantinos Lentas, Jennifer Weston	J09-2-06

Session: **J09-3**
Session title: Geodesy and seismology general contributions III
Type: Oral
Date: Thursday, August 3, 2017
Time: 16:30 - 18:00
Room: Room 401
Chairs: Koshun Yamaoka (Nagoya University)
Shuhei Tsuji (Nagoya University)

Time	Title	Program No.
16:30	**Temporal change in transfer function using ACROSS associated with magma intrusive event in 2015 in Sakurajima volcano, Japan** Koshun Yamaoka, Masashi Watanabe, Hiroki Miyamachi, Takahiro Kunitomo, Toshiki Watanabe, Hiroshi Yakiwara, Yuta Maeda, Takeshi Tameguri, Ryoya Ikuta, Masato Iguchi	J09-3-01

16:45	**Secular and co-seismic velocity changes in Tokai region detected by ACROSS** Shuhei Tsuji, Ryoya Ikuta, Koshun Yamaoka, Takahiro Kunitomo, Toshiki Watanabe, Yasuhiro Yoshida, Akio Katsumata	J09-3-02
17:00	**Tracking of water level of dam reservoir by using a broadband seismometer** Kazunari Nawa, Takeshi Kimura	J09-3-03
17:15	**About 38mHz (26 s) oscillation in northeastern Japan after the 2011 Tohoku megathrust earthquake** Yuta Mitsui, Kosuke Heki	J09-3-04
17:30	**Different Application of Ultrasonic Underwater Particle-Tracing Probes at Deep Ocean Floor** Dursun Acar, Bedri Alpar, Tuncay Taymaz, Seda Yolsal Cevikbilen, Sinan Ozeren, Denizhan Vardar, Tuna Eken, Namik Cagatay, Sebnem Elbek, Erol Sari, K.Kadir Eris	J09-3-05

Session: **J09-4**
Session title: Geodesy and seismology general contributions IV
Type: Oral
Date: Friday, August 4, 2017
Time: 08:30 - 10:00
Room: Room 401
Chairs: Jan Michalek (University of Bergen)
Przemyslaw Dykowski (Institute of Geodesy and Cartography)

Time	Title	Program No.
08:30	**CURRENT IMPORTANCE OF THE CHILEAN NATIONAL GEODESIC NETWORK IN A COUNTRY SUBJECT TO EARTHQUAKES** Cristian Iturriaga, Hector Parra, Carlos Prado	J09-4-01
08:45	**Estimation of coupling ratio on subducting plate interface and block boundary in southwest Japan using MCMC method** Hiroshi Kimura, Takeo Ito, Keiichi Tadokoro	J09-4-02
09:00	**EPOS-Norway - GNSS and seismological data from Norway in a common e-infrastucture** Jan Michalek, Kuvvet Atakan, Xiaoliang Wang, Christian Ronnevik, Tormod Kvaerna, Michael Roth, Halfdan Pascal Kierulf, Tor Langeland, Ove Daae Lampe	J09-4-03
09:15	**Expanding seismic surface waves measurements towards low periods with gravity measurements** Przemyslaw Dykowski, Marek Grad, Andrzej Krankowski, Jan Krynski, Tomasz Olszak, Marcin Polkowski, Marcin Rajner, Marcin Sekowski, Monika Wilde-Piorko	J09-4-04
09:30	**Withdrawn**	J09-4-05
09:45	**Sampling Frequency – the key to capturing anomalies of groundwater before earthquakes** Fuqiong Huang, Youliang Shu, Shimin Zhang	J09-4-06

Session: **J09-5**
Session title: Geodesy and seismology general contributions V
Type: Oral
Date: Friday, August 4, 2017
Time: 10:30 - 12:00
Room: Room 401
Chairs: Hiroshi Munekane (Geospatial Information Authority of Japan)
Ting Chen (Wuhan University)

Time	Title	Program No.
10:30	**A prototype system for PPP kinematic positioning of Japanese GEONET stations** Hiroshi Munekane	J09-5-01
10:45	**Detection and Measurement of Land Subsidence Using InSAR and GPS in the Sabana de Bogota, Colombia, South America** Hector Mora-Paez, Takeshi Sagiya, Takeo Ito, Estelle Chaussard, Shimon Wdowinski	J09-5-02
11:00	**Surface deformation of a mud volcano in Azerbaidzhan detected by InSAR and its source medeling** Kento Iio, Masato Furuya	J09-5-03
11:15	**Crustal deformation and a fault model of the 2016 central Tottori prefecture earthquake** Hiroshi Yarai, Tomokazu Kobayashi, Yu Morishita, Yohei Hiyama, Yuji Miura	J09-5-04
11:30	**Two methods of three-dimensional surface deformation field derivation with the integration of InSAR and GNSS measurements** Haipeng Luo, Ting Chen	J09-5-05
11:45	**Using TerraSAR-X Interferometry and GPS to study slowly moving landslide in a vegetated terrain** Sara Mirzaee, Mahdi Motagh, Bahman Akbari, Mahmud Haghshenas Haghighi, Sigrid Roessner, Hans.Ulrich Wetzel	J09-5-06

Session: **J09-6**
Session title: Geodesy and seismology general contributions VI
Type: Oral
Date: Friday, August 4, 2017
Time: 13:30 - 15:00
Room: Room 401
Chairs: Raju Sarkar (College of Science and Technology, Royal University of Bhutan)
Meen Bahadur Poudyal Chhetri (Institute of Crisis Management Studies)

Time	Title	Program No.
13:30	**Withdrawn**	J09-6-01

13:45	**Geodetic and Seismological Risk of Operation of Nuclear Power Plants in Japan** Shuzo Takemoto	J09-6-02
14:00	**Issues of Resettlement in Context of Housing - Lessons Learnt in Nepal after 2015 Gorkha Earthquake** Raju Sarkar, Ritesh Kurar	J09-6-03
14:15	**Gorkha, Nepal Earthquake 2015 – Causes, Consequences, Socio-Economic Impacts, Lessons Learned and Way Forward** Meen Bahadur Poudyal Chhetri	J09-6-04

Session: **J09-P**
Type: Poster
Date: Thursday, August 3/ Friday, August 4, 2017
Time: 15:30 - 16:30 / 15:00 - 16:00
Room: Shinsho Hall

Title	Program No.
InSAR analysis all over Japan by ALOS-2 (Daichi-2) / PALSAR-2 data Yuji Miura, Basara Miyahara, Hiroyuki Nakai, Masaki Honda, Yasuaki Kakiage, Yu Morishita	J09-P-01
EPOS-Norway – Integration of Norwegian geoscientific data into a common e-infrastructure Jan Michalek, Kuvvet Atakan, Xiaoliang Wang, Christian Ronnevik, Karen Tellefsen, Tor Langeland, Ove Daae Lampe	J09-P-02
Comparison of Superconducting and Spring Gravimeters at the Mizusawa VLBI Observatory of the National Astronomical Observatory of Japan Satoshi Miura, Tae-Hee Kim, Hiroshi Ikeda, Yoshiaki Tamura	J09-P-03
Exponential pore pressure/ groundwater level changes associated with the 2016 Kumamoto Earthquake (Mj7.3) observed at Tono region, central Japan Yasuhiro Asai, Hiroshi Ishii, Osamu Murakami	J09-P-04
A possible mechanism of Omori-Utsu'slawthroughan example of the great Tangshan earthquake Caibo Hu, Yongen Cai	J09-P-05
Updating Hypocenter Location around Indonesia Region Derived from 3D Seismic Velocity Structure: Time Period of April 2009-July 2016 Andri Dian Nugraha, Hasbi Ash Shiddiqi, Sri Widiyantoro, Shindy Roslia, Mohamad Ramdhan, Wandono Wandono, Daryono Daryono, Samsul Wiyono, Mahsyur Irsyam	J09-P-06
Aftershock Observation of Mw 6.5 Pidie Jaya, Aceh, Indonesia Earthquake: Preliminary Results Andri Dian Nugraha, Muksin Umar, Muzli Muzli, Zulfakriza Zulhan, Riskiray Ryannugroho, Kadek Hendrawan Palgunadi, Supendi Pepen, Sri Widiyantoro, Nanang T Puspito, Wahyu Triyoso, Daryono Daryono, Kemal Erbas, Rachmat Sule, Irwan Meilano, Mahsyur Irsyam, Philippe Jousset	J09-P-07
Estimation of the seismic-motion-generated changes in permeability structure nearby a fault fracture zone by means of a groundwater migration model Atsushi Mukai, Shigeaki Otsuka, Yoichi Fukuda	J09-P-08
INTAROS – INTEGRATED ARCTIC OBSERVATION SYSTEM P. H. Voss, T. Dahl-Jensen, M. B. Sorensen, P. Knudsen, O. B. Andersen, S. A. Khan	J09-P-09
Simulation of Hayabusa2 crossover orbit analysis using laser altimeter data Keiko Yamamoto, Koji Matsumoto, Toshimichi Otsubo, Noriyuki Namiki, Hayabusa2 Astrodynamics Team	J09-P-10
GOCE User Toolbox and Tutorial Per Knudsen, Jerome Benveniste	J09-P-11

IAG Symposia

IAG Reference Frames

G01. Reference frames

Session: **G01-1**
Session title: International terrestrial reference frame
Type: Oral
Date: Wednesday, August 2, 2017
Time: 08:30 - 10:00
Room: Room 502
Chairs: Geoffrey Blewitt (University of Nevada, Reno)
Johannes Böhm (Technische Universität Wien)

Time	Title	Program No.
08:30	**Status of the International Terrestrial Reference Frame: ITRF2014 and future developments** Zuheir Altamimi, Paul Rebischung, Laurent Metivier, Xavier Collilieux, Kristel Chanard	G01-1-01
08:45	**Analysis of the seasonal parameters estimated in the ITRF2014 processing** Xavier Collilieux, Zuheir Altamimi, Paul Rebischung, Laurent Metivier, Kristel Chanard	G01-1-02
09:00	**JTRF2014: A Time Series Representation of the ITRF** Richard Gross, Claudio Abbondanza, T. Mike Chin, Mike Heflin, Jay Parker, Xiaoping Wu	G01-1-03 invited
09:15	**DGFI-TUM analysis and scale investigations of the latest terrestrial reference frame realizations** Mathis Blossfeld, Detlef Angermann, Manuela Seitz	G01-1-04 invited
09:30	**IGS14/igs14.atx: Implications for IGS products** Paul Rebischung, Ralf Schmid, Xavier Collilieux, Zuheir Altamimi	G01-1-05 invited
09:45	**The status of DORIS in light of ITRF2014** Frank Lemoine, Laurent Soudarin, Guilhem Moreaux, Hugues Capdeville, Jean-Michel Lemoine, Pascale Ferrage, Jerome Saunier, Denise Dettmering, Marek Ziebart, Pascal Willis, Patrick Michael	G01-1-06

Session: **G01-2**
Session title: Celestial reference frame and VLBI
Type: Oral
Date: Wednesday, August 2, 2017
Time: 10:30 - 12:00
Room: Room 502
Chairs: Zuheir Altamimi (Institut National de l'Information Géographique et Forestière)
Geoffrey Blewitt (University of Nevada, Reno)

Time	Title	Program No.
10:30	**Progress towards the third realisation of the International Celestial Reference Frame** Patrick Charlot	G01-2-01 invited
10:45	**Testing of special relativity with geodetic VLBI** Oleg Titov, Hana Krasna	G01-2-02
11:00	**Correlated atmosphere noise in VLBI analysis** Hana Krasna, John Gipson	G01-2-03
11:15	**Ray-traced delays and global reference frames with geodetic VLBI** David Mayer, Hana Krasna, Daniel Landskron, Johannes Boehm	G01-2-04
11:30	**Space tie satellites for millimetre geodesy – a VLBI perspective** Lucia Plank, Jamie McCallum, Andreas Hellerschmied, Johannes Boehm, Jing Sun	G01-2-05

Session: **G01-3**
Session title: Reference frame methodology and implementation
Type: Oral
Date: Wednesday, August 2, 2017
Time: 13:30 - 15:00
Room: Room 502
Chairs: Johannes Böhm (Technische Universität Wien)
Zuheir Altamimi (Institut National de l'Information Géographique et Forestière)

Time	Title	Program No.
13:30	**Robust realization of a no-net rotation reference frame on a deforming tectonic plate** Geoffrey Blewitt, Corne Kreemer, William C. Hammond	G01-3-01
13:45	**Three Dimensional Strain-Rate Field from Geodetic Measurements on the Surface** Arturo Villiger, Alain Geiger, Fabian Neyer, Elmar Brockmann	G01-3-02
14:00	**Spatially correlated ground deformation models in reference frame estimation** T. Mike Chin, Claudio Abbondanza, Richard Gross, Mike Heflin, Jay Parker, Benedikt Soja, Xiaoping Wu	G01-3-03
14:15	**Differential station coordinates changes (velocities) versus coordinate differences (epoch solutions) for realising the time dependence in ITRF** Hermann Drewes	G01-3-04

14:30	**Kalman filter terrestrial reference frame solutions based on time-variable process noise** Benedikt Soja, Richard Gross, Claudio Abbondanza, Toshio Chin, Michael Heflin, Xiaoping Wu, Kyriakos Balidakis, Tobias Nilsson, Susanne Glaser, Maria Karbon, Robert Heinkelmann, Harald Schuh	G01-3-05
14:45	**Variant and Invariant Properties of Coordinate Transformation** Gilad Even-Tzur	G01-3-06

Session: **G01-4**
Session title: Combination and co-location of space geodetic techniques
Type: Oral
Date: Wednesday, August 2, 2017
Time: 16:30 - 18:00
Room: Room 502
Chairs: Geoffrey Blewitt (University of Nevada, Reno)
Johannes Böhm (Technische Universität Wien)

Time	Title	Program No.
16:30	**E-GRASP/Eratosthenes: a satellite mission for improving the Terrestrial Reference Frame** Markus Rothacher, Richard Biancale, E-GRASP Science Team	G01-4-01 invited
16:45	**Lunar Laser Ranging as tie between terrestrial and space reference systems** Franz Hofmann, Juergen Mueller	G01-4-02
17:00	**Double-Differences Over Time for Space Geodesy Techniques with GNSS Satellites and Lunar Laser Reflectors** Drazen Svehla, Markus Rothacher	G01-4-03
17:15	**Multi-Year Analysis of GNSS Local Ties at Fundamental Sites** Ivan Dario Herrera Pinzon, Markus Rothacher	G01-4-04
17:30	**Non-linear Geocenter Motion from Multi-Technique Geocentric Station Coordinate Time Series in a Terrestrial Reference Frame on Dynamic Earth and GRACE Gravity Data** Xiaoping Wu, Juergen Kusche, Felix Landerer	G01-4-05

Session: **G01-5**
Session title: Regional reference frames and networks I
Type: Oral
Date: Thursday, August 3, 2017
Time: 08:30 - 10:00
Room: Room 502
Chairs: Zuheir Altamimi (Institut National de l'Information Géographique et Forestière)
Geoffrey Blewitt (University of Nevada, Reno)

Time	Title	Program No.
08:30	**The Geocentric Datum of Australia 2020** John Dawson, Michael Moore, Guorong Hu, Craig Harrison, Nicholas Brown	G01-5-01 invited
08:45	**Continuing and Emerging Roles of National GNSS CORS as Geodetic Infrastructure: Case study of GEONET in Japan** Hiromichi Tsuji, Yuki Hatanaka, Yohei Hiyama, Satoshi Kawamoto, Tomoaki Furuya, Basara Miyahara, Toshihiro Yahagi, Tatsuya I. Yamashita, Hiroshi Munekane	G01-5-02 invited
09:00	**Japan-1sec1cm accuracy -Geodetic Network Adjustment** Hiroyuki Hasegawa	G01-5-03
09:15	**Restoring the New Zealand Geodetic Datum after the 2016 Kaikoura Earthquake** Chris Crook, Nic Donnelly, Ian Hamling	G01-5-04
09:30	**SHRF16: A Stable Houston Reference Frame for Faulting and Subsidence Study in the Houston Metropolitan Area, Texas, U.S.A.** Guoquan Wang, Timothy Kearns, Hanlin Liu, Eleanor Dietz, Vasilios Tsibanos	G01-5-05
09:45	**Station calibration of the SWEPOS GNSS Network** Martin Lidberg, Per Jarlemark, Jan Johansson, Kent Ohlsson, Lotti Jivall	G01-5-06

Session: **G01-6**
Session title: Regional reference frames and networks II
Type: Oral
Date: Thursday, August 3, 2017
Time: 10:30 - 12:00
Room: Room 502
Chairs: Johannes Böhm (Technische Universität Wien)
Zuheir Altamimi (Institut National de l'Information Géographique et Forestière)

Time	Title	Program No.
10:30	**Foundation CORS: Underpinning a New Positioning Framework** Daniel Roman, Kevin Choi	G01-6-01
10:45	**ITRF2014/IGS14 European Regional Densification Using the EPN Long Term Daily SINEX product** Ambrus Kenyeres, Tomasz Liwosz, Juliette Legrand, Christof Voelksen, Andrzej Araszkiewicz, Jan Dousa, Daniel Ineichen, Elmar Brockman, Marcellino Valdes	G01-6-02

11:00	**Near real time modelling of coseismic and post-seismic deformation for NetworkRTK applications** Paul Denys, Chris Pearson	G01-6-03
11:15	**New Zealand Vertical Datum 2016, an improved gravimetric reference frame** Matt Amos, Rachelle Winefield	G01-6-04
11:30	**The leveling net adjustment with a correction for altitude variations obtained from GNSS-based control stations data** Tatsuya Yamashita, Takashi Toyofuku, Kensuke Kokado, Satoru Nemoto, Hiroyuki Tanaka, Yu Morishita	G01-6-05
11:45	**Precise leveling, tide gauge and satellite altimetry for definition of Saudi Arabia National Reference Frame (SANVRF) – Jeddah'2014** Rossen Grebenitcharsky, George Vergos, Othman Al-Kherayef, Bandar Al-Musulmani, Rene Forsberg	G01-6-06

Session: **G01-P**
Type: Poster
Date: Tuesday, August 1/ Wednesday, August 2, 2017
Time: 15:30 - 16:30
Room: Shinsho Hall

Title	Program No.
Estimation of Post Seismic Deformation Model Using Monte Carlo Method Takayuki Miyazaki	G01-P-01
Impact of different TRF station coordinate parameterizations on VLBI combined EOP Sabine Bachmann, Daniela Thaller	G01-P-02
Investigations on scale factor from VLBI observations Hana Krasna, Oleg Titov, Igor Surkis, Dmitrii Ivanov, Alexey Melnikov	G01-P-03
IGRS2013 Deformation Model: Linear Velocities and Co-seismic Deformation Susilo Susilo, Hasanuddin Z. Abidin, Irwan Meilano, Endra Gunawan, Benyamin Sapiie, Dina A. Sarsito, Heri Andreas, Dhota Pradipta, Antonius B. Wijanarto, Joni Efendi	G01-P-04
Investigating the performance of the GNSS-SLR co-location on-board GNSS satellites for reference frame determination Sara Bruni, Paul Rebischung, Susanna Zerbini, Zuheir Altamimi, Maddalena Errico, Efisio Santi	G01-P-05
Developing a semi-dynamic datum for Nepal after the April 25 Gorka Earthquake Christopher Pearson, Niraj Manandhar, Paul Denys	G01-P-06
Assimilation of satellite altimetry, gravity, leveling and GOCE data for the definition of the Saudi Arabia National Reference Frame (SANVRF) George S. Vergos, Rossen Grebenitcharsky, Dimitrios A. Natsiopoulos, Othman Al-Kherayef, Bandar Al-Musulmani	G01-P-07
Assessment of displacement models used in time-dependent transformations. The particular case of California. Daphne Lercier	G01-P-08
Verification of accelerated vertical crustal movements in the Tohoku region prior to the 2011 Tohoku-Oki earthquake by reanalysis of GEONET data using Precise Point Positioning Yo Kawashima, Takeshi Sagiya	G01-P-09
Modeling vertical displacements at stations of the Geocentric Reference System for the Americas (SIRGAS) due to hydrological load Claudio Brunini, Laura Sanchez, Romina Galvan, Hermann Drewes, Mauricio Gende	G01-P-10
SIRGAS: the core geodetic infrastructure in Latin America and the Caribbean Victor Cioce, Laura Sanchez, Marco Aurelio de Almeida, Jose Guillermo Gasca, Hernan Guagni, Alfonso Morillo, Hector Parra, Oscar Rodriguez, Norbertino Suarez, Jose Francisco Valverde	G01-P-11
On adopting a realization of the EVRS as the national height system in mainland Portugal Manuela Vasconcelos, Ana Carla Bernardes, Helena Ribeiro	G01-P-12
IDS DORIS analysis centre Geodetic Observatory Pecny: development and research Petr Stepanek, Michal Buday, Vratislav Filler	G01-P-13
Assessment of the impact of session types, observation time span, network geometry and -size on the estimation of radio source coordinates Maria Karbon, Santiago Belda, Robert Heinkelmann, Tobias Nilsson, Harald Schuh	G01-P-14

IAG Gravity field

G02. Static gravity field

Session: **G02-1**
Session title: Theory and methods
Type: Oral
Date: Monday, July 31, 2017
Time: 08:30 - 10:00
Room: Room 502
Chairs: Pavel Novak (University of West Bohemia, Pilsen)
Michael Schmidt (Technical University of Munich)

Time	Title	Program No.
08:30	**Rectangular rotation of spherical harmonic expansion of arbitrary high degree and order** Toshio Fukushima	G02-1-01
08:45	**Gravitational contribution of a spherical tesseroid by means of mapping it into sectors of spherical band** Anna Maria Marotta, Riccardo Barzaghi	G02-1-02
09:00	**Boundary complexity in classical and variational concepts of solving geodetic boundary value problems** Petr Holota, Otakar Nesvadba	G02-1-03
09:15	**MRR and LSC – A mutual benefit for advanced regional gravity field modeling** Michael Schmidt, Verena Lieb, Martin Willberg, Roland Pail	G02-1-04
09:30	**Properties and applications of gravity-field curvatures in geodesy** Pavel Novak	G02-1-05
09:45	**Direct topographical effect on the airborne gravity disturbance for Helmert's second method of condensation** Jianliang Huang, Marc Veronneau, John W. Crowley	G02-1-06

Session: **G02-2**
Session title: Gravimetry
Type: Oral
Date: Monday, July 31, 2017
Time: 10:30 - 12:00
Room: Room 502
Chairs: Yoichi Fukuda (Kyoto University)
Leonid Vitushkin (D.I. Mendeleyev Institute for Metrology)

Time	Title	Program No.
10:30	**Closing the GOCE polar gap in Antarctica from airborne gravity and derived gravity gradients** Rene Forsberg, Arne Olesen, Tom Jordan, Fausto Ferraccioli, Kenichi Matsuoka, Hasan Yildiz	G02-2-01
10:45	**A Comparison of Airborne Vector Gravimeter Measurements with the NOAA Geoid Slope Validation Survey 2014** Stephen Ferguson, Yan Ming Wang, Stefan Elieff, Simon Holmes, Xiaopeng Li, Kevin Ahlgren, Ruifeng Xi	G02-2-02
11:00	**Evaluation of the contribution of optical clocks to gravity field modelling** Juergen Mueller, Hu Wu	G02-2-03
11:15	**Cold Atom Interferometers Used In Space (CAIUS) for measuring the Earth's gravity field** Olivier Carraz, Luca Massotti, Christian Siemes, Roger Haagmans, Linda Mondin, Pierluigi Silvestrin, Michael Kern	G02-2-04
11:30	**An innovative tool for marine Gravimetry: results of a survey with a cold atom gravimeter** Marie-Francoise Lalancette, Didier Rouxel, Yannick Bidel, Alexandre Bresson, Nassim Zahzam, Sylvain Lucas, Cedric Blanchard, Gildas Delachienne	G02-2-05
11:45	**Development of a high-accuracy gravity measurement system onboard a moving autonomous underwater vehicle** Takemi Ishihara, Masanao Shinohara, Akito Araya, Tomoaki Yamada, Toshihiko Kanazawa, Hiromi Fujimoto, Satoshi Tsukioka, Shinobu Omika, Kenji Uehira, Masashi Mochizuki, Tsuyoshi Yoshiume, Kokichi Iizasa	G02-2-06

Session: **G02-3**
Session title: Regional gravity and geoid
Type: Oral
Date: Tuesday, August 1, 2017
Time: 08:30 - 10:00
Room: Room 502
Chairs: Hussein Abd-Elmotaal (Minia University)
Riccardo Barzaghi (Politecnico di Milano)

Time	Title	Program No.
08:30	**An improved gravimetric geoid model for Japan based on the Stokes–Helmert scheme with a deterministically modified Stokes' kernel** Koji Matsuo, Takayuki Miyazaki, Basara Miyahara, Yuki Kuroishi	G02-3-01
08:45	**AFRGDB_V2.0: The Gravity Database for the Determination of the Earth's Mathematical Surface in Africa** Hussein Abd-Elmotaal, Kurt Seitz, Norbert Kuehtreiber, Bernhard Heck	G02-3-02
09:00	**Terrestrial gravity data for a new Russian quasigeoid model** Ilya Oshchepkov	G02-3-03
09:15	**DRUKGEOID15: The new geoid of Bhutan** Machiel Bos, Rui Fernandes, Kinzang Thinley, Jamphel Gyeltshen	G02-3-04

09:30	**Combining airborne and terrestrial gravity data to improve the geoid model in Brazil** Gabriel do Nascimento Guimaraes, Ana Cristina Oliveira Cancoro de Matos, Denizar Blitzkow	G02-3-05
09:45	**The gravimetric component of AUSGeoid2020 and its error model** Sten Claessens, Jack McCubbine, Will Featherstone, Nick Brown	G02-3-06

Session: **G02-4**
Session title: Gravity field modelling and applications
Type: Oral
Date: Tuesday, August 1, 2017
Time: 10:30 - 12:00
Room: Room 502
Chairs: Roland Pail (Technical University of Munich)
Dan Roman (National Oceanic and Atmospheric Administration)

Time	Title	Program No.
10:30	**NGS Annual GRAV-D enhanced Geoid Models – xGEID2017: What is new and the results** Yan Ming Wang, Simon Holmes, Xiaopeng Li, Kevin Ahlgren	G02-4-01
10:45	**High-resolution modelling of the static gravity field from the GOCE gravity gradients using meshless boundary collocation techniques** Robert Cunderlik	G02-4-02
11:00	**Satellite gravimetry from tracking: do it right, and for better** Peiliang Xu	G02-4-03
11:15	**Evaluation of Dynamic Heights on the Great Lakes** Daniel Roman, Xiaopeng Li	G02-4-04
11:30	**Results from GOCE++ Dynamical Coastal Topography and tide gauge unification using altimetry and GOCE** Ole Andersen, Per Knudsen, Karina Nielsen, Chris Hughes, Rory Bingham, Michael Kern, Guy Woppelmann, Mederic Garvelle, Luciana Fenoglio-Marc	G02-4-05
11:45	**A new OGMOC mean dynamic topography model – DTU17MDT** Per Knudsen, Ole Andersen, Thomas Gruber, Thomas Fecher, Nikolai Maximenko	G02-4-06

Session: **G02-5**
Session title: Altimetry and marine geoid
Type: Oral
Date: Tuesday, August 1, 2017
Time: 13:30 - 15:00
Room: Room 502
Chairs: Xiaoli Deng (University of Newcastle)
Per Knudsen (Technical University of Denmark)

Time	Title	Program No.
13:30	**The GEOMED2 project: Geoid estimation in the Mediterranean Area** Riccardo Barzaghi, Georgios Vergos, Alberta Albertella, Daniela Carrion, Ilias N. Tziavos, Vassilios N. Grigoriadis, Dimitrios A. Natsiopoulos, Sean Bruinsma, Sylvain Bonvalot, Lucia Seoane, Franck Reinquin, Marie-Francoise Lequentrec-Lalancette, Corinne Salaun, Pascal Bonnefond, Per Knudsen, Ole Andersen, Mehemet Simav, Hasan Yildiz, Tomislav Basic, Matei Varga, Olga Bjelotomic	G02-5-01
13:45	**Geomed2: gravimetric versus combined geoid model** Sean Bruinsma, Sylvain Bonvalot, Franck Reinquin, Lucia Seoane	G02-5-02
14:00	**Overview of the FAMOS efforts to improve the Baltic Sea geoid model by new marine gravity measurements** Jonas Agren, Joachim Schwabe, Gabriel Strykowski, Rene Forsberg, Gunter Liebsch, Christoph Foerste, Franz Barthelmes, Mirjam Bilker-Koivula, Artu Ellmann, Silja Maerdla	G02-5-03
14:15	**The altimetry-derived marine gravity field for enhanced geodetic and geological studies around Taiwan** Xiaoli Deng, Cheinway Hwang, Ole B. Andersen, Mark G. Stewart	G02-5-04
14:30	**Towards a new Global marine gravity field based on SARAL/ ALtiKa, Jason-1 and Cryosat-2 Geodetic Missions** Ole Andersen, Per Knudsen, Carsten Ludwidsen, Adil Abulaitijiang	G02-5-05
14:45	**Comparing marine gravity and satellite altimetry in the Mediterranean area** R. Barzaghi, D. Carrion, C. De Gaetani, A. Albertella, G. Vergos, A. Abulaitijiang, O. Andersen, P. Knudsen, I. N. Tziavos, M.-F. Lequentrec-Lalancette, C. Salaun	G02-5-06

Session: **G02-6**
Session title: Height systems
Type: Oral
Date: Tuesday, August 1, 2017
Time: 16:30 - 18:00
Room: Room 502
Chairs: Jonas Ågren (KTH Royal Institute of Technology)
Michael Sideris (The University of Calgary)

Time	Title	Program No.
16:30	**Establishing an IHRS reference station** Georgios S. Vergos, Ilias N. Tziavos	G02-6-01
16:45	**The permanent tide and the International Height Reference System IHRS** Jaakko Makinen	G02-6-02
17:00	**On the practical realization of the fixed GBVP approach for a unification of height systems in Central Europe** Thomas Grombein, Lucas Porz, Kurt Seitz, Bernhard Heck	G02-6-03
17:15	**Height datum unification by patching local geoid models** Mirko Reguzzoni, Georgios S. Vergos, Giovanna Sona, Riccardo Barzaghi, Ilias N. Tziavos, Alberta Albertella, Daniela Carrion, Carlo I. De Gaetani, Lorenzo Rossi	G02-6-04
17:30	**NGS' Gravity for the Redefinition of the American Vertical Datum Project Update and Developments** Vicki Childers, Monica Youngman, Theresa Damiani	G02-6-05
17:45	**SAR and SARIN contribution to Height System Unification in Greece** Ourania Altiparmaki, Georgios S. Vergos, Ole Andersen	G02-6-06

Session: **G02-P**
Type: Poster
Date: Tuesday, August 1/ Wednesday, August 2, 2017
Time: 15:30 - 16:30
Room: Shinsho Hall

Title	Program No.
Comparison of spherical and spheroidal harmonics for ultra-high-resolution global gravity modelling Sten Claessens	G02-P-01
What is the real meaning of the Secondary Indirect Effect? Petr Vanicek, Robert Kingdon, Peter Vajda, Jianliang Huang	G02-P-02
Regional geoid computation by Least Squares Modified Hotine's formula with Additive Corrections Silja Mardla, Artu Ellmann, Jonas Agren, Lars E. Sjoberg	G02-P-03
Establishment of the new Japan Gravity Standardization Network (JGSN) 2016 Kenji Yoshida, Toshihiro Yahagi	G02-P-04
Local hydrological disturbances on gravity revealed by simultaneous observation with a gPhone and a superconducting gravimeter Kazuma Mochizuki, Kazunari Nawa, Yuichi Imanishi	G02-P-05
Combined use of a superconducting gravimeter and Scintrex gravimeters for hydrological correction of precise gravity measurements - A superhybrid gravimetry Yuichi Imanishi, Kazunari Nawa, Yoshiaki Tamura, Hiroshi Ikeda, Ryo Honda, Takashi Okuda, Makoto Okubo	G02-P-06
Application of Local Functions in Airborne Gravimetry for Regional Geoid Improvement Xiaopeng Li, Yan Ming Wang	G02-P-07
Gross-Error Detection using Artificial Neural Networks for the Gravity Database in Egypt Hussein Abd-Elmotaal, Mostafa Ashry	G02-P-08
Topographic correction and covariance function modelling over the coastal regions Adili Abulaitijiang, Riccardo Barzaghi, Ole Baltazar Andersen, Per Knudsen	G02-P-09
Geoid and Moho-depth modeling in Cyprus Ilias N. Tziavos, Georgios S. Vergos, Vassilios N. Grigoriadis, Efstratios Stylianidis	G02-P-10
Preliminary Results of Mass Redistribution from Repeated Campaigns of Precision Gravimetry in the Wandan Mud Volcano, Taiwan Kai-Chien Cheng, Ling-Ho Chung, Ricky Kao, Yuan-Hsi Lee	G02-P-11
Determination of Moho depth models for Greece using different gravity inversion methods Vassilios Grigoriadis, Ilias Tziavos	G02-P-12
Towards the best GOCE gravity gradients Christian Siemes, Roger Haagmans, Michael Kern	G02-P-13
GOCE and beyond: Status and activities Rune Floberghagen, Roger Haagmans, Michael Kern	G02-P-14
Evaluation of the gravity and altimetry data in the Baltic Sea region and computation of the new quasi-geoid model for the territory of Poland Adam Lyszkowicz, Joanna Kuczynska-Siehien	G02-P-15
PCA and along track filtering of Crysoat2 SSH for DOT modeling in the Mediterranean Dimitrios Natsiopoulos, Georgios Vergos, Ilias Tziavos	G02-P-16

The GEOMED2 project: Multi-resolution aspects and aliasing in topographic effects for geoid and gravity determination G02-P-17
Riccardo Barzaghi, Georgios S. Vergos, Alberta Albertella, Daniela Carrion, Ilias N. Tziavos, Vassilios N. Grigoriadis, Dimitrios A. Natsiopoulos, Sean Bruinsma, Lucia Seoane, Franck Reinquin, Marie-Françoise Lequentrec-Lalancette, Corinne Salaun, Pascal Bonnefond, Per Knudsen, Ole Andersen, Mehmet Simav, Hasan Yildiz, Tomislav Basic, Matej Varga, Olga Bjelotomic, Antonio J. Gil

The GEOMED2 project: Geoid and circulation in the Mediterranean Sea G02-P-18
R. Barzaghi, G. S. Vergos, A. Albertella, D. Carrion, I. N. Tziavos, V. N. Grigoriadis, D. A. Natsiopoulos, S. Bruinsma, S. Bonvalot, L. Seoane, F. Reinquin, M.-F. Lequentrec-Lalancette, C. Salaun, P. Bonnefond, P. Knudsen, O. Andersen, M. Simav, H. Yildiz, T. Basic, M. Varga, O. Bjelotomic

CryoSat-2-only gravity model of the Arctic ocean: case study in Greenland Sea G02-P-19
Adili Abulaitijiang, Ole Baltazar Andersen, Per Knudsen

Local vertical datum validation through the incorporation of GOCE variance and covariance information G02-P-20
Vassilios D. Andritsanos, Vassilios N. Grigoriadis, Georgios S. Vergos, Thomas Gruber, Thomas Fecher

Influence of the atmosphere on the evaluation of the geopotential from global models on the surface of the Earth: implications for the W0 and the realization of the International Height Reference System G02-P-21
Jaakko Makinen

International Digital Elevation Model Service (IDEMS): A Revived IAG Service G02-P-22
Kevin Kelly, Christian Hirt, Michael Kuhn, Riccardo Barzaghi

G03. Time variable gravity field

Session: **G03-1**
Session title: Current and future satellite gravity missions
Type: Oral
Date: Wednesday, August 2, 2017
Time: 16:30 - 18:00
Room: Room 504+505
Chairs: Srinivas Bettadpur (University of Texas at Austin)
Shuanggen Jin (Shanghai Astronomical Observatory, Chinese Academy of Sciences)

Time	Title	Program No.
16:30	**Current Status of the GRACE Mission** Byron Tapley, Frank Flechtner, Michael Watkins, Srinivas Bettadpur	G03-1-01 invited
17:00	**GRACE Follow-On: Overview and Current Mission Status** Felix Landerer, Frank Flechtner, Frank Webb, Michael Watkins, Christoph Dahle, Srinivas Bettadpur	G03-1-02
17:15	**Towards deriving temporal sampling requirements for future satellite gravimetry missions** David Wiese, Christopher McCullough	G03-1-03
17:30	**Constellations of Next Generation Gravity Missions: mapping and mitigation of ocean tide model errors** Pieter Visser	G03-1-04
17:45	**Status of development on the future accelerometers for next generation gravity missions** Bruno Christophe, Francoise Liorzou, Damien Boulanger, Bernard Foulon, Vincent Lebat, Phuong-Anh Huynh, Nassim Zahzam, Yannick Bidel, Alexandre Bresson	G03-1-05

Session: **G03-2**
Session title: Time-varying gravity field estimation
Type: Oral
Date: Thursday, August 3, 2017
Time: 08:30 - 10:00
Room: Room 504+505
Chairs: Jürgen Kusche (University of Bonn)
Shuanggen Jin (Shanghai Astronomical Observatory, Chinese Academy of Sciences)

Time	Title	Program No.
08:30	**Earth Mass Transport Mission 2 – Proposal for an Earth Explorer 9 Mission** Thomas Gruber, Isabelle Panet, Roland Pail	G03-2-01

08:45	**Time variable gravity from kinematic orbits of LEO satellites – A 15+ years series of monthly solutions without gaps** Norbert Zehentner, Torsten Mayer-Guerr, Sebastian Strasser	G03-2-02
09:00	**Near real-time gravity and its applications in the era of Next Generation Gravity Missions - Insights on the ESA-ADDCON project** Ilias Daras, Pieter Visser, Nico Sneeuw, Tonie van Dam, Roland Pail, Thomas Gruber, Qiang Chen, Wei Liu, Mohammad Tourian, Johannes Engels, Peyman Saemian, Christian Siemes, Roger Haagmans	G03-2-03
09:15	**GRACE Temporal Gravity Solution Techniques Based on Energy Balance Approach** C. K. Shum, Chunli Dai, Kun Shang, Junyi Guo, Yu Zhang, Wei Feng, Ehsan Forootan, Ales Bezdek, Josef Sebera, Karoslav Klokocnik, Orhan Akyilmaz, Chungyen Kuo, Jurgen Kusche, Huseyin Merchan, Michael Schmidt, Min Zhong, Leonid Zotov	G03-2-04
09:30	**Amplitude-phase representation of GRACE spherical harmonic spectra** Nico Sneeuw, Balaji Devaraju	G03-2-05
09:45	**Using Swarm and Sentinel observations for time-variable hl-SST gravity field determination** Christoph Dahle, Daniel Arnold, Adrian Jaeggi, Ulrich Meyer, Rolf Koenig, Grzegorz Michalak, Karl Hans Neumayer	G03-2-06

Session: **G03-3**
Session title: Time-varying gravity field methods and solutions
Type: Oral
Date: Thursday, August 3, 2017
Time: 10:30 - 12:00
Room: Room 504+505
Chairs: Srinivas Bettadpur (University of Texas at Austin)
Jürgen Kusche (University of Bonn)

Time	Title	Program No.
10:30	**Preliminary results from CSR RL06 GRACE gravity solutions** Himanshu Save	G03-3-01
10:45	**Combination of monthly gravity field solutions – transition from an EGSIEM prototype service into an IAG service** Adrian Jaggi, Ulrich Meyer, Yoomin Jean, Daniel Arnold	G03-3-02
11:00	**On computation of along-track potential and Line-of-Sight (LOS) acceleration difference using GRACE inter-satellite ranging data for time-variable gravity analysis** Khosro Ghobadi Far, Shin-Chan Han, Bryant Loomis, Scott Luthcke	G03-3-03
11:15	**Evaluating strategies for mitigating aliasing errors in GRACE-like satellite missions** Balaji Devaraju, Matthias Weigelt, Juergen Mueller	G03-3-04
11:30	**GRACE de-striping by biharmonic thin-plate splines on the sphere** Wolfgang Keller	G03-3-05
11:45	**SLR monthly gravity solutions using the C5++ software** Koji Matsuo, Toshimichi Otsubo	G03-3-06

Session: **G03-4**
Session title: Mass transport and redistrubution
Type: Oral
Date: Thursday, August 3, 2017
Time: 13:30 - 15:00
Room: Room 504+505
Chairs: Shuanggen Jin (Shanghai Astronomical Observatory, Chinese Academy of Sciences)
Jürgen Kusche (University of Bonn)

Time	Title	Program No.
13:30	**Mapping probabilities of extreme continental water storage changes from space gravimetry** Juergen Kusche, Annette Eicker, Ehsan Forootan, Anne Springer, Laurent Longuevergne	G03-4-01
13:45	**Glacier melting and GIA in Alaska estimated from joint GPS, ICESat and GRACE measurements** Shuanggen Jin, Tengyu Zhang	G03-4-02
14:00	**Spatio-temporal downscaling of GRACE water storage changes data at catchment scale** Mohammad J. Tourian, Nico Sneeuw	G03-4-03
14:15	**The potential of GRACE gravimetry to detect heavy rainfall-induced impoundment of a small reservoir in the upper Yellow River** Shuang Yi, Chunqiao Song, Qiuyu Wang, Linsong Wang, Kosuke Heki, Wenke Sun	G03-4-04
14:30	**Detection and interpretation of multi-annual mass variation in GRACE monthly gravity solutions** Lorant Foldvary, Annamaria Kiss	G03-4-05

Session: **G03-5**
Session title: Solid-Earth and other applications
Type: Oral
Date: Thursday, August 3, 2017
Time: 16:30 - 18:00
Room: Room 504+505
Chairs: Jürgen Kusche (University of Bonn)
Srinivas Bettadpur (University of Texas at Austin)

Time	Title	Program No.
16:30	**What GRACE/GRACE-FO satellite gravity may tell about the atmosphere (and what not)** Annette Eicker, Anne Springer, Andreas Hense, Isabelle Panet, Juergen Kusche	G03-5-01
16:45	**Uncertainty of GRACE-borne long periodic and secular ice mass variations in Antarctica** Lorant Foldvary, Annamaria Kiss	G03-5-02
17:00	**Ocean tide alias spectrum estimation for satellite gravity missions** Wei Liu, Nico Sneeuw	G03-5-03
17:15	**Seasonal water mass variation in the Japan Sea from satellite gravimetry: Comparison with GNSS and seasonality in earthquake occurrences** Suguru Doto, Kosuke Heki	G03-5-04
17:30	**Seismic gravity changes of the 2004 Sumatra-Andaman earthquake and static gravity anomaly** Yusaku Tanaka, Kosuke Heki	G03-5-05
17:45	**Continuous time variations in relative gravity and tilt, observed by a CG-3M gravimeter during the inflation event at Sakurajima Volcano on August 15, 2015** Takahito Kazama, Keigo Yamamoto, Masato Iguchi, Yoichi Fukuda	G03-5-06

Session: **G03-P**
Type: Poster
Date: Thursday, August 3/ Friday, August 4, 2017
Time: 15:30 - 16:30 / 15:00 - 16:00
Room: Shinsho Hall

Title	Program No.
ESA's Studies of Next Generation Gravity Mission Concepts Luca Massotti, Christian Siemes, Olivier Carraz, Roger Haagmans, Pierluigi Silvestrin, Michael Kern	G03-P-01
Combination of monthly gravity fields on normal equation level Ulrich Meyer, Adrian Jaeggi, Yoomin Jean, Daniel Arnold	G03-P-02
GNSS-based calibration of GRACE accelerometers Igor Koch, Akbar Shabanloui, Jakob Flury, Juergen Mueller	G03-P-03
Comparison of short-term iGrav superconducting gravimeter observations with local and global hydrological models Hojjat Kabirzadeh, Dimitrios Piretzidis, Jeong Woo Kim, Michael G. Sideris	G03-P-04
Evaluation and Analysis of Ground Water Level Changes and Water Budget in the Northeast Poland Joanna Kuczynska-Siehien, Zofia Rzepecka, Monika Birylo, Ewa Andrasik, Jolanta Nastula	G03-P-05
A novel approach to study ice mass change by integration of satellite data in Greenland and Antarctica Mohammad Bagherbandi, Hadi Amin Nureldin Gido, Lars E. Sjöberg	G03-P-06

IAG Earth rotation and Geodynamics

G04. Earth rotation and geodynamics

Session: **G04-1**
Session title: Earth rotation and geodynamics I
Type: Oral
Date: Monday, July 31, 2017
Time: 08:30 - 10:00
Room: Room 504+505
Chairs: Jianli Chen (University of Texas at Austin)
Bernhard Steinberger (GFZ Germen Research Center for Goesciences)

Time	Title	Program No.
08:30	**Limited True Polar Wander as evidence that Earth's non-hydrostatic shape is persistently triaxial** Bernhard Steinberger, Miriam-Lisanne Seidel, Trond Torsvik	G04-1-01
08:45	**Short-term Angular Momentum Forecasts for Polar Motion Prediction** Maik Thomas, Robert Dill, Henryk Dobslaw, Christian Bizouard	G04-1-02
09:00	**Geophysical interpretation of long-term polar motion** Jianli Chen	G04-1-03
09:15	**Hydrological excitation of polar motion by different representations of Earth's gravity field** Jolanta Nastula, Malgorzata Winska, Waldemar Popinski	G04-1-04

09:30	**Global and regional comparison of hydrological excitation functions of polar motion by GRACE data and climate models** Justyna Sliwinska, Jolanta Nastula	G04-1-05

Session: **G04-2**
Session title: Earth rotation and geodynamics II
Type: Oral
Date: Monday, July 31, 2017
Time: 10:30 - 12:00
Room: Room 504+505
Chairs: Manabu Hashimoto (Kyoto University)
Alberto Escapa (University of Alicante)

Time	Title	Program No.
10:30	**On application of the Kalman filter for high resolution estimation of Earth orientation parameters using the ring laser and VLBI data** Monika Tercjak, Aleksander Brzezinski, Tobias Nilsson, Harald Schuh	G04-2-01
10:45	**Corrections to IAU2000 nutation series for consistency with IAU2006 precession** Alberto Escapa, Jose Manuel Ferrandiz, Tomas Baenas, Juan Getino	G04-2-02
11:00	**EOP prediction based on the Copula method using multi-source data** Sadegh Modiri, Robert Heinkelmann, Santiago Belda, Jose M. Ferrandiz, Harald Schuh	G04-2-03
11:15	**Excitation study of the observed Chandler wobble based on GRACE and SLR gravity data** Aleksander Brzezinski, Jolanta Nastula	G04-2-04
11:30	**Determination of accuracy information for effective angular momentum functions derived from gravity field observations** Franziska Goettl, Mathis Blossfeld, Alexander Kehm, Michael Schmidt, Florian Seitz	G04-2-05
11:45	**Empirical approach to the consistency and accuracy of the current IAU 2006/2000A precession-nutation model** Santiago Belda, Jose M. Ferrandiz, Robert Heinkelmman, Maria Karbon, Tobias Nilsson, Harald Schuh	G04-2-06

Session: **G04-3**
Session title: Earth rotation and geodynamics III
Type: Oral
Date: Tuesday, August 1, 2017
Time: 08:30 - 10:00
Room: Room 504+505
Chairs: Manabu Hashimoto (Kyoto University)
Alvaro Santamaria-Gomez (Universite de Toulouse)

Time	Title	Program No.
08:30	**Long-baseline laser strainmeter constructed at the underground KAGRA site in Kamioka as a new tool for monitoring crustal dynamics** Akito Araya, Akiteru Takamori, Wataru Morii, Kouseki Miyo, Masatake Ohashi	G04-3-01
08:45	**First year of gravity signal records with the iGrav-027 superconducting gravimeter** Przemyslaw Dykowski, Marcin Sekowski, Jan Krynski	G04-3-02
09:00	**Loading effects caused by storm surges in the Rio de La Plata / Argentina: A model proof by a high resolution gravity time series** Hartmut Wziontek, Fernando Oreiro, Ezequiel Antokoletz, Enrique D'Onofrio, Monica Fiore, Claudia Tocho	G04-3-03
09:15	**Constraining vertical land motion of tide gauges (IAG JWG 3.2): combination of velocity fields** Alvaro Santamaria-Gomez, Matt King, Tilo Schone, Tonie van Dam, Guy Woppelmann	G04-3-04
09:30	**Estimates of vertical velocity errors for IGS ITRF2014 stations by applying the improved singular spectrum analysis method and environmental loading models** Janusz Bogusz, Marta Gruszczynska, Anna Klos, Machiel S. Bos, Jean-Paul Boy	G04-3-05
09:45	**Vertical velocity profile and possible velocity changes in SW Japan from GNSS data over the last 20 years** Yutaro Iwasa, Kosuke Heki	G04-3-06

Session: **G04-4**
Session title: Earth rotation and geodynamics IV
Type: Oral
Date: Tuesday, August 1, 2017
Time: 10:30 - 12:00
Room: Room 504+505
Chairs: Janusz Bogusz (Military University of Technology)
Haluk Ozener (Bogazici University)

Time	Title	Program No.
10:30	**Actual Continuous Kinematic Model (ACKIM) of the Earth Crust based on ITRF2014** Hermann Drewes	G04-4-01
10:45	**Comparing Global and Dedicated Plate Angular Velocity Models: the cases of Arabia and South America** Rui Fernandes, Machiel Bos, Abdulaziz Alothman, Hector Mora-Paz	G04-4-02

11:00	**Modelling of Time-Varying Seasonal Signals in GNSS Time Series** Anna Klos, Machiel Bos, Janusz Bogusz	G04-4-03
11:15	**Distribution of interplate coupling in the south of Central and Eastern Java from GPS observation** Irwan Meilano, Endra Gunawan, Dina Sarsito, Rahma Hanifa, Bambang Setyadji, Hasanuddin Abidin, Susilo Susilo	G04-4-04
11:30	**Seismo-geodetic Behavior of Basic Tectonic Elements in Anatolian Region and Surroundings** Haluk Ozener, Asli Dogru, Bahadir Aktug, Soner Ozdemir	G04-4-05
11:45	**Advanced analysis of GRACE and GNSS data for Earth's response to seasonal and decadal loads** Paoline Prevost, Luce Fleitout, Eric Calais, Toni Vandam, Kristel Chanard, Michael Ghil	G04-4-06

Session: **G04-P**
Type: Poster
Date: Tuesday, August 1/ Wednesday, August 2, 2017
Time: 15:30 - 16:30
Room: Shinsho Hall

Title	Program No.
Length of the Day estimated from DORIS observations Petr Stepanek, Michal Buday, Vratislav Filler, Urs Hugentobler	G04-P-01
Revisiting the indirect effect of the triaxiality on the polar motion libration of the non-rigid Earth Alberto Escapa, Jose Manuel Ferrandiz, Juan Getino, Tomas Baenas	G04-P-02
The influence of mantle anelasticity on load response functions Volker Klemann, Robert Dill, Maik Thomas	G04-P-03
Time-lapse relative gravity measurements between surface and underground stations for studying the local hydrology Jaakko Makinen, Ivars Liepins, Viesturs Sprogis, Janis Sakne, Kalvis Salmins, Janis Kaminskis, Reinhard Falk, David Stizza	G04-P-04
GPS Observation to Identify Bali Back Arc Thrusting Dina A. Sarsito, Sri Hidayati, Susilo Susilo, Cecep Sulaiman, Irwan Meilano, Endra Gunawan, Estu Kriswati, Hasanuddin Z. Abidin, Heri Andreas	G04-P-05
Earth rotation in sight of climate modulations Leonid Zotov, Nikolay Sidorenkov, Christian Bizouard, Alexey Lyubushin	G04-P-06
Identifying the land subsidence attributed to the natural gas mining in GNSS time series in Japanese actively crustal deformed area Takuya Harada, Tomochika Tokunaga, Seiichi Shimada	G04-P-07

IAG Positioning and Applications

G05. Multi-signal positioning: Theory and applications

Session: **G05-1**
Session title: Indoor and outdoor navigation
Type: Oral
Date: Friday, August 4, 2017
Time: 08:30 - 10:00
Room: Room 504+505
Chairs: Vassilis Gikas (National Technical University of Athens)
Jinling Wang (University of New South Wales)

Time	Title	Program No.
08:30	**Constrained Differential Wi-Fi and UWB Measurements for Indoor Cooperative User Localization** Guenther Retscher, Hannes Hofer, Allison Kealy, Vassilis Gikas, Andreas Ettlinger, Franz Obex	G05-1-01
08:45	**Static and kinematic experimental evaluation of a UWB ranging system for positioning applications** Harris Perakis, Vassilis Gikas, Panos Sotiriou	G05-1-02
09:00	**The Database Referenced Navigation Algorithms : A new attempt at combining geophysical DBs and navigation algorithms** Jisun Lee, Jay Hyoun Kwon	G05-1-03
09:15	**The Estimation of Error Models of MEMS-IMU and its application to develop the GNSS/MEMS-IMU/ On-board Vehicle sensor based positioning System** Yong Lee, Jay Hyoun Kwon	G05-1-04
09:30	**Global GNSS processing based on the raw observation approach** Sebastian Strasser, Norbert Zehentner, Torsten Mayer-Guerr	G05-1-05
09:45	**Improving GNSS RTK and kinematic PPP positioning through extended Kalman filter tuning** Marco Aurelio Moraes de Mendonca, Marcelo C. dos Santos	G05-1-06

Session: **G05-2**
Session title: Single- and Multi-GNSS
Type: Oral
Date: Friday, August 4, 2017
Time: 10:30 - 12:00
Room: Room 504+505
Chairs: Pawel Wielgosz (University of Warmia and Mazury)
Marcelo Santos (University of New Brunswick)

Time	Title	Program No.
10:30	**Impact of Multi-GNSS analysis on precise geodetic applications** Elmar Brockmann, Daniel Ineichen, Simon Lutz, Stefan Schaer	G05-2-01
10:45	**Assessment of PPP quality for high speed kinematic application** Joao Francisco Galera Monico, Haroldo Antonio Marques, Italo Tsuchiya, Mauricio Cardoso	G05-2-02
11:00	**Statistical Analysis of Multi-GNSS Inter-System Biases for Precise Point Positioning Ambiguity Resolution** Shuyang Cheng, Jinling Wang	G05-2-03
11:15	**Quality of GPS, GLONASS, Galileo and BeiDou real-time orbits and clocks** Kamil Kazmierski, Krzysztof Sosnica, Tomasz Hadas	G05-2-04
11:30	**Satellite Phase Bias Estimation with High-Dimensional Ambiguity Fixing** Patrick Henkel, Dimitrios Psychas, Christoph Guenther	G05-2-05
11:45	**High-rate RTK and PPP for precise dynamic displacements determination** Jacek Paziewski, Rafal Sieradzki, Radoslaw Baryla, Pawel Wielgosz	G05-2-06

Session: **G05-3**
Session title: Positioning applications
Type: Oral
Date: Friday, August 4, 2017
Time: 13:30 - 15:00
Room: Room 504+505
Chairs: Allison Kealy (University of Melbourne)
Marcelo Santos (University of New Brunswick)

Time	Title	Program No.
13:30	**Higher Order Ionospheric modelling campaigns for precise GNSS applications** Tomasz Hadas, Jan Kaplon, Anna Krypiak-Gregorczyk, Manuel Hernandez-Pajares, Pawel Wielgosz, Alberto Garcia-Rigo, Jacek Paziewski, Kamil Kazmierski, Jaroslaw Bosy, Krzysztof Sosnica, Dawid Kwasniak, Marcin Pucilowski, Robert Szyszko, Raul Orus Perez	G05-3-01
13:45	**Crustal deformation in response to the changing climate** Shimon Wdowinski, Paulo Setti, Tonie van Dam	G05-3-02
14:00	**Variometric approach for displacement analysis using Galileo data** Francesca Tesolin, Alfonso Vitti, Augusto Mazzoni, Mattia Giovanni Crespi	G05-3-03
14:15	**Investigation of RUFRIS as an alternative method to levelling** M. Amin Alizadeh-Khameneh, Anna B. O. Jensen, Milan Horemuz, Johan Vium Andersson	G05-3-04

Session: **G05-P**
Type: Poster
Date: Thursday, August 3/ Friday, August 4, 2017
Time: 15:30 - 16:30 / 15:00 - 16:00
Room: Shinsho Hall

Title	Program No.
Assessment of GNSS and map integration for lane-level applications in the scope of Intelligent Transportation Location Based Services (ITLBS) Emerson Cavalheri, Marcelo Santos	G05-P-01
Evaluation of digital surface models created from LiDAR and optical sensor data collected with unmanned aerial systems Andrzej Borkowski, Grzegorz Jozkow, Agata Walicka, Mateusz Karpina, Przemyslaw Tymkow	G05-P-02
Improving low-cost GNSS navigation in urban areas using multi-constellation receivers and integrating a Kinect device Diana Pagliari, Carlo Iapige De Gaetani, Eugenio Realini, Mirko Reguzzoni, Lorenzo Rossi, Livio Pinto, Riccardo Barzaghi	G05-P-03
Multi GNSS attitude estimation of UAVs during landing Marton Farkas, Szabolcs Rozsa, Balint Vanek	G05-P-04
Short-Term Prediction of IGS Real Time Service Data for Continuous GNSS Positioning Jeongrae Kim, Mingyu Kim	G05-P-05
Multiplicative random error models: Parameter estimation and error analysis Yun Shi, Jing Zhang, Peng Chen, Jie Lv, Chao Li	G05-P-06
MINIMUM MEAN SQUARE ERROR ADJUSTMENT, Part 2: The Empirical BLE and the reproBLE for multivariate positioning Burkhard Schaffrin, Peiliang Xu	G05-P-07

G06. Geodetic remote sensing

Session: **G06-1**
Session title: Troposphere monitoring I
Type: Oral
Date: Tuesday, August 1, 2017
Time: 13:30 - 15:00
Room: Room 504+505
Chairs: Yoshinori Shoji (Meteorological Research Institute Tsukuba)
Robert Heinkelmann (German Research Centre for Geosciences Potsdam GFZ)

Time	Title	Program No.
13:30	**GNSS Remote Sensing at GFZ: Overview and Recent Results** Jens Wickert, Fadwa AlShawaf, Christina Arras, Milad Asgarimehr, Galina Dick, Stefan Heise, Kristine Larson, XingXing Li, Cuixian Lu, Markus Ramatschi, Maximilian Semmling, Torsten Schmidt, Tzvetan Simeonov, Sibylle Vey, Florian Zus, Harald Schuh	G06-1-01 invited
13:45	**A new baseline processing strategy for GNSS meteorology** Katarzyna Stepniak, Olivier Bock, Pawel Wielgosz	G06-1-02
14:00	**Impact of advanced ZTD estimate method – Separation from site coordinates estimation –** Seiichi Shimada, Shingo Shimizu, Kazuhisa Tsuboki, Yusuke Morimoto	G06-1-03
14:15	**Main achievements of the Working Group 1 “Advanced GNSS Processing Techniques" of the COST Action ES1206: GNSS for Severe Weather and Climate (GNSS4SWEC)** Galina Dick, Jan Dousa, Michal Kacmarik, Pavel Vaclavovic, Eric Pottiaux, Florian Zus, Hugues Brenot, Jan Kaplon, Gregor Moeller, Rosa Pacione, Andrea Stuerze, Norman Teferle, Laurent Morel, Pawel Hordyniec	G06-1-04
14:30	**Heterogeneity of residuals from GNSS and ray-traced tropospheric delays as an indicator of hydrometeors** Pawel Hordyniec, Witold Rohm, Jan Kaplon	G06-1-05
14:45	**Analysis of systematic effects in slant total delay estimation with PPP** Jan Kaplon, Pawel Hordyniec, Witold Rohm	G06-1-06

Session: **G06-2**
Session title: Troposphere monitoring II
Type: Oral
Date: Tuesday, August 1, 2017
Time: 16:30 - 18:00
Room: Room 504+505
Chairs: Tomasz Hadas (Wroclaw University of Environmental and Life Sciences)
Francesco Vespe (Agenzia Spaziale Italiana)

Time	Title	Program No.
16:30	**High-resolution troposphere models based on Numerical Weather Prediction for GNSS real-time Precise Point Positioning** Karina Wilgan, Tomasz Hadas, Pawel Hordyniec, Jaroslaw Bosy	G06-2-01
16:45	**Optimum stochastic modeling for GNSS tropospheric delay estimation in real-time** Tomasz Hadas, Felix Norman Teferle, Kamil Kazmierski, Pawel Hordyniec, Jaroslaw Bosy	G06-2-02
17:00	**Impact assessment of regional versus global Numerical Weather Model–derived tropospheric corrections for GPS and VLBI** Thaleia Nikolaidou, Felipe Nievinski, Kyriakos Balidakis, Marcelo Santos	G06-2-03
17:15	**A Study of Severe Storm Monitoring and Prediction using High Spatio-temporal GNSS Water Vapor Information Retrieved with RTKLIB and MADOCA** Yoshinori Shoji, Kazutoshi Sato, Masanori Yabuki, Toshitaka Tsuda	G06-2-04
17:30	**Integrated water vapor trends from VLBI analysis, and their validation with GNSS and numerical weather models** Kyriakos Balidakis, Tobias Nilsson, Robert Heinkelmann, Susanne Glaser, Florian Zus, Zhiguo Deng, Harald Schuh	G06-2-05
17:45	**Tropospheric ties for inter-technique comparisons and combinations** Jan Dousa, Robert Heinkelmann, Kyriakos Balidakis	G06-2-06

Session: **G06-3**
Session title: Ionosphere and space weather I
Type: Oral
Date: Wednesday, August 2, 2017
Time: 08:30 - 10:00
Room: Room 504+505
Chairs: Lung-Chih Tsai (National Central University)
Michael Schmidt (Technical University of Munich)

Time	Title	Program No.
08:30	**Detection of both icecap and crustal deformation associated with the 2014-2015 Bardarbunga rifting episode** Yuji Himematsu, Masato Furuya	G06-3-01

08:45 **Taiwan/TriG Radio Occultation Process System (TROPS)** G06-3-02
Cheng-Yung Huang, Wen-Hao Yeh, Tzu-Pang Tseng, Linton Chen, Jing-Mei Wu, Hsiu-Wen Li

09:00 **Global and regional high resolution VTEC Representations using B-Splines and Kalman filtering** G06-3-03
Michael Schmidt, Andreas Goss, Eren Erdogan, Denise Dettmering, Florian Seitz, Klaus Boerger, Sylvia Brandert, Barbara Goerres, Wilhelm Kersten, Volker Bothmer, Johannes Hinrichs, Niclas Mrotzek

09:15 **The optimal regularization (alpha-weighted BLE via A-optimal design) and its application in GNSS-based ionospheric tomography** G06-3-04
Jianqing Cai, Kun Qian, Nico Sneeuw, Cheng Wang, Jiexian Wang

09:30 **Contributions to real time and near real time Ionosphere Monitoring by IAG's RTIM-WG** G06-3-05 invited
Alberto Garcia-Rigo, David Roma-Dollase, Manuel Hernandez-Pajares, Zishen Li, Michael Terkildsen, German Olivares, Reza Ghoddousi-Fard, Denise Dettmering, Eren Erdogan, Haris Haralambous, Yannick Beniguel, Jens Berdermann, Martin Kriegel, Anna Krypiak-Gregorczyk, Tamara Gulyaeva, Attila Komjathy, Panagiotis Vergados, Joachim Feltens, Rene Zandbergen, Tim Fuller-Rowell, David Altadill, Nicolas Bergeot, Andrzej Krankowski, Loukis Agrotis, Ivan Galkin, Raul Orus-Perez, Estefania Blanch

Session: **G06-4**
Session title: Ionosphere and space weather II
Type: Oral
Date: Wednesday, August 2, 2017
Time: 10:30 - 12:00
Room: Room 504+505
Chairs: Alberto Gracia-Rigo (Technical University of Catalonia)
Jianqing Cai (University of Stuttgart)

Time	Title	Program No.
10:30	**S4 index observations and global morphology of ionospheric scintillations using FS3/COSMIC GPS radio occultation data** Lung-Chih Tsai, Shin-Yi Su, Chao-Han Liu	G06-4-01
11:00	**3-D Tomography of Daytime Mid-latitude Sporadic-E from GNSS Data** Ihsan Naufal Muafiry, Kosuke Heki, Jun Maeda	G06-4-02
11:15	**Dispersive and Non-dispersive Components in the L-band InSAR Data Associated with Sporadic-E and Heavy Rain Episodes** Masato Furuya, Takato Suzuki, Youhei Kinoshita	G06-4-03
11:30	**Remote sensing of ionospheric TEC using GNSS observations in relation to space weather events and seismic activity in Bosnia and Herzegovina** Randa Natras, Medzida Mulic	G06-4-04
11:45	**Assessment and comparisons of ionospheric vertical total electron content products** Michael Schmidt, Alberto Garcia-Rigo, Eren Erdogan, Andreas Goss, David Roma-Dollase, Manuel Hernandez-Pajares	G06-4-05

Session: **G06-5**
Session title: GNSS reflectometry
Type: Oral
Date: Wednesday, August 2, 2017
Time: 13:30 - 15:00
Room: Room 504+505
Chairs: Jens Wickert (German Research Centre for Geosciences GFZ)
Felipe Geremia-Nievinski (Federal University of Rio Grande do Sul)

Time	Title	Program No.
13:30	**GNSS-Reflectometry Based Sea Level and Water Level Studies** C. K. Shum, Jian Sun, Jeonghwan Park, Joel Johnson, Yuchan Yi, Lifeng Bao, Stephane Calmant, Valerie Ballu, Chungyen Kuo, Tilo Schone, Jens Wickert	G06-5-01
13:45	**IAG/GGOS inter-comparison campaign on SNR-based GNSS reflectometry for sea level monitoring** Felipe Geremia-Nievinski, Thomas Hobiger, Karen Boniface, Ruediger Haas, Wei Liu, Nicolas Roussel, Joakim Strandberg, Sajad Tabibi, Sibylle Vey, Jens Wickert, Simon Williams	G06-5-02 invited
14:00	**Sea level retrieval based on fitting model of GNSS SNR observations** Wei Liu, Yuan Hu, Maximilian Semmling, Jens Wickert	G06-5-03
14:15	**Observation of sea surface heights from moving ships based on analysis of GNSS-SNR data** Joerg Reinking	G06-5-04
14:30	**Wind Direction Retrieval in Airborne Experiments of a GNSS-R Receiver** Sheng-Hsiung Ma, Jyh-Ching Juang	G06-5-05
14:45	**GNSS Reflectometry onboard the International Space Station with GEROS-ISS: Review of activities and current status** Jens Wickert, Estel Cardellach, Manuel Martin-Neira, Ole Andersen, Jorge Bandeiras, Laurent Bertino, Adriano Camps, Jan Saynisch, Nuno Catarinho, Christine Gommenginger, C. K. Shum, Cinzia Zuffada, Giuseppe Foti, Jiping Xie, Per Hoeg, Adrian Jaeggi, Michael Kern, Tony Lee, Maximilian Semmling, Hyuk Park, Nazzareno Pierdicca	G06-5-06

Session: **G06-P**
Type: Poster
Date: Tuesday, August 1/ Wednesday, August 2, 2017
Time: 15:30 - 16:30
Room: Shinsho Hall

Title	Program No.
Assessing Precise Point Positioning Derived Zenith Total Delays Using the NIGNET Omeiza Mayaki, Marcelo Santos, Thaleia Nikolaidou, Chukwuma Okolie	G06-P-01
Calibration of empirical thermospheric models by using laser observations to near-Earth orbiting spherical satellites Michael Schmidt, Mathis Blossfeld, Chao Xiong, Hermann Luehr	G06-P-02
Impact of heat island effect on rainfall patterns under global warming: case study of Taipei City Ta-Kang Yeh, Jing-Shan Hong, Kuan-Chen Su, Shih-Liang Chan	G06-P-03
Ray-traced radio occultation profiles during tropical cyclones Pawel Hordyniec, Cheng-Yung Huang, Witold Rohm	G06-P-04
Regional Precipitation Prediction Based On Tropospheric Gradients and Delay Time Series Janina Boisits, Gregor Moeller, Christoph Wittmann, Robert Weber, Johannes Boehm	G06-P-05
Comparison of GNSS-R Ocean Surface Wind Speed Estimates from TDS-1 against Airborne Scatterometer Data in the Baltic Sea Gerhard Ressler, Josep Rosello, Tania Casal, Michael Kern, Martin Unwin, Philip Jales, Christine Gommenginger, Giuseppe Foti, Juha Kainulainen	G06-P-06
Ionospheric parameters determination using integrated space geodetic data (case study: Iran) Saeed Zare, Mahdi Alizadeh, Michael Schmidt	G06-P-07
Ionospheric scintillation detection based on GPS observations, a case study over Iran Sahar Sobhkhiz, Mahdi Alizadeh, Michael Schmidt	G06-P-08

IAG Joint

G07. Global Geodetic Observing System (GGOS) and Earth monitoring services

Session: **G07-1**
Session title: GGOS activities and focus on gravity
Type: Oral
Date: Thursday, August 3, 2017
Time: 13:30 - 15:00
Room: Room 502
Chairs: Richard Gross (Jet Propulsion Laboratory, California Institute of Technology)
Toshimichi Otsubo (Hitotsubashi University)

Time	Title	Program No.
13:30	**The Contribution of Geodetic Observations to Science and Society** Richard Gross	G07-1-01
13:45	**The GGOS Bureau of Networks and Observations: Activities and Plans** Michael R. Pearlmaan, Chopo Ma, Ruth Neilan, Carey E. Noll, Erricos Pavlis, Jerome Saunier, Tilo Schoene, Riccardo Barzaghi, Daniela Thaller, Sten Bergstrand, Juergen Mueller	G07-1-02 invited
14:00	**GGOS Bureau of Products and Standards: Recent activities and future plans** Detlef Angermann, Thomas Gruber, Michael Gerstl, Urs Hugentobler, Laura Sanchez, Robert Heinkelmann, Peter Steigenberger	G07-1-03
14:15	**Space Geodetic Activities and GGOS Working Group in Japan** Toshimichi Otsubo, Basara Miyahara, Ryoji Kawabata, Yuichi Aoyama, Yuichi Fukuda, Yusuke Yokota, Hiromi Yamao, Shigaru Matsuzaka	G07-1-04
14:30	**Observing the Earth's gravity field as integral component of the Global Geodetic Observing System** Roland Pail	G07-1-05 invited
14:45	**A first approximation to the International Height Reference Frame (IHRF)** Laura Sanchez, Heiner Denker, Denizar Blitzkow, Roland Pail, Jianliang Huang, Daniel Roman, Matt Amos, Johannes Ihde, Riccardo Barzaghi, Michael Sideris, Ilya Oshchepkov, Ana C. O. C. Matos, Diego Pinon, David Avalos, Silvio R.C. Freitas	G07-1-06 invited

Session: **G07-2**
Session title: GGOS focus on reference frames
Type: Oral
Date: Thursday, August 3, 2017
Time: 16:30 - 18:00
Room: Room 502
Chairs: Detlef Angermann (Technical University of Munich)
Richard Gross (Jet Propulsion Laboratory, California Institute of Technology)

Time	Title	Program No.
16:30	**Activities of the UN GGIM on the Global Geodetic Reference Frame** Gary Johnston, Laila Lovhoiden, Anne Jorgensen, John Dawson	G07-2-01 invited
16:45	**Roadmap to implement the UN resolution on Global Geodetic Reference Frame in Europe** Markku Poutanen	G07-2-02
17:00	**Recent Activities of the GGOS Standing Committee on Performance Simulations and Architectural Trade-Offs (PLATO)** Benjamin Maennel, Daniela Thaller, Markus Rothacher, Johannes Boehm, Juergen Mueller, Mathis Blossfeld, Alexander Kehm, Susanne Glaser	G07-2-03
17:15	**Simulated multi-technique TRFs for GGOS with focus on enhanced SLR and VLBI ground network architecture** Susanne Glaser, Rolf Koenig, Karl-Hans Neumayer, Tobias Nilsson, Robert Heinkelmann, Harald Schuh, Frank Flechtner	G07-2-04
17:30	**Effective expansion of satellite laser ranging network for improving geodetic products and satellite orbits** Toshimichi Otsubo, Koji Matsuo, Yuichi Aoyama, Keiko Yamamoto, Thomas Hobiger, Toshihiro Kubo-oka, Mamoru Sekido, Urs Hugentobler, Rolf Koenig	G07-2-05
17:45	**Benefits for GGOS from SLR tracking of GLONASS, Galileo, BeiDou, and QZSS satellites** Krzysztof Sosnica, Grzegorz Bury, Radoslaw Zajdel, Kamil Kazmierski, Mateusz Drozdzewski, Tomasz Hadas	G07-2-06

Session: **G07-3**
Session title: GGOS focus on geohazards and sea level
Type: Oral
Date: Friday, August 4, 2017
Time: 08:30 - 10:00
Room: Room 502
Chairs: Richard Gross (Jet Propulsion Laboratory, California Institute of Technology)
Toshimichi Otsubo (Hitotsubashi University)

Time	Title	Program No.
08:30	**Implementing the GGOS Decadal Vision for Geohazards Monitoring** John LaBrecque	G07-3-01
08:45	**Global Navigation Satellite System Tsunami Early Warning Project** Gerald Bawden, John Rundle, John LaBrecque	G07-3-02
09:00	**GNSS Buoy Array in the Ocean for a Synthetic Geohazards Monitoring System** Teruyuki Kato, Yukihiro Terada, Keiichi Tadokoro, Akira Futamura, Morio Toyoshima, Shin-Ichi Yamamoto, Mamoru Ishii, Takuya Tsugawa, Michi Nishioka, Kenichi Takizawa, Yoshinori Shoji, Tadahiro Iwasaki, Naoyuki Koshikawa	G07-3-03
09:15	**Contemporary Geocentric Sea-Level Rise Estimates and Regional Sea-Level Projections** Tingyi Yang, C. K. Shum, Chungyen Kuo, Yuanyuan Jia, Junyi Guo, Stephane Calmant, Kuo-Hsin Tseng, Tilo Schone	G07-3-04
09:30	**Global and regional sea level budgets from joint analysis of space gravimetry and altimetry data sets** Bernd Uebbing, Christina Lueck, Roelof Rietbroek, Juergen Kusche	G07-3-05
09:45	**The International DORIS Service: Current Status and Future Plans** Laurent Soudarin, Pascale Ferrage, Jerome Saunier, Frank Lemoine	G07-3-06

Session: **G07-4**
Session title: GGOS observations: GNSS and co-locations
Type: Oral
Date: Friday, August 4, 2017
Time: 10:30 - 12:00
Room: Room 502
Chairs: Detlef Angermann (Technical University of Munich)
Richard Gross (Jet Propulsion Laboratory, California Institute of Technology)

Time	Title	Program No.
10:30	**Activities of the Wettzell station in Germany** Daniela Thaller, Torben Schueler, Thomas Kluegel, Johann Eckl, Alexander Neidhardt, Christian Ploetz, Gerhard Kronschnabl, Hartmut Wziontek, Jan Kodet, Ulrich Schreiber	G07-4-01 invited
10:45	**Geodetic activities at Syowa Station, East Antarctica** Yuichi Aoyama, Koichiro Doi, Yoichi Fukuda, Hiroshi Ikeda, Hideaki Hayakawa, Yoshihiro Fukuzaki, Mamoru Sekido, Toshimichi Otsubo, Yoshifumi Nogi, Kazuo Shibuya	G07-4-02 invited
11:00	**Development of New Analysis Strategy for GNSS Observation Network in Japan** Satoshi Abe, Naofumi Takamatsu, Norihiko Ishikawa, Kazunori Yamaguchi, Yuki Kamakari, Satoshi Kawamoto, Yohei Hiyama, Yuki Hatanaka, Hiromichi Tsuji	G07-4-03

11:15	**Performance of various homogenization tools on a synthetic benchmark dataset of GPS and ERA-interim IWV differences** Anna Klos, Roeland Van Malderen, Eric Pottiaux, Olivier Bock, Janusz Bogusz, Barbara Chimani, Michal Elias, Marta Gruszczynska, Jose Guijarro, Selma Zengin Kazanci, Tong Ning	G07-4-04
11:30	**A comparison of precipitable water vapor retrieved with novel ground-based microwave radiometer, GPS and analysis data in Tsukuba during a cold front passage** Ryuichi Ichikawa, Hiroshi Takiguchi, Taketo Nagasaki, Osamu Tajima, Kentaro Araki	G07-4-05
11:45	**Solar radiation pressure acceleration acting on geodetic satellites: precise orbit determination vs surface materials** Akihisa Hattori, Toshimichi Otsubo	G07-4-06

Session: **G07-5**
Session title: GGOS observations: VLBI
Type: Oral
Date: Friday, August 4, 2017
Time: 13:30 - 15:00
Room: Room 502
Chairs: Toshimichi Otsubo (Hitotsubashi University)
Detlef Angermann (Technical University of Munich)

Time	Title	Program No.
13:30	**The VLBI Global Observing System and its link to GGOS** Axel Nothnagel, Dirk Behrend, Hayo Hase, Arthur Niell, Bill Petrachenko, Gino Tuccari	G07-5-01
13:45	**VGOS development for Ishioka 13-m antenna** Takahiro Wakasugi, Michiko Umei, Tomoo Toyoda, Masayoshi Ishimoto, Ryoji Kawabata, Basara Miyahara	G07-5-02
14:00	**Broadband VLBI System GALA-V** Mamoru Sekido, Kazuhiro Takefuji, Hideki Ujihara, Tetsuro Kondo, Masanori Tsutsumi, Yuka Miyauchi, Eiji Kawai, Hiroshi Takiguchi, Ryuichi Ichikawa, Yasuhiro Koyama, Kennichi Watabe, Tomonari Suzuyama, Ryoji Kawabata, Yoshihiro Fukuzaki, Masayoshi Ishimoto, Takahiro Wakasugi, Jun'ichi Komuro, Kenjiro Terada, Kunitaka Namba, Rumi Takahashi, Tetsuro Aoki	G07-5-03
14:30	**Strategies to improve precision, accuracy, and latency of current and future VLBI Intensive sessions** Niko Kareinen, Thomas Hobiger, Ruediger Haas, Grzegorz Klopotek	G07-5-04
14:45	**Error budget analysis in Geodetic VLBI** Minghui Xu, James A. Anderson, Harald Schuh, Guangli Wang	G07-5-05

Session: **G07-P**
Type: Poster
Date: Thursday, August 3/ Friday, August 4, 2017
Time: 15:30 - 16:30 / 15:00 - 16:00
Room: Shinsho Hall

Title	Program No.
Status of the ESA Earth Explorer missions Mark Drinkwater, Pierluigi Silvestrin, Roger Haagmans, Michael Rast, Michael Kern	G07-P-01
The ISO Geodetic Registry and Related Standards Michael Craymer, Larry Hothem	G07-P-02
New design and facilities for the International Database for Absolute Gravity Measurements (AGrav): A support for the Establishment of a new Global Absolute Gravity Reference System Hartmut Wziontek, Reinhard Falk, Sylvain Bonvalot, Axel Ruelke	G07-P-03
IGFS geoportal development for gravity, geoid, GGM and DEM data Georgios S. Vergos, Vassilios N. Grigoriadis, Riccardo Barzaghi, Daniela Carrion, Sylvain Bonvalot, Franz Barthelmes, Mirko Reguzzoni, Hartmut Wziontek, Kevin M. Kelly	G07-P-04
IGFS metadata for gravity and geoid. Structure, build-up and application module Georgios S. Vergos, Vassilios N. Grigoriadis, Riccardo Barzaghi, Daniela Carrion	G07-P-05
The Data Base of the International Geodynamics and Earth Tide Service (IGETS) Christian Voigt, Christoph Foerste, Hartmut Wziontek, David Crossley, Bruno Meurers, Vojtech Palinkas, Jacques Hinderer, Jean-Paul Boy, Jean-Pierre Barriot, Heping Sun	G07-P-06
Effects of tidal perturbation on the geopotential for application of precise clock comparison to long-distance leveling: Case study of Japan as coastal areas Yuki Kuroishi	G07-P-07
Activities of the Asia-Oceania VLBI Group for Geodesy and Astrometry (AOV) Ryoji Kawabata, Takahiro Wakasugi, Michiko Umei, Jim Lovell	G07-P-08
Geodetic Observations in Mizusawa VLBI Observatory Yoshiaki Tamura, Takaaki Jike, Seiji Manabe	G07-P-09
Development of Wideband Antennas Hideki Ujihara, Kazuhiro Takefuji, Mamoru Sekido, Ryuichi Ichikawa	G07-P-10
Contribution for international geodetic frame of SLR observation at the Shimosato Hydrographic Observatory Hiroko Fukura, Yusuke Yokota	G07-P-11

IASPEI Symposia

IASPEI Seismological Observation and Interpretation

S01. Open session

Session: **S01-1**
Session title: Open session I
Type: Oral
Date: Monday, July 31, 2017
Time: 08:30 - 10:00
Room: Room 501
Chairs: Thomas Meier (University of Kiel)
Dmitry Storchak (International Seismological Centre)

Time	Title	Program No.
08:30	**Automatic hypocenter determination for the Seismological Bulletin of Japan using Bayesian estimation and its applications** Koji Tamaribuchi	S01-1-01
08:45	**Automated seismic event location combining waveform stacking and relative location techniques** Francesco Grigoli, Simone Cesca, Frederic Massin, Anne Obermann, Wilfried Strauch, John Clinton, Stefan Wiemer	S01-1-02
09:00	**Over 20 years of HYPOSAT: Newest developments** Johannes Schweitzer	S01-1-03
09:15	**A tremor location method using products of cross correlations** Ka Lok Li, Hamzeh Sadeghisorkhani, Giulia Sgattoni, Olafur Gudmundsson, Roland Roberts	S01-1-04
09:30	**Rapid estimation of seismic moment, magnitude and energy for small to large events: improvement from Central Italy, 2016 seismic sequence** Antonella Gallo, Giovanni Costa, Rita De Nardis, Luisa Filippi, Giusy Lavecchia, Elisa Zambonelli	S01-1-05
09:45	**Towards routine determinations of earthquake focal mechanisms obtained from P-wave first motion polarities** Konstantinos Lentas, Dmitry Storchak	S01-1-06

Session: **S01-2**
Session title: Open session II
Type: Oral
Date: Monday, July 31, 2017
Time: 10:30 - 12:00
Room: Room 501
Chairs: Thomas Meier (University of Kiel)
Aitaro Kato (University of Tokyo)

Time	Title	Program No.
10:30	**Calculating the ISC's own magnitudes** Elizabeth Entwistle, Domenico Di Giacomo, Dmitry Storchak	S01-2-01
10:45	**Policy issues for the European Seismological Services within EPOS** Florian Haslinger, EPOS Seismology Consortium	S01-2-02
11:00	**The Mexican National Seismological Service: An overview** Xyoli Perez-Campos, SSN Personnel	S01-2-03
11:15	**Compilation of a Seismic Bulletin for the European Arctic** Johannes Schweitzer, Yana Konechnaya, Andrey Fedorov, Steven Gibbons, Berit Paulsen, Myrto Pirli	S01-2-04
11:30	**The ISC-GEM Global Instrumental Earthquake Catalogue: Current status and efforts to extend the period 1904-1919** Domenico Di Giacomo, Bob Engdahl, Dmitry Storchak, James Harris	S01-2-05
11:45	**Development of a web-application system for seismic waveform data observed at real-time with the seafloor seismic network, DONET** Daisuke Sugiyama, Morifumi Takaesu, Hiroki Horikawa, Kentaro Sueki, Narumi Takahashi, Seiji Tsuboi	S01-2-06

Session: **S01-3**
Session title: Open session III
Type: Oral
Date: Tuesday, August 1, 2017
Time: 08:30 - 10:00
Room: Room 501
Chairs: Domenico Di Giacomo (International Seismological Centre)
Aitaro Kato (University of Tokyo)

Time	Title	Program No.
08:30	**The Global Seismographic Network (GSN): New VBB Borehole Sensors, Sensor Emplacement Techniques and Data Quality Assessment using MUSTANG** Katrin Hafner, Peter Davis, David Wilson, Robert Woodward	S01-3-01
08:45	**Anatomy of a subduction zone – seismicity structure of the northern Chilean forearc from >100,000 relocated earthquake hypocenters** Bernd Schurr, Christian Sippl	S01-3-02

09:00	**The 30 May 2015 Bonin Deep Earthquake and the 660-km Discontinuity Around its Source Region** Keiko Kuge	S01-3-03
09:15	**The January 2017 Barrow Strait Earthquake and Subsequent Seismic Activity in Arctic Canada** Allison Bent, Nicholas Ackerley, Michal Kolaj, John Adams	S01-3-04
09:30	**Long Duration of Ground Motion in the Paradigmatic Valley of Mexico** Victor M. Cruz-Atienza, Josue Tago, Jose David Sanabria-Gomez, Emmanuel Chaljub, Vincent Etienne, Jean Virieux, Luis Quintanar	S01-3-05
09:45	**Difference in energy radiation from earthquakes with similar moment magnitude and focal mechanism: the broadband body-wave magnitudes of the 2014 Ludian and Jinggu, Yunnan Province, China, earthquake** Zhongliang Wu, Changsheng Jiang, Xiaoxiao Song	S01-3-06

Session: **S01-4**
Session title: Open session IV
Type: Oral
Date: Tuesday, August 1, 2017
Time: 10:30 - 12:00
Room: Room 501
Chairs: Domenico Di Giacomo (International Seismological Centre)
Elizabeth Entwistle (International Seismological Centre)

Time	Title	Program No.
10:30	**Recent earthquakes at Disko Island, Greenland, with focal mechanisms** Trine Dahl-Jensen, Peter H Voss, Tine B Larsen	S01-4-01
10:45	**New insights into volcano-tectonic seismicity patterns in the Virunga Volcanic Province, Democratic Republic of the Congo, from a new broadband seismic network (KivuSNet)** Adrien Oth, Julien Barriere, Nicolas d'Oreye, Francois Kervyn	S01-4-02
11:00	**Monitoring eruption activity using temporal stress changes at Mount Ontake volcano** Toshiko Terakawa, Yoshiko Yamanaka, Yuta Maeda, Shinichiro Horikawa, Takashi Okuda	S01-4-03
11:15	**Long-term monitoring of of seismic velocity around a source fault of the 1995 Kobe earthquake** Ryoya Ikuta, Koshun Yamaoka, Takahiro Kunitomo, Kinya Nishigami, Toshiki Watanabe	S01-4-04
11:30	**Exhaustive analysis of surface wave propagation in a combined use of active and passive surveys for detailed site characterization** Paolo Bergamo, Stefano Marano, Manuel Hobiger, Donat Faeh	S01-4-05
11:45	**Investigation of deep sedimentary and crustal structures with passive seismic methods** Dario Chieppa, Manuel Hobiger, Marco Pilz, Donat Faeh	S01-4-06

Session: **S01-P**
Type: Poster
Date: Tuesday, August 1/ Wednesday, August 2, 2017
Time: 15:30 - 16:30
Room: Event Hall

Title	Program No.
Fast hypocenter determination with a 3D velocity model and its implication for seismicity monitoring Akio Katsumata	S01-P-01
Moment tensor inversion of shallow offshore earthquakes in the Nankai subduction zone using a three-dimensional velocity structure model Shunsuke Takemura, Takeshi Kimura, Katsuhiko Shiomi, Hisahiko Kubo, Tatsuhiko Saito	S01-P-02
Local Magnitude, ML Scale for the Philippines: Investigation of Hypocentral Distance Dependence Johnlery Deximo, Tatsuhiko Hara	S01-P-03
The Mechanism of Rare Earthquakes in Pidie Jaya, Aceh Derived from Source Parameter and Shear Wave Splitting Tomography Rexha Verdhora Ry, Andri Dian Nugraha, Sri Widiyantoro, Riskiray Ryannugroho, Kadek Hendrawan Palgunadi, Muksin Umar, Zulfakriza Zulfakriza, Kemal Erbas	S01-P-04
Rupture process of the 1979 Tumaco, Colombia, earthquake using teleseismic body waves Masahiro Yoshimoto, Hiroyuki Kumagai, Nelson Pulido	S01-P-05
Stress drop characteristics of the 2008-2016 Storfjorden earthquake sequence Lars Ottemoller, Norunn Tjaaland, Hasbi Ash Shiddiqi, Won-Young Kim	S01-P-06
Adding manual picks from OBS stations into the ISC Bulletin: the example of the 7D Cascadia Initiative Community Experiment Domenico Di Giacomo, Luke Cottell, Elizabeth Entwistle, James Harris, Dmitry Storchak	S01-P-07

The current status of the ISC Bulletin S01-P-08
Elizabeth Entwistle, Rose Hulin, Blessing Shumba, Rebecca Verney, Jennifer Weston, Elizabeth Ayres, James Harris, Dmitry Storchak, Lonn Brown, Kathrin Lieser, Edith Korger

Automatic classification and onset estimation of seismic P and S wave signals recorded at local seismic network using artificial neural networks S01-P-09
Timo Tiira

The use of seismic arrays in geodynamic monitoring of the East European platform S01-P-10
Irina Sanina, Ivan Kitov, Margarita Nesterkina, Natalia Konstantinovskaya, Svetlana Kishkina

Development of JAMSTEC Ocean-bottom Seismology Database (J-SEIS) to download DONET Event Data and Borehole Continuous Data (4) S01-P-11
Hiroki Horikawa, Kentaro Sueki, Kensuke Suzuki, Eiichiro Araki, Akira Sonoda, Narumi Takahashi, Seiji Tsuboi

Very wide observation range of the developed borehole stress meter and comparison with STS seismometer S01-P-12
Hiroshi Ishii, Muneyoshi Furumoto, Yasuhiro Asai

High-frequency geophone with correction scheme for mine explosion monitoring S01-P-13
Alina Besedina, Yaroslav Denisenko, Evgeny Vinogradov

RESIF Seismology Distributed System : Data and Services S01-P-14
Catherine Pequegnat, Working Groupgroup RESIF SI-

Data quality Improvement of the Algerian Digital Seismic Network (ADSN) S01-P-15
Azouaou Alili, Abdelkarim Yelles-Chaouche, Mohamed Ouakedi, Hamoud Beldjoudi, Abdelaziz Kherroubi, Izeddine Ameur

Design and Implementation of the National Seismic Monitoring Network in the Kingdom of Bhutan S01-P-16
Shiro Ohmi, Hiroshi Inoue, Jamyang Chophel, Phuntso Pelgay, Dowchu Drukpa

New steps towards local seismic hazard assessment of Bucharest (Romania) S01-P-17
Elena Manea, Clotaire Michel, Manuel Hobiger, Valerio Poggi, Donat Fah, Alexandru Marmureanu, Carmen Cioflan

Seismic Activity in the Central Tottori prefecture, Japan, with an M6.6 earthquake on October 21, 2016 analyzed by the Matched Filter Method S01-P-18
Shiro Ohmi

The seismic sequence of the magnitude 5.7 crustal earthquake of 2014 of Focsani Basin (Romania) – relevant data regarding the stress field in front of the Southeastern Carpathians bend S01-P-19
Andreea Craiu, Luminita Angela Ardeleanu, Marius Craiu, Mihail Diaconescu

Distribution of deep earthquakes in the subducting Pacific slab beneath Japan S01-P-20
Ayako Tsuchiyama, Junichi Nakajima, Toru Matsuzawa

The McAdam, New Brunswick Earthquake Swarms of 2012 and 2015-16: Extremely Shallow, Natural Events S01-P-21
Allison Bent, Stephen Halchuk, Veronika Peci, Karl Butler, Kenneth Burke, John Adams, Nawa Dahal, Sylvia Hayek

Depth of earthquakes in Greenland S01-P-22
P. H. Voss, T. B. Larsen, T. Dahl-Jensen

Mw 5.5 Gyeongju Earthquake of 12 September 2016 in Southeastern Korea: SCR Earthquake Sequence with Moderate Stress Drop S01-P-23
Won-Young Kim, Yomggyu Ryoo

S02. Anthropogenic seismicity

Session: **S02-1**
Session title: World overview of anthropogenic seismicity I
Type: Oral
Date: Monday, July 31, 2017
Time: 08:30 - 10:00
Room: Room 403
Chairs: Stanislaw Lasocki (Institute of Geophysics, Polish Academy of Sciences)
Pankow Kristine (University of Utah)

Time	Title	Program No.
08:30	**Insights into faults, crustal permeability, state of stress and earthquake physics from induced earthquakes in Oklahoma and southern Kansas** William Ellsworth, Gregory Beroza, Yihe Huang, Cornelius Langenbruch, Martin Schoenball, Rall Walsh, Matthew Weingarten, Nana Yoshimitsu, Mark D. Zoback	S02-1-01 invited

09:00 **Trigger effects in the development of induced seismicity and the influence of human being over the natural seismicity of Kuzbass and Baikal regions of Russia** S02-1-02
Victor Seleznev, Aleksey Bryksin, Aleksey Emanov, Aleksandr Emanov, Ekaterina Leskova, Aleksandr Fateev

09:15 **Source parameters of the 2014 M5.5 Orkney earthquake sequence, South Africa, estimated by using near-field underground seismic arrays in gold mines** S02-1-03
Kazutoshi Imanishi, Hiroshi Ogasawara, Yasuo Yabe, Shigeki Horiuchi, Makoto Okubo, Osamu Murakami

09:30 **State of the art in 3D reflection seismic interpretation: New insights into a complex structural architecture in the vicinity of Orkney M5.5 event, South Africa** S02-1-04
Musa Manzi, Hiroyuki Ogasawara, Raymond Durrheim, Hiroshi Ogasawara, Tullis Onstott, Artur Cichowicz

09:45 **Rupture Process of the 2014 Orkney Earthquake, South Africa** S02-1-05
Makoto Okubo, Artur Cichowicz, Hiroshi Ogasawara, Osamu Murakami, Shigeki Horiuchi

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Session: **S02-2**
Session title: World overview of anthropogenic seismicity II
Type: Oral
Date: Monday, July 31, 2017
Time: 10:30 - 12:00
Room: Room 403
Chairs: Carlos Alberto Vargas Jimenez (Universidad Nacional de Colombia)
William L. Ellsworth (Stanford University)

Time	Title	Program No.
10:30	**Reservoir-Triggered Seismicity in Brazil: characteristics and new cases** Lucas Barros, Marcelo Assumpcao, Juraci Carvalho, Luiz Ribotta	S02-2-01
10:45	**Hydrocarbon induced seismicity in Groningen, the Netherlands** Bernard Dost, Elmer Ruigrok, Jesper Spetzler	S02-2-02
11:00	**Integrated Petrographic, Geomechanical and Seismological studies of rockmass behaviour during the final phase of ore extraction at Cooke 4 shaft in South Africa** Siyanda Mngadi, Raymond Durrheim, Halil Yilmaz, Musa Manzi, Thabang Kgarume, Jan Kuijpers, Tony Ward, Dave Roberts, Makoto Naoi, Hiroshi Snr Ogasawara, Akimasa Ishida, SATREPS	S02-2-03 invited
11:15	**Very small repeating earthquakes on a geological fault at 1-km depth in a gold mine in South Africa** Makoto Naoi, Junya Yamaguchi, Masao Nakatani, Hirokazu Moriya, Toshihiro Igarashi, Thabang Kgarume, Osamu Murakami, Thabang Masakale, Yasuo Yabe, Kenshiro Otsuki, Hironori Kawakata, Tsuyoshi Ishida, Luiz Ribeiro, Anthony Ward, Raymond Durrheim, Hiroshi Ogasawara	S02-2-04
11:30	**Using empirical relationships to predict PPV for surface explosions** Michelle Grobbelaar	S02-2-05

Session: **S02-3**
Session title: Studies of seismicity at Koyna, India
Type: Oral
Date: Tuesday, August 1, 2017
Time: 08:30 - 10:00
Room: Room 403
Chairs: Hiroshi Ogasawara (Ritsumeikan University)
Beata Orlecka-Sikora (Institute of Geophysics, Polish Academy of Sciences)

Time	Title	Program No.
08:30	**Artificial Water Reservoir Triggered Earthquakes at Koyna, India** Harsh K Gupta	S02-3-01 invited
09:00	**Scientific deep drilling investigations to probe reservoir triggered seismicity in the Koyna seismogenic zone, western India** Sukanta Roy, Brijesh Bansal, Vyasulu Akkiraju, Surajit Misra, Deepjyoti Goswami, Nagaraju Podugu, Satrughna Mishra, Pinki Hazarika, Amrita Yadav, Sanjay Tiwari, Harsh Gupta, Shailesh Nayak	S02-3-02 invited
09:15	**Crustal Configuration beneath Koyna-Warna Seismicity Region, Western India** Vm Tiwari, S Mishra, CP Dubey	S02-3-03 invited
09:30	**Electrical image of Koyna-Warna seismic zone, India from large scale magnetotelluric studies** Prasanta Patro, Ujjal Borah, Kashi Raju, K. Chinna Reddy, Narendra Babu	S02-3-04
09:45	**The seasonal variation regime of induced seismicity in the Koyna-Warna region, western India** Kusumita Arora, Rajender Chadha, Vladimir Smirnov, Srinagesh Davuluri, Alexander Ponomarev, I.M. Kartashov	S02-3-05

Session: **S02-4**
Session title: Studies of seismicity at Koyna, India and other holistic approach projects
Type: Oral
Date: Tuesday, August 1, 2017
Time: 10:30 - 12:00
Room: Room 403
Chairs: Harsh Gupta (Geological Society of India)
Torsten Dahm (GFZ German Research Centre For Geosciences)

Time	Title	Program No.
10:30	**Borehole seismological studies at Koyna-Warna: A unique example of the study of Reservoir Triggered Seismicity (RTS)** Satyanarayana HVS, Shashidhar D, Mallika K, Harsh Kumar Gupta, Purnachandra Rao N, Mahato CR, Maity BS, Narsinga Rao D, Sarma ANS, Ajay B	S02-4-01 invited
10:45	**Seismotectonics of the Koyna region, India: based on focal mechanism solutions using borehole and surface seismological networks** Dodla Shashidhar, K. Mallika, H.V.S. Satyanarayana, C.R. Mahato, B.S. Maity, N. Purnachandra Rao, Harsh Gupta	S02-4-02 invited
11:00	**An overview of an ICDP project to drill into seismogenic zones of M2.0 – M5.5 earthquakes in deep South African gold mines (DSeis)** Hiroshi Ogasawara, Yasuo Yabe, Takatoshi Ito, Gerrie Van Aswegen, Artur Cichowicz, Michelle Grobbelaar, Ray Durrheim, Martin Ziegler, Margaret Boettcher, Tullis C Onstott, DSeis Team	S02-4-03
11:15	**Developing an Induced Seismic Mitigation Plan for the Proposed Utah Frontier Observatory for Research in Geothermal Energy (FORGE)** Kristine Pankow, Stephen Potter, Hao Zhang, Fan-Chi Lin, Joseph Moore	S02-4-04
11:30	**Mapping microseismicity induced by hydrofrac experiments in Europe** Torsten Dahm, Simone Cesca, Jose Angel Lopez Comino, Sebastian Heimann, Claus Milkereit, Arno Zang	S02-4-05

Session: **S02-5**
Session title: New directions in anthropogenic seismicity studies I
Type: Oral
Date: Tuesday, August 1, 2017
Time: 13:30 - 15:00
Room: Room 403
Chairs: James Jiro Mori (Disaster Prevention Research Institute, Kyoto University)
Alexey A. Malovichko (Geophysical Survey of the Russian Academy of Sciences)

Time	Title	Program No.
13:30	**IS-EPOS e- platform of EPOS Thematic Core Service ANTHROPOGENIC HAZARDS – a virtual laboratory for collaborative research experimentation** Beata Orlecka-Sikora, Stanislaw Lasocki, Konstantinos Leptokaropoulos, Grzegorz Kwiatek, Jean-Robert Grasso, Jean Schmittbuhl, Alexander Garcia, Tomasz Szepieniec, Mariusz Sterzel, Grzegorz Lizurek, Karolina Chodzinska	S02-5-01
13:45	**Picking vs Waveform based detection and location methods for induced seismicity monitoring** Francesco Grigoli, Maren Boese, Toni Kraft, Bernd Weber, Stefam Wiemer, John Clinton	S02-5-02
14:00	**The Spatio-Temporal Variation of Seismicity in the South African Gold Mining Region** Vunganai Midzi, Brian Zulu, Denver Birch, Andrzej Kijko, Ansie Smit	S02-5-03
14:15	**Seismic hazard assessment for induced seismicity in the Middle Urals, Russia** Ruslan Diagilev	S02-5-04
14:30	**Identifying pathways for gas and fluid migration caused by fracking processes, with the use of criteria defined in equivalent dimension phase spaces** Stanislaw Lasocki, Beata Orlecka-Sikora, Konstantinos Leptokaropoulos, Grzegorz Kwiatek, Patricia Martinez-Garzon, Paolo Capuano, Simone Cesca	S02-5-05

Session: **S02-6**
Session title: New directions in anthropogenic seismicity studies II
Type: Oral
Date: Tuesday, August 1, 2017
Time: 16:30 - 18:00
Room: Room 403
Chairs: Stanislaw Lasocki (Institute of Geophysics, Polish Academy of Sciences)
Sukanta Roy (ESSO-Ministry of Earth Sciences, Govt. of India)

Time	Title	Program No.
16:30	**Discrimination of induced seismicity component in the seismicity of Sakhalin offshore hydrocarbon fields** Sergey Turuntaev, Alexey Konovalov, Andrey Stepnov, Elena Slinkova, Anna Gubanova	S02-6-01
16:45	**The Results of the Local Seismic Monitoring in the Underground Baksan Neutrino Observatory** Alexey Malovichko, Denis Shulakov, Zalim Dudarov, Spartak Dolov	S02-6-02
17:00	**Experiment to Trigger a Moderate-sized Earthquke** James Mori	S02-6-03
17:15	**Possibilities of seismic monitoring in control of equipment and constructions of hydro-electric power plants condition** Victor Seleznev, Aleksei Liseikin	S02-6-04

Session: **S02-P**
Type: Poster
Date: Tuesday, August 1/ Wednesday, August 2, 2017
Time: 15:30 - 16:30
Room: Event Hall

Title	Program No.
Spatio-temporal variation in seismicity due to periodically alternating roles of reservoirs in the Koyna-Warna RTS zone, India Amrita Yadav, Kalpna Gahalaut, N.Purnachandra Rao	S02-P-01
3D Poroelastic Modelling of Reservoir Triggered Seismicity (RTS) in Koyna Region, Western India Pinki Hazarika, Amrita Yadav, Sukanta Roy	S02-P-02
Rock strength variations in an active seismogenic zone: evidences from scientific drilling in Koyna, western India Deepjyoti Goswami, Vyasulu V. Akkiraju, Surajit Misra, Sukanta Roy, Amalendu Sinha, Harsh Gupta, Brijesh K. Bansal, Shailesh Nayak	S02-P-03
Deformations in rocks in the Koyna seismogenic zone, western India obtained through scientific deep drilling Surajit Misra, Sukanta Roy	S02-P-04
Geological and velocity structures of the Orkney M5.5 fault, South Africa Hiroyuki Ogasawara, Musa Manzi, Ray Durrheim, Hiroshi Ogasawara, Artur Cichowicz, Akimasa Ishida, Tatsunari Yasutomi	S02-P-05
Searching significant displacement zones of a M5.5 earthquake fault by forward and inversion analyses of strainmeter data at depth at a very close distance Tatsunari Yasutomi, Hiroshi Ogasawara, Akimasa Ishida, Hiroyuki Ogasawara, Durrheim Raymond, Alex Milev, Makoto Okubo, Teruhiro Yamaguchi, James Mori	S02-P-06
An integrated estimation of the stress field in seismogenic zones in South African gold mines Akimasa Ishida, Hiroshi Ogasawara, Yasuo Yabe, Akio Funato, Takatoshi Ito, Shuhei Abe, Raymond Durrheim, Siyanda Mngadi, Gerhard Hofmann, Dave Roberts, Harumi Kato, Alexander Milev, Makoto Naoi	S02-P-07
Experimental measurements of seismic velocities on core samples and their dependence on mineralogy and stress, Witwatersrand Basin (South Africa) Nomqhele Nkosi, Musa Manzi	S02-P-08
Estimate of the stress state in a close proximity to an earthquake source in a South African deep gold mine Shuhei Abe, Yasuo Yabe, Takatoshi Ito, Masao Nakatani, Gerhard Hofmann, Hiroshi Ogasawara	S02-P-09
Evaluation of the induced risks caused by shale gas exploration and exploitation Paolo Capuano, Beata Orlecka-Sikora, Stanislaw Lasocki, Simone Cesca, Andrew Gunning, Janusz Jaroslawsky, Alexander Garcia-Aristizabal, Rachel Westwood, Paolo Gasparini	S02-P-10
Induced seismicity in the region of the geothermal power plant at Insheim (central Upper Rhine Graben, SW Germany) Andrea Bruestle, Margarete Pilger, Thomas Plenefisch, Ulrich Wegler, Bernd Schmidt	S02-P-11
Analysis of static stress transfer in the 2013 Valencia Gulf (NE Spain) seismic sequence Lluis Salo, Tanit Frontera, Xavier Goula, Lluis Pujades, Alberto Ledesma, Josep Batllo, Jose Antonio Jara	S02-P-12
Spectral Characteristics of the 2006 Quarry Blasts in the Tehran Region based on the TDMMO Network Jamileh Vasheghani Farahani, Hiroe Miyake	S02-P-13
Analysis of ambient seismic noise levels for the SATREPS stations and their technical aspects Jorge Real, Vladimir Kostoglodov, Allen Husker	S02-P-14

The features of deep seismic structure of the area of junction of the Eurasian, Okhotsk and North American plates in Eastern Russia S02-P-15
Victor Seleznev, Aleksei Liseikin, Victor Solovyev, Aleksandr Salnikov, Sergey Shibaev

A physical seismic modeling study of multi-azimuth seismic refraction for a horizontal transverse isotropic medium S02-P-16
Young-Fo Chang, Cheng-Wei Tseng, Jia-Wei Liu, Chao-Ming Lin

S03. Imaging of heterogeneities in the Earth with seismic scattered waves and ambient noise

Session: **S03-1**
Session title: Imaging of heterogeneities in the Earth with seismic scattered waves and ambient noise I
Type: Oral
Date: Tuesday, August 1, 2017
Time: 13:30 - 15:00
Room: Room 401
Chairs: Ulrich Wegler (Friedrich-Schiller-Universitat Jena)
Kentaro Emoto (Tohoku University)

Time	Title	Program No.
13:30	**Envelopes of scalar plane wavelets propagating through 2-D random media with power-law spectra** Yuji Tomiyama, Jun Kawahara, Kentaro Emoto	S03-1-01
13:45	**Statistical characteristics of scattered waves in random media based on 3D finite difference simulations** Kentaro Emoto, Haruo Sato	S03-1-02
14:00	**Propagation of a Scalar Wavelet through von Karman-type Random Media** Haruo Sato, Kentaro Emoto	S03-1-03
14:15	**Role of localized heterogeneities on distortion of the apparent radiation patters: aftershock sequence of the 2016 Kumamoto earthquake** Shunsuke Takemura, Tatsuhiko Saito, Hisahiko Kubo, Katsuhiko Shiomi	S03-1-04
14:30	**Modeling waveform anomaly across central Japan with scattered seismic waves as inferred from high-frequency simulations** Simanchal Padhy, Takashi Furumura	S03-1-05
14:45	**Elastic vs. Acoustic Radiative Transfer Theory - Estimation of Seismic Attenuation Parameters in Germany** Peter J. Gaebler, Tom Eulenfeld, Ulrich Wegler	S03-1-06

Session: **S03-2**
Session title: Imaging of heterogeneities in the Earth with seismic scattered waves and ambient noise II
Type: Oral
Date: Tuesday, August 1, 2017
Time: 16:30 - 18:00
Room: Room 401
Chairs: Nozomu Takeuchi (University of Tokyo)
Tsutomu Takahashi (Japan Agency for Marine-Earth Science and Technology)

Time	Title	Program No.
16:30	**Intrinsic and Scattering Seismic Attenuation in Eastern Iran** Majid Mahood	S03-2-01
16:45	**Trans-dimensional imaging of scattering and intrinsic Q structures** Tsutomu Takahashi	S03-2-02
17:00	**Scattering and attenuation structures beneath volcanoes inferred from envelope widths of volcano-seismic events** Hiroyuki Kumagai, Cristian Lopez, John Londono, Yuta Maeda, Rudy Lacson	S03-2-03
17:15	**Intrinsic Attenuations in the Oceanic Lithosphere and Asthenosphere Constrained by Seismogram Envelopes** Nozomu Takeuchi, NOMan Project Team	S03-2-04
17:30	**3D Diffraction Imaging of Fault Zones** Vladimir Cheverda, Galina Reshetova, Maksim Protasov	S03-2-05
17:45	**Joint inversion for shallow crustal discontinuities from high-frequency waveforms of microearthquakes** Pavla Hrubcova, Vaclav Vavrycuk	S03-2-06

Session: **S03-3**
Session title: Imaging of heterogeneities in the Earth with seismic scattered waves and ambient noise III
Type: Oral
Date: Wednesday, August 2, 2017
Time: 08:30 - 10:00
Room: Room 401
Chairs: Kiwamu Nishida (University of Tokyo)
Ryota Takagi (Tohoku University)

Time	Title	Program No.
08:30	**Bias in velocity measurements from ambient noise due to anisotropic source distributions** Olafur Gudmundsson, Hamzeh Sadeghisorkhani, Roland Roberts, Ari Tryggvason	S03-3-01
08:45	**Approximate vector sensitivity kernels of coda waves to seismic velocity changes based on the scalar single isotropic scattering model** Hisashi Nakahara, Kentaro Emoto	S03-3-02
09:00	**Land-atmosphere coupling and source of low-frequency seismic noise from the analysis of co-located barometers and seismometers** Toshiro Tanimoto, Jiong Wang, Anne Valovcin	S03-3-03
09:15	**Dominant source locations of secondary microseisms in Japan estimated by Hi-net data** Ryota Takagi, Kiwamu Nishida	S03-3-04
09:30	**Comparison of microseismic Rayleigh and Love waves sources around Scandinavia** Hamzeh Sadeghisorkhani, Olafur Gudmundsson, Roland Roberts, Ari Tryggvason	S03-3-05
09:45	**Global source location of P-wave microseisms using Hi-net data from 2005 to 2011** Kiwamu Nishida, Ryota Takagi	S03-3-06

Session: **S03-4**
Session title: Imaging of heterogeneities in the Earth with seismic scattered waves and ambient noise IV
Type: Oral
Date: Wednesday, August 2, 2017
Time: 10:30 - 12:00
Room: Room 401
Chairs: Shingo Watada (University of Tokyo)
Hisashi Nakahara (Tohoku University)

Time	Title	Program No.
10:30	**Quantifying the body-wave information retrieved from global earthquake coda correlation** Hsin-Hua Huang, Victor Tsai, Fan-Chi Lin, Weitao Wang, Julien Chaput	S03-4-01
10:45	**Illuminating the Cascadia forearc and Mendocino Triple Junction system from seismic interferometry** Benoit Tauzin, Thanh Son Pham, Hrvoje Tkalcic	S03-4-02
11:00	**Retrieval of tsunamis by the interferometry of deep ocean pressure records** Shingo Watada, Lisa Kaneko, Yuchen Wang, Kenji Satake	S03-4-03
11:15	**HV Spectral Ratio (HVSR) for preliminary seismic characterization of Sun Pyramid in Teotihuacan, Mexico** Jose Pina-Flores, Shinichi Matsushima, Francisco J Sanchez-Sesma, Juan C Molina-Villegas, Jesus Morales-Valdez, Mario A Saenz-Castillo, Cesar A Sierra-Alvarez, Hiroshi Kawase	S03-4-04
11:30	**Crustal Structure of South Yogyakarta Area Revealed By Spatial Auto Correlation and Ambient Noise Tomography** Wiwit Suryanto, Jean-Philippe Metaxian, Ade Anggraini, Fittra Irwandhono, Francois Beauducel	S03-4-05
11:45	**Surface wave tomography of Java Island from ambient seismic noise** Sri Widiyantoro, Zulfakriza Zulhan, Agustya Martha, Phil Cummins, Erdinc Saygin, Tedi Yudistira, Andri Nugraha, Bayu Pranata, Shindy Rosalia	S03-4-06

Session: **S03-5**
Session title: Imaging of heterogeneities in the Earth with seismic scattered waves and ambient noise V
Type: Oral
Date: Wednesday, August 2, 2017
Time: 13:30 - 15:00
Room: Room 401
Chairs: Hisashi Nakahara (Tohoku University)
Kaoru Sawazaki (National Research Institute for Earth Science and Disaster Resilience)

Time	Title	Program No.
13:30	**Depth dependence of stress sensitivity of seismic velocity changes as inferred from noise correlation analyses at Izu-Oshima volcano, Japan** Tomoya Takano, Takeshi Nishimura, Hisashi Nakahara	S03-5-01
13:45	**Observation of coseismic and postseismic velocity changes for deep borehole seismic stations in the Kanto area** Manuel Hobiger, Ulrich Wegler, Katsuhiko Shiomi, Hisashi Nakahara, Kazuo Yoshimoto	S03-5-02
14:00	**Monitoring volcanic and geothermal fields using seismic noise: the case study of the Las Tres Virgenes geothermal field (Mexico)** Marco Calo, Erik Alberto Lopez Mazariegos, Valente Ramos Avila, Javier Francisco Lermo Samaniego	S03-5-03
14:15	**Anisotropic S-wave velocity change in the shallow subsurface associated with the 2016 Kumamoto earthquakes** Kaoru Sawazaki, Tatsuhiko Saito, Tomotake Ueno, Katsuhiko Shiomi	S03-5-04

14:30	**Spatio-temporal changes of seismic scattering properties associated with the dike intrusion on 15 August 2015 at Sakurajima volcano, Japan, detected by seismic interferometry** Takashi Hirose, Hisashi Nakahara, Takeshi Nishimura	S03-5-05
14:45	**Characterization and monitoring of ambient vibrations of a rock slope close to collapse** Jan Burjanek, Donat Faeh	S03-5-06

Session: **S03-P**
Type: Poster
Date: Tuesday, August 1/ Wednesday, August 2, 2017
Time: 15:30 - 16:30
Room: Shinsho Hall

Title	Program No.
Separation of intrinsic attenution and scattering loss for the contiguous US Tom Eulenfeld, Ulrich Wegler	S03-P-01
Spatial variations of intrinsic absorption and scattering loss in Taiwan based on a Multiple Lapse Time Window Analysis Kevin Gillet, Ludovic Margerin, Shu-Huei Hung, Marie Calvet	S03-P-02
Significant anomalies in high-frequency seismograms for intra-slab earthquakes observed in Kanto area, Japan: Importance of mode-conversion scattering Nozomi Kanaya, Takuto Maeda, Kazushige Obara, Akiko Takeo	S03-P-03
Amplitude fluctuation of seismic waves in the crust Kazuo Yoshimoto, Shunsuke Takemura, Manabu Kobayashi	S03-P-04
Shallow S-Wave Velocity Structures of the Northern Taichung Area, Taiwan, Using Microtremor Array Data Huey-Chu Huang, Tien-Han Shih, Cheng-Feng Wu	S03-P-05
Comparison three applications of microtremor analysis for investigating shallow S-wave velocity structure in the Western plain of Taiwan Chun-Te Chen, Kuo-Liang Wen	S03-P-06
Elastic Velocity Change associated with the 2016 Kumamoto Earthquakes, Japan Tomotake Ueno, Tatsuhiko Saito, Kaoru Sawazaki, Katsuhiko Shiomi	S03-P-07
A temporal and spatial change in seismic velocity caused by the 2016 Kumamoto earthquake using cross-correlations of ambient seismic noise Hiro Nimiya, Tatsunori Ikeda, Takeshi Tsuji	S03-P-08
Temporal change of subsurface structure near Mt. Aso inferred from seismic interferometry using V-net vertical array data Yuta Mizutani, Kiwamu Nishida, Yosuke Aoki	S03-P-09
Seismic velocity variation within the Tatun Volcano Group, Northern Taiwan, from ambient noise analysis Ya-Chuan Lai, Cheng-Horng Lin, Hsiao-Fen Lee, TVO Team	S03-P-10
Study of repeating events in the Jalisco subduction zone, Mexico Guillermo Gonzalez, Allen Husker, William Frank, Leticia Avila	S03-P-11
The study of the high-frequency microseismic noise at the Russian Platform Alina Besedina, Ivan Batukhtin, Alexey Ostapchuk	S03-P-12

S04. Historical and macroseismic studies of earthquakes

Session: **S04-1**
Session title: Historical and macroseismic studies of earthquakes I
Type: Oral
Date: Thursday, August 3, 2017
Time: 08:30 - 10:00
Room: Room 403
Chairs: Toshitaka Baba (Tokushima University)
Paola Albini (Istituto Nazionale di Geofisica e Vulcanologia)

Time	Title	Program No.
08:30	**Revision of the world's best-known recurrence pattern of historical subduction earthquakes along the Nankai trough off southwest Japan and their relationship with large inland earthquakes** Katsuhiko Ishibashi	S04-1-01 invited
09:00	**A possible tsunami caused by a submarine landslide in 1512 at the Nankai trough, Japan** Toshitaka Baba, Taiki Okada, Juichiro Ashi, Toshiya Kanamatsu	S04-1-02
09:15	**Hot Spring Anomalies Observed in Kumamoto Prefecture Associated with the 1946 Nankai Earthquake** Yasuyuki Kano	S04-1-03
09:30	**Earthquakes before 6 April 1667 in southern Dalmatia and Montenegro** Paola Albini, Andrea Rovida	S04-1-04

09:45 **The 1895 Ljubljana earthquake: can the intensity data points discriminate which one of the nearby faults was the causative one?** S04-1-05
Lara Tiberi, Giovanni Costa, Petra Jamsek Rupnik, Ina Cecic, Peter Suhadolc

Session: **S04-2**
Session title: Historical and macroseismic studies of earthquakes II
Type: Oral
Date: Thursday, August 3, 2017
Time: 10:30 - 12:00
Room: Room 403
Chairs: Ritsuko S. Matsu'ura (Association for the Development of Earthquake Prediction)
Kenji Satake (University of Tokyo)

Time	Title	Program No.
10:30	**The Innsbruck earthquake of 22nd December 1689** Christa Hammerl	S04-2-01 invited
11:00	**A New Approach to Comprehend Historical Tsunami Source** Ritsuko S. Matsu'ura, Yuta Mitsuhashi, Yukitoshi Fukahata	S04-2-02
11:15	**Is the survival rate a clue to estimate the location of epicenter of historical earthquakes?** Taku Komatsubara	S04-2-03
11:30	**Value of macroseismic information in earthquake studies in XX century: two case studies** Ruben Tatevossian, Nina Mokrushina	S04-2-04
11:45	**From historical seismology to seismogenic source models, 20 years on: results and challenges** Gianluca Valensise, Pierfrancesco Burrato, Umberto Fracassi, Paola Vannoli	S04-2-05

Session: **S04-3**
Session title: Historical and macroseismic studies of earthquakes III
Type: Oral
Date: Thursday, August 3, 2017
Time: 13:30 - 15:00
Room: Room 403
Chairs: Marcelo Assumpcao (University of Sao Paulo)
Kenji Satake (University of Tokyo)

Time	Title	Program No.
13:30	**A STRUCTURED AND HIERARCHICAL DATABASE OF MEXICAN HISTORICAL EARTHQUAKES: 1469 TO 1912** Gerardo Suarez, Carlos Chico, Daniel Ruiz	S04-3-01 invited
14:00	**Dynamic Rupture Modeling of Historic, Pre-Instrumental Earthquakes on the San Andreas and San Jacinto Faults, Southern California** Julian Lozos	S04-3-02
14:15	**THE 7TH JULY, 1923, CANAL DE BERDUN EARTHQUAKE, IN THE PYRENEES. ITS MACROSEISMIC FIELD FROM CONTEMPORARY RECORDS** Josep Batllo, Jose Manuel Martinez Solares	S04-3-03
14:30	**The newly discovered 1885 earthquake in the French Guiana - Brazil border, 6.0 mb, the largest historical mid-plate event in South America** Marcelo Assumpcao, Alberto Veloso	S04-3-04
14:45	**An intensity database for earthquakes on the Highveld of South Africa from 1840 to 1950** Nicolette S. Flint	S04-3-05

Session: **S04-4**
Session title: Historical and macroseismic studies of earthquakes IV
Type: Oral
Date: Thursday, August 3, 2017
Time: 16:30 - 18:00
Room: Room 403
Chairs: Takeo Ishibe (Association for the Development of Earthquake Prediction)
Paola Albini (Istituto Nazionale di Geofisica e Vulcanologia)

Time	Title	Program No.
16:30	**Methodology to Determine the Parameters of Historical Earthquakes in China** Jian Wang, Guoliang Lin, Zhe Zhang	S04-4-01 invited
17:00	**Document database for historical earthquakes around Tokyo area** Kenji Satake, Jun Muragishi, Akihito Nishiyama, Masaharu Ebara, Toshifumi Yata, Takeo Ishibe	S04-4-02
17:15	**Estimation of source regions of large earthquakes from felt reports of JMA seismic intensity database - Evaluation of applicability to historical large earthquakes -** Takeo Ishibe, Ritsuko S. Matsu'ura, Koji Iwasa, Ryoichi Nakamura, Kenji Satake	S04-4-03
17:30	**Historical Earthquake of Georgia** Nino Tsereteli, Otar Varazanashvili	S04-4-04
17:45	**How to Cope with Earthquakes in Himalaya?** Harsh K Gupta	S04-4-05

Session: **S04-P**
Type: Poster
Date: Thursday, August 3/ Friday, August 4, 2017
Time: 15:30 - 16:30 / 15:00 - 16:00
Room: Event Hall

Title	Program No.
Development of historical earthquake and volcanic activity database using historical diaries Akihito Nishiyama, Masaharu Ebara, Akihiko Katagiri, Yusuke Oishi, Kenji Satake	S04-P-01
Source area and magnitude of an aftershock following the 1854 Ansei-Nankai earthquake Haruo Horikawa, Ichiro Nakanishi	S04-P-02
What age distributions of stone lanterns tell about historical earthquakes?: case studies at three sites in Japan Mamoru Kato, Jun Hioka	S04-P-03
The Japan GIS Database of the Historical Disaster using research data of Archeological excavation, Geological survey and Historical documents Taisuke Murata, Nobuhiko Koike	S04-P-04
Numerical reconstruction of the source rupture and strong ground motions of the 1935 Hsinchu-Taichung Earthquake, Taiwan from historical triangulation data Ming-Hsuan Yen, Shiann-Jong Lee, Kuo-Fong Ma	S04-P-05
The large Hyuga-nada earthquake on June 30th, 1498 is a fake earthquake −Examination of the damage descriptions in Kyushu in the war chronicle "Kyusyu-gunki"− Tomoya Harada, Akihito Nishiyama, Kenji Satake, Takashi Furumura	S04-P-06
Revisiting source parameters of the 1906 Meishan, Taiwan earthquake from full-waveform measurements of historical records Yiwun Liao, Ming-Che Hsieh, Kuo-Fong Ma	S04-P-07

S05. Preservation and usage of analog seismogram archives

Session: **S05-1**
Session title: Preservation and usage of analog seismogram archives I
Type: Oral
Date: Friday, August 4, 2017
Time: 08:30 - 10:00
Room: Room 403
Chairs: Emile Okal (Northwestern University)
Paul Richards (Columbia University, New York)

Time	Title	Program No.
08:30	**On guidelines for preservation and usage of analog seismogram archives** Paul Richards	S05-1-01 invited
08:45	**Twenty-five years of activity of the ESC Working groups devoted to the preservation of the tangible and intangible heritage of Euro-Mediterranean seismology** Graziano Ferrari	S05-1-02 invited
09:00	**The contribution of the Sismos project to the preservation, dissemination and scientific usage of the material heritage of instrumental seismology of Euro-Mediterranean area** Graziano Ferrari	S05-1-03 invited
09:15	**A brief introduction to the analog seismograms storage in China** Ruifeng Liu, Leiyu Mou	S05-1-04 invited
09:30	**Analog Seismogram Archives at Earthquake Research Institute, the University of Tokyo** Kenji Satake, Hiroshi Tsuruoka, Satoko Murotani	S05-1-05 invited
09:45	**The current status of archives of the old analog seismograms in Japan, and some examples of their preliminary contribution to seismology** Ritsuko S. Matsu'ura, Norihito Umino, Yoshiaki Tamura, Yoshihisa Iio, Minoru Kasahara	S05-1-06 invited

Session: **S05-2**
Session title: Preservation and usage of analog seismogram archives II
Type: Oral
Date: Friday, August 4, 2017
Time: 10:30 - 12:00
Room: Room 403
Chairs: Paul Richards (Columbia University, New York)
Graziano Ferrari (National Institute of Geophysics and Volcanology)

Time	Title	Program No.
10:30	**Historical seismograms: Preservation efforts for an endangered species** Emile Okal	S05-2-01 invited
10:45	**Modern methods applied to historical seismograms: Perspective and examples** Emile Okal	S05-2-02 invited
11:00	**Instrumental polarities of the most important historical seismographs of the Euro-Mediterranean area** Graziano Ferrari, Barbara Palombo, Rodolfo Console, Paola Vannoli	S05-2-03
11:15	**PRESERVING ANALOGUE SEISMOGRAMS OF REGIONAL NETWORKS AND OTHER DOCUMENTS. EXPERIENCE AT THE INSTITUT CARTOGRAFIC I GEOLOGIC DE CATALUNYA (ICGC)** Josep Batllo, Jose Antonio Jara, Judith Unamuno, Maria Teresa Merino	S05-2-04
11:30	**Observations of large earthquakes in the Mexican subduction zone over 110 years** Vala Hjorleifsdottir, Shri Krishna Singh, Bjorn Lund, Chen Ji	S05-2-05
11:45	**ANALYSIS OF THE ANALOG SEISMOGRAMS RECORDED DURING THE NOVEMBER 19, 1912 (M~7.0) ACAMBAY, CENTRAL MEXICO EARTHQUAKE: TOWARDS A FINITE SOURCE INVERSION** Raul Daniel Corona, Miguel Angel Santoyo	S05-2-06

Session: **S05-3**
Session title: Preservation and usage of analog seismogram archives --- Panel Discussion
Type: Oral
Date: Friday, August 4, 2017
Time: 13:30 - 15:00
Room: Room 403
Chairs: Paul Richards (Columbia University, New York)
Graziano Ferrari (National Institute of Geophysics and Volcanology)
Panelists: Paul Richards, Graziano Ferrari, Emile Okal, Ruifeng Liu, Kenji Satake, Ritsuko S. Matsu'ura, Vala Hjorleifson

Session: **S05-P**
Type: Poster
Date: Thursday, August 3/ Friday, August 4, 2017
Time: 15:30 - 16:30 / 15:00 - 16:00
Room: Event Hall

Title	Program No.
Database of digitized data of analog seismic and tsunami records for historical earthquakes in Japan Satoko Murotani, Kenji Satake, Hiroshi Tsuruoka, Hiroe Miyake, Toshiaki Sato, Tetsuo Hashimoto, Hiroo Kanamori, Masahiro Osako	S05-P-01
HERP data retrieval system of JMA analog seismograms Mitsuko Furumura, Koji Iwasa, Yasunori Suzuki, Tomotsugu Demachi, Takeo Ishibe, Ritsuko S. Matsu'ura	S05-P-02
A trial application of analog seismograms of the Kanto-Tokai observation network for crustal observation to the detection of deep low frequency tremor Takanori Matsuzawa, Tetsuya Takeda	S05-P-03
Source parameters of the 1952 Pyeongyang, North Korea, earthquake Tae-Seob Kang, Myung-Soon Jun	S05-P-04
STUDY OF THE 7TH JULY, 1923, CANAL DE BERDUN EARTHQUAKE, IN THE PYRENEES FROM CONTEMPORARY SEISMOGRAMS AND BULLETINS Rosa Martin, Daniel Stich, Josep Batllo, Ramon Macia, Jose Morales	S05-P-05
ROMANIAN NETWORK OF ANALOG SEISMOGRAMS: CONTRIBUTION TO IMPROVE GLOBAL EARTHQUAKE CATALOGS Daniel Nistor Paulescu, Eugen Oros, Mircea Radulian, Elena Manea	S05-P-06

S06. Advancement in methodologies for CTBT monitoring

Session: **S06-1**
Session title: Advancement in methodologies for CTBT monitoring
Type: Oral
Date: Wednesday, August 2, 2017
Time: 16:30 - 18:00
Room: Room 401
Chairs: Tormod Kvaerna (NORSAR)
Michelle Grobbelaar (Council for Geoscience)

Time	Title	Program No.
16:30	**Trends in ground-based nuclear explosion monitoring research and development** Michael Pasyanos, Monica Maceira, Dale Anderson, Stephen Arrowsmith, Michael Begnaud, Philip Blom, Leslie Casey, Garrett Euler, Sean Ford, Michael Foxe, Jonathan MacCarthy	S06-1-01
16:45	**The ISC datasets for monitoring research** Dmitry Storchak, James Harris, Konstantinos Lentas	S06-1-02
17:00	**Synthetic seismograms of explosive sources calculated by the Earth Simulator** Seiji Tsuboi, Hiroyuki Matsumoto, Mikhail Rozhkov, Josh Stachnik	S06-1-03
17:15	**Model ensembles for estimation of seismic travel time and event location uncertainty** Stephen Myers, Nathan Simmons	S06-1-04
17:30	**On similarities and differences of signals measured by IMS stations from five DPRK underground tests** Dmitry Bobrov, Ivan Kitov, Mikhail Rozhkov, Pierrick Mialle, Peter Nielsen	S06-1-05 invited
17:45	**Source array analysis for accurate relative event location at the North Korea nuclear test site** Steven Gibbons, Tormod Kvaerna, Sven Peter Naesholm, Svein Mykkeltveit	S06-1-06

Session: **S06-P**
Type: Poster
Date: Tuesday, August 1/ Wednesday, August 2, 2017
Time: 15:30 - 16:30
Room: Event Hall

Title	Program No.
Seismic wave analysis of North Korean nuclear tests using seismographic networks in Japan Kazunori Yoshizawa, Ryo Narita	S06-P-01
Long-range underwater acoustic propagation from controlled underwater sources received at IMS hydroacoustic stations Tomoaki Yamada, Georgios Haralabus, Mario Zampolli, Kevin Heaney	S06-P-02
The CTBTO Link to the ISC Database Konstantinos Lentas, Dmitry Storchak, James Harris	S06-P-03
Similarities and differences of a hydrogeological response to underground nuclear explosions and earthquakes Evgeny Vinogradov, Ella Gorbunova, Alina Besedina	S06-P-04

IASPEI Earthquake Hazard, Risk and Strong Ground Motion

S07. Strong ground motions and Earthquake hazard and risk

Session: **S07-1**
Session title: Amplification of ground motions and GMPEs
Type: Oral
Date: Monday, July 31, 2017
Time: 08:30 - 10:00
Room: Main Hall
Chairs: John Clinton (ETH Zurich)
Masumi Yamada (Kyoto University)

Time	Title	Program No.
08:30	**Source parameters, path attenuation, and site effects from strong-motion recordings of the Wenchuan aftershocks (2008-2013) using nonparametric generalized inversion technique** Yefei Ren, Ruizhi Wen, Hongwei Wang, Dongwang Tao	S07-1-01
08:45	**Estimation of Source, Path and Site Effects in Hangay region Mongolia using a dense broadband seismic array** Baigalimaa Ganbat, Toshiaki Yokoi, Takumi Hayashida	S07-1-02
09:00	**Estimation of site amplification using ground motion records at strong motion stations in Turkey** Hiroaki Yamanaka, Ozgur Ozmen, Ulubey Ceken, Mehmet Alkan	S07-1-03

09:15 **Preparation of 1D velocity structure using records from moderate sized earthquakes** S07-1-04
Subeg Bijukchhen, Nobuo Takai, Michiko Shigefuji, Masayoshi Ichiyanagi, Tsutomu Sasatani

09:30 **Regional Difference of Ground Motion for Shallow Crustal Earthquake in Taiwan and California** S07-1-05
Shu-Hsien Chao, Chiao-Chu Hsu

Session: **S07-2**
Session title: Hazard and risk assessment I
Type: Oral
Date: Monday, July 31, 2017
Time: 10:30 - 12:00
Room: Main Hall
Chairs: Massimiliano Pittore (GFZ Potsdam)
Toshiaki Yokoi (BRI)

Time	Title	Program No.
10:30	**Seismic Hazard Assessment for DAM Site Candidates in the East Aceh, Indonesia** Yudhicara Hidayat, Terianto Hidayat, Yopi Siswono, Hengky Pratama	S07-2-01
10:45	**Determination of Design Spectra with considering different site classification, in Andisheh suburb of Bandar Abbas, South of Iran** Maryam Sedghi, Ramak Heidari, Abbas Jazayeri, Mohamadreza Gheitanchi	S07-2-02
11:00	**Joint project on seismic hazards in the Indo-Gangetic Plain, India: Results from Ground Motion Sensor network** Rajender Chadha, Kazuki Koketsu, Srinagesh Davuluri, Shri Krishna Singh, Satoko Oki, Srinivas Dakuri	S07-2-03
11:30	**Seismic Hazard Assessment of the 1995 Kobe Earthquake: Before and After** Hiroe Miyake	S07-2-04
11:45	**Recent Seismicity and Potential Earthquake Risk in Major Ethiopian Cities** Atalay Ayele	S07-2-05

Session: **S07-3**
Session title: Hazard and risk assessment II
Type: Oral
Date: Tuesday, August 1, 2017
Time: 08:30 - 10:00
Room: Main Hall
Chairs: Masumi Yamada (Kyoto University)
Massimiliano Pittore (GFZ Potsdam)

Time	Title	Program No.
08:30	**Reconciliation of Canada's 5th Generation Seismic Hazard Model results with those from the OpenQuake-engine** John Adams, Trevor Allen, Stephen Halchuk	S07-3-01
08:45	**A Novel Geodetic-based Probabilistic Seismic Hazard Model for Iran** Alireza Lotfi, Hamid Zafarani, Alireza Khodaverdian	S07-3-02
09:00	**PERSIA, a novel time-dependent seismic hazard model for Iran, preliminary results for the Greater Tehran and surrounding areas** Hamid Zafarani, Seyed Mostafa Jalalalhosseini	S07-3-03
09:15	**ANALYSIS OF RESPONSE SPECTRA OF CHARACTERISTIC GROUND MOTIONS RECORDED IN NORTH EAST INDIAN REGION** Babita Sharma	S07-3-04
09:30	**TIME-DEPENDENT SEISMIC HAZARD DUE TO MINING-INDUCED EARTHQUAKES IN GAUTENG, SOUTH AFRICA** Brian Zulu, Vunganai Midzi, Brassnavy Manzunzu, Raymond Durrheim	S07-3-05
09:45	**SEISMIC RISK FOR CITIES AROUND THE LAKE KIVU BASIN, WESTERN BRANCH OF THE EAST-AFRICAN RIFTS SYSTEM** Wafula Mifundu, Kongbo Tambala	S07-3-06

Session: **S07-4**
Session title: Hazard and risk assessment, and data processing strategies
Type: Oral
Date: Tuesday, August 1, 2017
Time: 10:30 - 12:00
Room: Main Hall
Chairs: Massimiliano Pittore (GFZ Potsdam)
Toshiaki Yokoi (BRI)

Time	Title	Program No.
10:30	**Rapid estimation of ground-shaking maps for seismic emergency management in Turkey** Ulubey Ceken, Eren Tepeugur, Turgay Kuru, Elcin Gok, Caglar Ozer, Orhan Polat	S07-4-01
10:45	**Development of a pilot seismic risk assessment for British Columbia, Canada, through the application of Global Earthquake Model's OpenQuake** Alison L. Bird, J. Murray Journeay, Trevor I. Allen, John F. Cassidy, Nicky Hastings, Michelle M. Cote	S07-4-02
11:00	**Ground motion predictions in the backdrop of recent claims for mega earthquake in Bangladesh** Tahmeed Malik Al-Hussaini	S07-4-03
11:15	**Automatic detection of earthquakes, quarry blasts, rockfalls and avalanches on the Swiss permanent broadband network** Conny Hammer, Donat Faeh	S07-4-04
11:30	**Evaluation of the P-wave detection method using higher order statistics** Masumi Yamada, Hirofumi Ishida	S07-4-05

Session: **S07-5**
Session title: Simulation for scenario earthquakes and strong motion monitoring / processing
Type: Oral
Date: Tuesday, August 1, 2017
Time: 13:30 - 15:00
Room: Main Hall
Chairs: Masumi Yamada (Kyoto University)
John Clinton (ETH Zurich)

Time	Title	Program No.
13:30	**Simulation of Strong Ground Motions in and around Iwaki City, Fukushima Prefecture, using Pseudo Point-source Model** Takumi Hayashida, Toshiaki Yokoi, Hiroto Nakagawa, Toshihide Kashima, Shin Koyama	S07-5-01
13:45	**Inversion seismic parameters model for stochastic ground motion simulation in Taiwan** Jyun-Yan Huang, Kuo-Liang Wen, Che-Min Lin, Chiao-Chu Hsu	S07-5-02
14:00	**Strong ground motion simulations for potential earthquakes around Taiyuan, China based on dynamic rupture sources** Zhenguo Zhang, Wei Zhang, Xiaofei Chen	S07-5-03
14:15	**3D numerical modeling of seismic wave propagation and amplification in Qaidam basin** Yanyang Chen, Takashi Furumura, Yanbin Wang	S07-5-04
14:30	**Strong-Motion Observation Network in the Philippines** Rhommel Grutas, Robert Tiglao, Melchor Lasala, Janila Deocampo, Ishmael Narag, Renato Solidum, Jr.	S07-5-05

Session: **S07-6**
Session title: Site effects I
Type: Oral
Date: Tuesday, August 1, 2017
Time: 16:30 - 18:00
Room: Main Hall
Chairs: Jamison Steidl (University of California, Santa Barbara)
Massimiliano Pittore (GFZ Potsdam)

Time	Title	Program No.
16:30	**Relationship between the Shear Velocities from Microtremor Observations and Seismic Cone Penetration Test Results** Rusnardi Rahmat Putra, Junji Kiyono, Sai Vanapalli	S07-6-01
16:45	**HVSR site classification method for Chinese seismic code based on Japanese strong motion data** Ruizhi Wen, Yefei Ren, Kun Ji, Haiying Yu	S07-6-02
17:00	**Nonlinear Site Response at KiK-net KMMH16 (Mashiki) and Heavily Damaged Sites during the 2016 Kumamoto Earthquake, Japan** Hiroyuki Goto, Yoshiya Hata, Masayuki Yoshimi, Nozomu Yoshida	S07-6-03
17:15	**Long-period later phases observed in the Echigo Plain, Japan during the deep earthquake in the west off Ogasawara Islands of May 30, 2015** Tomiichi Uetake, Kazuhito Hikima, Masatoshi Fujioka, Yoshihiro Sawada, Shutaro Sekine	S07-6-04
17:30	**Revision of 3D Model of the Kanto Basin based on Earthquake Records of MeSO-net** Haruo Yoshida, Yoshiyuki Sato, Kikuji Kobayashi, Naoko Umeda, Shinichi Sakai, Hirata Naoshi	S07-6-05
17:30	**Direct evaluation of site amplification factors based on observed motions of earthquakes and microtremors** Hiroshi Kawase, Fumiaki Nagashima, Kenichi Nakano, Yuta Mori	S07-6-06

Session: **S07-7**
Session title: Site effects II
Type: Oral
Date: Wednesday, August 2, 2017
Time: 08:30 - 10:00
Room: Main Hall
Chairs: Toshiaki Yokoi (BRI)
Jamison Steidl (University of California, Santa Barbara)

Time	Title	Program No.
08:30	**Shallow shear wave velocity model of Taiwan constructed from Receiver Function Analysis of strong motion stations** Che-Min Lin, Kuo-Liang Wen, Chun-Hsiang Kuo, Jyun-Yan Huang, Hung-Hao Hsieh	S07-7-01
08:45	**Liquefaction Monitoring and Observations of Excess Pore Pressure Generation During Strong Motion** Jamison Steidl	S07-7-02
09:00	**Temporal nonlinear site response during Kumamoto Mw7.0 earthquake inferred from borehole strong motion data** Junju Xie	S07-7-03
09:15	**DETERMINATION OF DEEP SUBSURFACE SHAREWAVE VELOCITY STRUCTURE IN THE CENTRAL PART OF THE KATHMANDU BASIN, NEPAL USING BROAD BAND SEISMOGRAPH ARRAYS FOR LONG PERIOD MICROTREMOR** Mukunda Bhattarai, Dinesh Nepali, Santosh Dhakal, Suresh Shrestha, Toshiaki Yokoi, Takumi Hayashida	S07-7-04

09:30 **The spatial variability of the directionally dependent microtremor horizontal-to-vertical spectral ratios at the boundary of the basin edge in Uji, Japan** S07-7-05
Shinichi Matsushima, Keita Sato, Yuri Fukuoka

Session: **S07-8**
Session title: Strong motion and seismic sources I
Type: Oral
Date: Wednesday, August 2, 2017
Time: 10:30 - 12:00
Room: Main Hall
Chairs: Jamison Steidl (University of California, Santa Barbara)
John Clinton (ETH Zurich)

Time	Title	Program No.
10:30	**Ground motion pattern generated by the undercrustal seismic source of the Vrancea region, Romania** Luminita Angela Ardeleanu, Cristian Neagoe, Bogdan Grecu, Bogdan Zaharia, Andreea Craiu	S07-8-01
10:45	**Strong ground motions due to the 2016 mid Tottori prefecture earthquake, Japan** Takao Kagawa, Tatsuya Noguchi, Shohei Yoshida, Hiroshi Ueno, Sho Nakai, Kazu Yoshimi, Shoya Arimura, Shinji Yamamoto	S07-8-02
11:00	**Peculiar strong ground motions from the very deep (h=680 km) Mw 7.9 Ogasawara Islands earthquake of 2015 May 30** Takashi Furumura, Brian LN Kennett	S07-8-03
11:15	**Slip Rates Inversion of 3-D Faults around Ordos Constrained by GPS and Leveling Observation** Yilei Huang, Shiyong Zhou, Shimin Wang	S07-8-04
11:30	**Near-field long-period strong ground motion during the 2016 Mw 7.0 Kumamoto earthquake** Kojiro Irikura, Susumu Kurahashi	S07-8-05

Session: **S07-9**
Session title: Strong motion and seismic sources II
Type: Oral
Date: Wednesday, August 2, 2017
Time: 13:30 - 15:00
Room: Main Hall
Chairs: Toshiaki Yokoi (BRI)
Jamison Steidl (University of California, Santa Barbara)

Time	Title	Program No.
13:30	**Influence of vertical acceleration in seismic hazard. Observations of earthquakes in Ecuador** Juan-Carlos Singaucho	S07-9-01
13:45	**Validating a source model for the 2011 Tohoku Earthquake using a dense strong-motion array** Atsushi Nozu	S07-9-02
14:00	**Features of long-period spectrum of SMART-1 array strong motion records** Haiying Yu, Baofeng Zhou, Xuan Xu, Ruizhi Wen, Dongwang Tao	S07-9-03
14:15	**Processing Strategy On Strong Motion Records Of Bizarre Waveforms** Baofeng Zhou, Haiying Yu, Ruizhi Wen, Dongwang Tao	S07-9-04
14:30	**Site-specific investigations in the ongoing renewal project of the Swiss strong motion network (SSMNet)** Manuel Hobiger, Donat Faeh, Clotaire Michel, Paolo Bergamo, Walter Imperatori, John Clinton, Carlo Cauzzi, Eric Zimmermann, Franz Weber, Blaise Duvernay	S07-9-05

Session: **S07-P**
Type: Poster
Date: Tuesday, August 1/ Wednesday, August 2, 2017
Time: 15:30 - 16:30
Room: Event Hall

Title	Program No.
Seismic Microzonation and Site Effect Response of Al Auja District Hatem Alwahsh	S07-P-01
Source effects of intraslab and interplate earthquakes off Miyagi Prefecture in Northeastern Japan and their relation to source depths Yasumaro Kakehi	S07-P-02
Strong Ground Motion Simulation by Combining Stochastic Green's Function Method with Hybrid Slip Model for February 6, 2016 Meinong, Taiwan Earthquake Cheng-Feng Wu, Huey-Chu Huang	S07-P-03
Nonlinear Site Response During the 2016 Meinong, Taiwan Earthquake Kuo-Liang Wen, Chun-Te Chen, Shun-Chiang Chang	S07-P-04
Evaluation of site effect by aftershock observation data due to the 2016 mid Tottori prefecture earthquake and microtremor observation in the mid area of Tottori Prefecture, Japan Tatsuya Noguchi, Takao Kagawa, Shohei Yoshida, Sho Nakai, Hiroshi Ueno, Kazu Yoshimi, Shoya Arimura, Shinji Yamamoto, Hayato Nishikawa	S07-P-05
The Probabilistic Seismic Hazard Assessment of South Africa Vunganai Midzi, Brassnavy Manzunzu, Thifhelimbilu Mulabisana, Brian Zulu, Tebogo Pule, Sinovuyo Myendeki, Ganesh Rathod	S07-P-06

Generation conditions of long-period ground motions in the Kanto Basin S07-P-07
Yurie Mukai, Takashi Furumura

Shallow to deep velocity structure modeling of Oita Plain, Japan, using microtoremor and borehole data S07-P-08
Masayuki Yoshimi, Takumi Hayashida, Shinichi Matsushima, Hiroshi Kawase, Hiroshi Takenaka, Nobuyuki Yamada, Hiroe Miyake, Takeshi Sugiyama, Tetsuyoshi Tokumaru, Haruhiko Suzuki, Atsushi Yatagai, Hisanori Matsuyama

Strong Ground-Motion Simulation of 2016 Meinong Earthquake Using Empirical Green's Function Method S07-P-09
Ying-Chi Chen, Huey-Chu Huang

Segmentation of slow slip events in south central Alaska possibly controlled by a subducted oceanic plateau S07-P-10
Haotian Li, Meng Wei, Shiyong Zhou, Duo Li, Yajing Liu, Younghee Kim

Difference in Ground Motion and Seismic Source Characteristics Between the Surface and Buried Rupture Crustal Earthquake in Japan S07-P-11
Shohei Yoshida, Takao Kagawa, Tatsuya Noguchi

Combining deterministic simulation of ground motions and probabilistic approach: Large scale simulation for heterogeneous source models by FDM reciprocity method S07-P-12
Anatoly Petukhin, Haruko Sekiguchi, Hiroshi Kawase, Katsuhiro Kamae, Masato Tsurugi

Maps of Volcanic and Seismic Hazards on the Web S07-P-13
Jayvie Nadua, Analyn Aquino, Kervin Macaranas, Enrico Santos, Mabelline Cahulogan, Renato Solidum, Jr.

Characteristics of Seismic Response of the Taipei Basin S07-P-14
Kou-Cheng Chen, Jeen-Hwa Wang

Surface deformations caused by underground nuclear explosions S07-P-15
Ella Gorbunova, Evgeny Vinogradov, Alina Besedina

Broadband Ground Motion along the Joetsu Shinkansen during the 2004 Chuetsu Earthquake and Aftershock Sequence S07-P-16
Yifei Chen, Hiroe Miyake

Multi-use seismic stations for earthquake early warning S07-P-17
Bruce Townsend, Stephen Kilty, Geoffrey Bainbridge, David Easton, Tim Parker

Studies on Qs of Kyushu district in Japan S07-P-18
Kenichi Nakano, Shigeki Sakai

Estimation of Empirical Green's Tensor Spatial Derivative Elements: A Preliminary Study using Strong Motion Records in Southern Fukui Prefecture, Japan S07-P-19
Michihiro Ohori

S-wave structure in the Nansei Islands, Japan, inferred from microtremor array explorations S07-P-20
Nobuyuki Yamada, Hiroshi Takenaka, Masanao Komatsu

Effect of shallow S-wave velocity structure on ground motion characteristics at temporary aftershock observation stations of the 2016 Kumamoto earthquake S07-P-21
Kosuke Chimoto, Hiroaki Yamanaka, Seiji Tsuno, Hiroe Miyake, Nobuyuki Yamada

SATREPS MarDiM Project on Earthquake and Tsunami Disaster Mitigation in the Marmara Region and Disaster Education in Turkey S07-P-22
Seckin Ozgur Citak, Yoshiyuki Kaneda, Haluk Ozener, Nurcan Meral Ozel, Dogan Kalafat, Narumi Takahashi, Takane Hori, Muneo Hori, Mayumi Sakamoto, Ali Pinar, Asim Oguz Ozel, Ahmet Cevdet Yalciner, Gulum Tanircan, Ahmet Demirtas

The ground motion signature of supershear rupture in Burrdge-Andrews and free-surface-induced mechanisms S07-P-23
Jiankuan Xu, Xiaofei Chen

Observed Near-Fault Ground Motion Characteristics during the 2016 Kumamoto, Japan, Mainshock S07-P-24
Tomotaka Iwata, Kimiyuki Asano

Different spectra in the vertical seismic observation array S07-P-25
Osamu Murakami, Yasuhiro Asai, Hiroshi Ishii, Takahiro Kunitomo

Surface wave propagation and magnitude (Mj) overestimates in western Japan S07-P-26
Hiroki Kawamoto, Takashi Furumura

S08. Paleoseismology and paleotsunami studies: Their potential and limitation

Session: **S08-1**
Session title: Paleoseismology and paleotsunami studies: Their potential and limitation I
Type: Oral
Date: Friday, August 4, 2017
Time: 08:30 - 10:00
Room: Room 402
Chairs: Koji Okumura (Hiroshima University)
Shinji Toda (Tohoku University)

Time	Title	Program No.
08:30	**Paleoseismological evaluation and surface faults of the 2016 Kumamoto earthquake along Futagawa fault zone, central Kyushu, Japan** Takashi Azuma	S08-1-01 invited
09:00	**Paleoseismic history of the Hinagu fault zone, Kumamoto, Japan; Preliminary results of a trench excavation survey on the Takano-Shirahata segment** Yoshiki Shirahama, Yukari Miyashita, Takashi Azuma, Tetsuhiro Togo, Masao Kametaka, Yuji Suzuki	S08-1-02 invited
09:15	**Recent indications to improve evaluation of short active faults provided by the 2016 Kumamoto and Ibarakiken-hokubu, Japan, earthquakes** Shinji Toda, Daisuke Ishimura	S08-1-03 invited
09:30	**Late Quaternary Faulting Along the Different Segments of the Philippine Fault in Mindanao Island, Philippines** Jeffrey Perez, Hiroyuki Tsutsumi	S08-1-04 invited
09:45	**Paleoseismology of the Himalayan Frontal Zones** Koji Okumura, Javed Malik	S08-1-05 invited

Session: **S08-2**
Session title: Paleoseismology and paleotsunami studies: Their potential and limitation II
Type: Oral
Date: Friday, August 4, 2017
Time: 10:30 - 12:00
Room: Room 402
Chairs: Maria Teresa Ramirez Herrera (Universidad Nacional Autónoma de México)
Osamu Fujiwara (Geological Survey of Japan)

Time	Title	Program No.
10:30	**Large earthquakes in historical and pre-historical times in Switzerland: An overview of earthquake induced effects** Donat Faeh, Gabriela Gassner-Stamm, Michael Strasser, Remo Grolimund, Stephanie Wirth, Katrina Kremer	S08-2-01 invited
10:45	**Application of the paleoseismic record of great Cascadia earthquakes for use in the 2015 and 2020 National Building Code of Canada seismic hazard maps** John Adams, Stephen Halchuk, Garry Rogers, Trevor Allen	S08-2-02 invited
11:15	**The Great 1787 Earthquake (M 8.6) and Tsunami along the Mexican Subduction Zone – history, geology and tsunami hazard assessment** Maria Teresa Ramirez Herrera, Marcelo Lagos, Avto Goguitchaichvili, Maria Luisa Machain, Ana-Carolina Ruiz-Fernandez, Gerardo Suarez, Maria Ortuno, Margarita Caballero	S08-2-03 invited
11:30	**Has the unusual "mega-tsunami" ever occurred along the Nankai Trough?** Osamu Fujiwara	S08-2-04 invited
11:45	**A large slip area of the 2011 Tohoku-oki earthquake has been already ruptured by the 1611 Keicho Tsunami earthquake (Mw9.0)** Yuichiro Tanioka, Genta Fukuhara	S08-2-05 invited

Session: **S08-P**
Type: Poster
Date: Thursday, August 3/ Friday, August 4, 2017
Time: 15:30 - 16:30 / 15:00 - 16:00
Room: Event Hall

Title	Program No.
Description and interpretation of the surface ruptures in northwest of the outer rim of the Aso caldera triggered by Kumamoto Earthquake Hiroshi Une, Takayuki Nakano, Satoshi Fujiwara, Tomokazu Kobayashi, Yu Morishita, Kazumi Iwata, Hiroshi, P. Sato, Hiroshi Yagi	S08-P-01
Temporal clustering and occurrence probability of large earthquakes on active faults in Japan Hisao Kondo, Kazuhiro Iwakiri, Hirota Tani, Kenji Satake	S08-P-02

REFINEMENT OF PHILIPPINE TSUNAMI HAZARD MAPS: The TsuHaMEI Project S08-P-03
Analyn D. Aquino, Jayvie H. Nadua, Joan C. Salcedo, Maria Leonila P. Bautista, Ishmael C. Narag, Bartolome C. Bautista, Renato U. Solidum, Jr.

IASPEI Earthquake Generation Process

S09. Open session: Earthquake generation process - physics, modeling and monitoring for forecast

Session: **S09-1**
Session title: Open session: Earthquake generation process – physics, modeling and monitoring for forecast I
Type: Oral
Date: Tuesday, August 1, 2017
Time: 08:30 - 10:00
Room: Room 503
Chairs: Naoshi Hirata (ERI)
David Rhoades (GNS)

Time	Title	Program No.
08:30	**Round-the-world seismic echo effect in aftershock sequences of strong earthquakes: a statistical analysis** Alexey Zavyalov, Oleg Zotov, Anatol Guglielmi, Ivan Lavrov	S09-1-01 invited
08:45	**Synchronization of Stick-Slip Oscillator by Periodic External Forces –Implications for Earthquake Activity Rhythms-** Kazuro Hirahara	S09-1-02
09:00	**Synchronization and chaotic behavior of earthquake cycles in a model with interacting fault patches** Naoyuki Kato	S09-1-03
09:30	**Observations and modeling of short-term phenomena in the preparatory stage of large earthquakes** Kiyoshi Suyehiro, Selwyn Sacks, Paul Rydelek, Deborah Smith, Tetsuo Takanami	S09-1-04

Session: **S09-2**
Session title: Open session: Earthquake generation process – physics, modeling and monitoring for forecast II
Type: Oral
Date: Tuesday, August 1, 2017
Time: 10:30 - 12:00
Room: Room 503
Chairs: Alexey Zavyalov (Institute of Physics of the Earth RAS)
Naoshi Hirata (ERI)

Time	Title	Program No.
10:30	**Remote triggering of earthquakes as a possible stress-meter: the case of the 2016 M7.3 Kumamoto (Japan) mainshock** Bogdan Enescu, Kengo Shimojo, Anca Opris, Yuji Yagi	S09-2-01
10:45	**Withdrawn**	S09-2-02
11:00	**Coulomb Stress Transfer and Accumulation on the Sagaing Fault, Myanmar over the Past 110 years and Its Implications for Seismic Hazard** Xiong Xiong, Bin Shan, Yuming Zhou, Shengji Wei, Yongdong Li, Rongjiang Wang	S09-2-03
11:15	**Testing the Coulomb stress triggering hypothesis for three recent megathrust earthquakes** Takeo Ishibe, Yosihiko Ogata, Hiroshi Tsuruoka, Kenji Satake	S09-2-04
11:30	**Fluid injection effects on induced seismic activity in multi-degree-of-freedom rate-and-state model** Sergey Turuntaev, Vasily Riga	S09-2-05

Session: **S09-3**
Session title: Open session: Earthquake generation process – physics, modeling and monitoring for forecast III
Type: Oral
Date: Tuesday, August 1, 2017
Time: 13:30 - 15:00
Room: Room 503
Chairs: David Rhoades (GNS)
Alexey Zavyalov (Inst. of Physics of the Earth RAS)

Time	Title	Program No.
13:30	**Seismic valve as a driving mechanism of the 2014 aftershock sequences in West Bohemia** Tomas Fischer, Ctirad Matyska, Jens Heinicke, Sebastian Hainzl	S09-3-01
13:45	**A NEW APPROACH TO FAULT ZONE SEISMIC MONITORING** Svetlana Kishkina, Gevorg Kocharyan, Dmitriy Pavlov	S09-3-02
14:00	**Seismic sources under tensional regime - TRM and DEM approaches** Wojciech Debski, Piotr Klejment, Alicja Kosmala, Natalia Foltyn	S09-3-03

14:15	**Estimating the Locations of Past and Future Large Earthquake Ruptures in California using Recent M4 and Greater Events** John Ebel	S09-3-04
14:30	**CSEP-Japan earthquake predictability experiment for physics-based modeling and testing** Naoshi Hirata, Hiroshi Tsuruoka, Danijel Schorlemmer	S09-3-05

Session: **S09-P**
Type: Poster
Date: Tuesday, August 1/ Wednesday, August 2, 2017
Time: 15:30 - 16:30
Room: Event Hall

Title	Program No.
The relation between the deep lithospheric structure and observed seismicity in the European Arctic Galina Antonovskaya, Irina Basakina, Irina Fedorenko, Natalia Kapustian, Evgeniy Rogozhin, Alexey Zavyalov	S09-P-01
Postseismic Process of Moderate and Large Interplate Earthquakes within the Source Area of the Megathrust Earthquakes Along the Nankai Trough Mamoru Hyodo, Ryoichiro Agata, Tsuyoshi Ichimura, Takane Hori	S09-P-02
Time to instability of the seismic event triggered by SSE Makiko Ohtani, Nobuki Kame, Masao Nakatani	S09-P-03

S10. Development, testing and application of earthquake forecasting models

Session: **S10-1**
Session title: Development, testing and application of earthquake forecasting models
Type: Oral
Date: Tuesday, August 1, 2017
Time: 16:30 - 18:00
Room: Room 503
Chairs: David Rhoades (GNS Science)
John Ebel (Boston College)

Time	Title	Program No.
16:30	**Prospective evaluation of the CSEP-Japan earthquake forecasts experiments** Hiroshi Tsuruoka, Naoshi Hirata	S10-1-01
16:45	**Using GNSS data to analysis the earthquake potential of Sichuan-Yunnan region, western China** Fan Wang, Peng Zhang, Zhanyi Sun	S10-1-02
17:00	**Seismological and geodetic tools can jointly contribute to the understanding and prediction of earthquakes** Giuliano F. Panza, Antonella Peresan, Fernando Sanso', Mattia Crespi, Augusto Mazzoni, Andrea Nascetti	S10-1-03
17:15	**On what time scales can strain rates contribute to earthquake likelihood models?** David Rhoades, Bill Fry, Annemarie Christophersen	S10-1-04
17:30	**Reducing false alarms of annual forecast in the central China north-south seismic belt by reverse tracing of precursors (RTP)** Zhongliang Wu, Changsheng Jiang, Shengfeng Zhang	S10-1-05
17:45	**Break of slope in earthquake size distribution and aseismic deformation rate** Peter Shebalin, Inessa Vorovieva, Clement Narteau, Sergey Baranov	S10-1-06

Session: **S10-P**
Type: Poster
Date: Tuesday, August 1/ Wednesday, August 2, 2017
Time: 15:30 - 16:30
Room: Event Hall

	Title	Program No.
	The technology for automatic probabilistic prediction of earthquakes Valeri Gitis, Alexander Derendyaev	S10-P-01
	Application of earthquake forecasting models in central New Zealand following the November 2016 Kaikoura earthquake David Rhoades, Annemarie Christophersen, Matthew Gerstenberger, David Harte	S10-P-02
	Time-dependent neo-deterministic seismic hazard scenarios for the Italian territory: recent advances and testing issues Antonella Peresan, Vladimir Kossobokov, Giuliano F. Panza, Mattia Crespi	S10-P-03

S11. Geo & space technologies to study pre-earthquake processes: Observation, modeling, forecasting

Session: **S11-1**
Session title: Geo & space technologies to study pre–earthquake processes: Observation, modeling, forecasting I
Type: Oral
Date: Wednesday, August 2, 2017
Time: 08:30 - 10:00
Room: Room 503
Chairs: Dimitar Ouzounov (Chapman University)
Katsumi Hattori (Chiba University)

Time	Title	Program No.
08:30	**TEC anomalies immediately before large earthquakes: Review and perspective** Kosuke Heki, Liming He	S11-1-01 invited
08:45	**Modification of ionosphere before March 11 2011 Tohoku earthquake** Koichiro Oyama, C.H Chen, L Bankov, M Devi, K Ryu, J.Y Liu, H Liu, T Uozumi	S11-1-02 invited
09:00	**Characteristics of Ionospheric Electron Distribution for large Earthquakes around Japan** Katsumi Hattori, Mustafa Yagmur, Shinji Hirooka, Jann-Yenq Liu	S11-1-03 invited

Session: **S11-2**
Session title: Geo & space technologies to study pre–earthquake processes: Observation, modeling, forecasting II
Type: Oral
Date: Wednesday, August 2, 2017
Time: 10:30 - 12:00
Room: Room 503
Chairs: Dimitar Ouzounov (Chapman University)
Tiger Liu (National Central University)

Time	Title	Program No.
10:30	**Estimates of Seismic Danger in Japan by Coherence Properties of GPS Noise** Alexey Lyubushin	S11-2-01 invited
10:45	**Correlation between earthquake occurrence and the anomalous propagation of VHF radio waves indicated by the gain and the p-value of prediction maps produced by a simple objective algorithm in the Shimabara area, Kyushu, Japan** Sho Morita, Masao Nakatani, Toru Mogi	S11-2-02 invited
11:00	**Testing Geospace Technologies for Alerting Large Earthquakes: An Integrated Approach of Space and Ground Observations** Dimitar Ouzounov, Sergey Puienets, Tiger Liu, Katsumi Hattori, Manuel Hernández-Pajares, Alberto García-Rigo, Menas Kafatos	S11-2-03 invited

Session: **S11-P**
Type: Poster
Date: Tuesday, August 1/ Wednesday, August 2, 2017
Time: 15:30 - 16:30
Room: Event Hall

	Title	Program No.
	Quantification of Seismic Hazards with Detrended Fluctuation Analysis of Time Series: Case Studies of the Japanese Islands and California Denis Filatov, Alexey Lyubushin	S11-P-01
	Possible conjugated TEC anomalies preceding large earthquakes Liming He, Kosuke Heki	S11-P-02
	Variations of statistical parameters of the background seismic noise before strong earthquakes in Kamchatka Victoria Kasimova, Alexey Lyubushin, Galina Kopylova	S11-P-03

Clarification of the mechanism of VLF radiation intensity reduction before earthquakes observed by DEMETER and WWLLN data S11-P-04
Shoho Togo, Hidetoshi Nitta, Jean-Jacques Berthelier, Tatsuo Onishi, Masashi Kamogawa, Tetsuya Kodama, Toshiyasu Nagao

S12. An interdisciplinary approach towards earthquake prediction studies

Session: **S12-1**
Session title: An interdisciplinary approach towards earthquake prediction studies I
Type: Oral
Date: Wednesday, August 2, 2017
Time: 13:30 - 15:00
Room: Room 503
Chairs: Dimitar Ouzounov (Chapman University)
Toshiyasu Nagao (Tokai University)

Time	Title	Program No.
13:30	**Combining probabilistic seismicity models with precursory information: application to long-delayed aftershocks** Peter Shebalin	S12-1-01 invited
13:45	**Nowcasting Global Earthquakes** John Rundle	S12-1-02 invited
14:00	**integrated Study and Test for Earthquake Precursors (iSTEP-4)** Jann-Yenq Tiger Liu	S12-1-03 invited

Session: **S12-2**
Session title: An interdisciplinary approach towards earthquake prediction studies II
Type: Oral
Date: Wednesday, August 2, 2017
Time: 16:30 - 18:00
Room: Room 503
Chairs: Dimitar Ouzounov (Chapman University)
Katsumi Hattori (Chiba University)

Time	Title	Program No.
16:30	**Coupled interaction of deep Earth gases with quasi-static rupture of earthquake nuclei; possible source mechanism for seismo-EMs** Yuji Enomoto	S12-2-01 invited
16:45	**Multi-parameter assessments of pre-earthquake atmospheric signals** Dimitar Ouzouniv, Sergey Pulinets, Tiger Liu, Katsumi Hattori, Peng Han	S12-2-02 invited
17:00	**Probability tomography and wavelet analysis of self-potential data and possible application in landslide monitoring** Qinghua Huang, Kaiyan Hu, Katsumi Hattori	S12-2-03 invited

Session: **S12-P**
Type: Poster
Date: Tuesday, August 1/ Wednesday, August 2, 2017
Time: 15:30 - 16:30
Room: Event Hall

Title	Program No.
Characterizing the nature of spatial heterogeneities based on multi-fractal and seismic b-value analysis of the 2015 Nepal earthquake sequence Vijay Prasad Dimri, Nampally Subhadra, Simanchal Padhy	S12-P-01
Precursory signature of a megathrust earthquake and postseismic effects on regional earthquake induction Tae-Kyung Hong, Junhyung Lee, Seongjun Park	S12-P-02
Resistivity changes during the 2015 seismic swarm detected by real-time magnetotelluric monitoring system in Taal volcano (Philippines) Paul Karson Alanis, Paolo Reniva, Juan Cordon, Allan Loza, Lawrence Aaron Banes, Yoichi Sasai, Akihiro Takeuchi, Toshiyasu Nagao	S12-P-03
Characteristics of b-value and TEC changes in Space and Time before the Large Earthquakes in Japan Takaaki Kobari, Peng Han, Katsumi Hattori	S12-P-04
Anomalies of astronomical time-latitude observations before strong earthquake and discussions on the problems of its application Bo Wang, Zhiqiang Yin, Lili Tian, Hongqi Wang, Yanben Han	S12-P-05
Abnormal seismicity of slow earthquakes on land prior to 2011 Tohoku earthquake Tomoki Tokuda, Hirohiko Shimada	S12-P-06

IASPEI Earthquake Source Mechanics

S13. Earthquake source mechanics

Session: **S13-1**
Session title: Earthquake source mechanics I
Type: Oral
Date: Thursday, August 3, 2017
Time: 08:30 - 10:00
Room: Main Hall
Chairs: Torsten Dahm (Deutsches GeoForschungsZentrum GFZ)
Simone Cesca (Deutsches GeoForschungsZentrum GFZ)

Time	Title	Program No.
08:30	**Challenges in moment tensor resolution: collapses, explosions and shallow earthquakes** Simone Cesca, Sebastian Heimann	S13-1-01
08:45	**Uncertainties in moment tensor estimation for induced earthquakes illustrated at the example of the Groningen gas field, The Netherlands** Daniela Kuehn, Sebastian Heimann, Sven Peter Naesholm, Ben Dando, Hom Nath Gharti, Elmer Ruigrok	S13-1-02
09:00	**Moment tensor inversion based on the principal component analysis: Method and application to the 2014 earthquake sequence in West Bohemia, Czech Republic** Vaclav Vavrycuk, Petra Adamova, Jana Doubravova, Hana Jakoubkova	S13-1-03
09:15	**Non double couple components of Mw>4.5 events in The Geysers geothermal field, California revealed by a hierarchical Beyesian inversion** Marija Mustac, Hrvoje Tkalcic	S13-1-04
09:30	**Determination of high precision microseismic source mechanism by iterative relative moment tensor inversion** Kazutoshi Imanishi, Takahiko Uchide	S13-1-05
09:45	**Microseismic Event Relocation and Focal Mechanism Estimation Based on PageRank Linkage** Ana C. Aguiar, Stephen C. Myers	S13-1-06

Session: **S13-2**
Session title: Earthquake source mechanics II
Type: Oral
Date: Thursday, August 3, 2017
Time: 10:30 - 12:00
Room: Main Hall
Chairs: Simone Cesca (Deutsches GeoForschungsZentrum GFZ)
Yuji Yagi (Graduate School of Life and Environmental Sciences)

Time	Title	Program No.
10:30	**Demonstration of improved seismic source inversion method of tele-seismic body wave** Yuji Yagi, Ryo Okuwaki	S13-2-01
10:45	**A Bayesian hierarchical model for a seismic source inversion** Amato Kasahara, Yuji Yagi	S13-2-02
11:00	**Seismicity of the Nordland area, Norway** Jan Michalek, Lars Ottemoeller, Jens Havskov, Marte Louise Stromme, Berit Marie Storheim	S13-2-03
11:15	**earthquake statistics, spatiotemporal distribution of foci and source mechanisms as a key to understanding of causes leading to the West Bohemia/Vogtland earthquake swarms** Josef Horalek, Hana Jakoubkova	S13-2-04
11:30	**Induced seismicity of Kuzbass (Russia). Bachatskoe earthquake of 2013, ML=6.1** Aleksey Emanov, Aleksandr Emanov, Ekaterina Leskova, Aleksandr Fateev	S13-2-05
11:45	**Crustal stress field in Taiwan inferred from regional-scale damped inversion of a newly derived homogeneous earthquake focal mechanism dataset** Wen-Tzong Liang, Ping-Han Huang, Yi-Ling Huang, Pei-Ru Jiang, Tai-Lin Tseng	S13-2-06

Session: **S13-3**
Session title: Earthquake source mechanics III
Type: Oral
Date: Thursday, August 3, 2017
Time: 13:30 - 15:00
Room: Main Hall
Chairs: Yuji Yagi (Graduate School of Life and Environmental Sciences)
Satoshi Ide (University of Tokyo)

Time	Title	Program No.
13:30	**Tidal controls on earthquake size-frequency statistics** Satoshi Ide, Suguru Yabe, Yoshiyuki Tanaka	S13-3-01
13:45	**A statistical characterization of earthquake initiation and its implication** Shunta Noda, William Ellsworth	S13-3-02

14:00	**Effective stress drop of earthquake clusters** Tomas Fischer, Sebastian Hainzl	S13-3-03
14:15	**Radiated Energy Enhancement and Rupture Complexity of Large Subduction-Zone Earthquakes** Lingling Ye, Hiroo Kanamori, Thorne Lay	S13-3-04
14:30	**Seismic energy release at the seismogenic zone of Guerrero, Mexico** Raymundo Plata-Martinez, Xyoli Perez-Campos, Shri Krishna Singh	S13-3-05
14:45	**Seismic source spectra and the relation between corner frequency and source properties derived from spontaneous rupture of a circular fault** Jian Wen, Xiaofei Chen, Jianxuan Xu	S13-3-06

Session: **S13-4**
Session title: Earthquake source mechanics IV
Type: Oral
Date: Thursday, August 3, 2017
Time: 16:30 - 18:00
Room: Main Hall
Chairs: Takahiko Uchide (National Institute of Advanced Industrial Science and Technology (AIST))
Masaru Nakano (JAMSTEC)

Time	Title	Program No.
16:30	**Earthquake Source Spectral Studies beyond the Standard Omega-Square Model** Takahiko Uchide, Kazutoshi Imanishi	S13-4-01
16:45	**Eccentric by-players of the 2011 Mw 9.1 Tohoku earthquake** Ichiro Kawasaki, Hiroshi Ishii, Yasuhiro Asai, Takuya Nishimura	S13-4-02
17:00	**Bayesian inference of centroid moment tensors of the April 2016, Kumamoto (Kyushu, Japan), earthquake sequence** Miroslav Hallo, Kimiyuki Asano, Frantisek Gallovic	S13-4-03
17:15	**Intraplate events off Sumatra – 3-D evolution** Brian Kennett, Alexei Gorbatov, Stewart Fishwick	S13-4-04
17:30	**Rupture evolution during the Mw 8.3 2015 Illapel Chile earthquake in relation to swarms** Ryo Okuwaki, Yuji Yagi	S13-4-05
17:45	**Rupture on the megasplay fault along the Nankai trough during the off-Mie earthquake (Mw=6.0) on 1 April 2016** Masaru Nakano, Ayako Nakanishi, Mikiya Yamashita, Takashi Tonegawa, Takane Hori, Shin'ichiro Kamiya, Kensuke Suzuki, Koichiro Obana, Shuichi Kodaira, Eiichiro Araki, Narumi Takahashi	S13-4-06

Session: **S13-5**
Session title: Earthquake source mechanics V
Type: Oral
Date: Friday, August 4, 2017
Time: 08:30 - 10:00
Room: Main Hall
Chairs: Hideo Aochi (BRGM - French Geological Survey)
Yoshihiro Kaneko (GNS Science)

Time	Title	Program No.
08:30	**Asperity imaging of the ML6.0 2016 Amatrice, Italy, earthquake from dynamic rupture simulation** Hideo Aochi	S13-5-01
08:45	**Dynamic Rupture Simulations Constrained by Experimental Data to Investigate the Fault Behavior of Mega-Thrust Earthquakes** Kenichi Tsuda, Jun'ichi Miyakoshi, Jean-Paul Ampuero, Yoshiyuki Imato, Daisuke Sugiyama, Seiji Tsuboi	S13-5-02
09:00	**Super-shear fault rupture propagation during the 2016 Kumamoto earthquake (Mw7.1); Possible implication for fault strength** Nelson Pulido	S13-5-03
09:15	**Why did the moderate size 2010 Yushun, China earthquake (Mw=6.8) produce supershear rupture?** Shoubiao Zhu, Jie Yuan	S13-5-04
09:30	**Dynamic Source Inversion of Intermediate Depth Earthquakes in Mexico** Aron Yuto Sho Mirwald, Victor Manuel Cruz Atienza, Shri Krishna Singh Singh	S13-5-05
09:45	**Slip-weakening distance and strength drop inferred from near-fault deformation during the 2016 M7.8 Kaikoura earthquake** Yoshihiro Kaneko, Eiichi Fukuyama, Ian Hamling	S13-5-06

Session: **S13-6**
Session title: Earthquake source mechanics VI
Type: Oral
Date: Friday, August 4, 2017
Time: 10:30 - 12:00
Room: Main Hall
Chairs: Hideo Aochi (BRGM - French Geological Survey)
Seok Goo Song (KIGAM)

Time	Title	Program No.
10:30	**Photoelastic Study of Dynamic Stress Transfers in Granular Media** Koji Uenishi, Tsukasa Goji, Wojciech Debski	S13-6-01
10:45	**Near-fault Tilt Motion and Conjugate Faulting** Eiichi Fukuyama	S13-6-02
11:00	**Supershear rupture induced by step over geometry and its effect on near field ground motion** Feng Hu, Xiaofei Chen	S13-6-03

11:15	**Modeling dynamic earthquake rupture with coseismic off-fault damage** Kurama Okubo, Harsha S. Bhat, Yann Klinger, Esteban Rougier	S13-6-04
11:30	**Investigating the variability of near-source ground motions using pseudo-dynamic source models at the SCEC Broadband Platform** Seok Goo Song	S13-6-05
11:45	**Variation of Earthquake Source Scenarios along the Nankai Trough for Hazard and Risk Assessment** Hiroe Miyake, Takashi Furumura, Takuya Nishimura, Kimihiro Mochizuki, Kazushige Obara, Tomoya Harada, Naoya Sekiya	S13-6-06

Session: **S13-P**
Type: Poster
Date: Thursday, August 3/ Friday, August 4, 2017
Time: 15:30 - 16:30 / 15:00 - 16:00
Room: Event Hall

Title	Program No.
A web-platform benchmark for moment tensor inversion Torsten Dahm, Sebastian Heimann, Simone Cesca	S13-P-01
Centroid moment tensor solution using 3D heterogeneous anisotropic Earth: application to Papua New Guinea and Solomon Islands Babak Hejrani, Hrvoje Tkalcic, Andreas Fichtner	S13-P-02
Single Layer Recurrent Neural Network for detection of swarm-like earthquakes in West Bohemia and South-west Iceland Jana Doubravova, Jan Wiszniowski, Josef Horalek	S13-P-03
An evolutive quasi-real-time source inversion based on a linear inverse formulation Hugo Sanchez Reyes, Josue Tago Pacheco, Victor Cruz Atienza, Ludovic Metivier, Marcial Contreras Zazueta, Jean Virieux	S13-P-04
Source properties of large earthquakes in subduction zones using 3D heterogeneous Earth: application to the Australasian region Babak Hejrani, Hrvoje Tkalcic	S13-P-05
Complete synthetic seismograms based on a spherical self-gravitating Earth model with an atmosphere-ocean-mantle-core structure Rongjiang Wang, Sebastian Heimann, Yong Zhang, Hansheng Wang, Torsten Dahm	S13-P-06
Detecting the Temporal Variation in Seismic Velocity Accompanied by 2011 Tohoku-Oki Earthquake and the Slow Slip Event, Using Seismic Interferometry of Ambient Noise Miyuu Uemura, Yoshihiro Ito, Kazuaki Ohta, Ryota Hino, Masanao Shinohara	S13-P-07
Rupture process of the Ms 7.4 November 15, 2004 Colombia earthquake Sandra Patricia Molina Garcia, Luis Quintatar	S13-P-08
Source inversion and stochastic ground motion modelling of the August Mw 6.8 Myanmar earthquake Hasbi Ash Shiddiqi, Pa Pa Tun, Tun Lin Kyaw, Lars Ottemoller	S13-P-09
Early rupture process of the 2016 Kumamoto earthquake inferred from source imaging Takamasa Usami, Masanao Komatsu, Hiroshi Takenaka	S13-P-10
Source imaging of the 2016 Kumamoto earthquake by back-projection of near-filed P wave records Mitsutaka Oshima	S13-P-11
The intraplate Maranhao earthquake of 2017 Jan 03, northern Brazil: evidence of uniform regional stresses along the Brazilian equatorial margin Fabio Dias, Marcelo Assumpcao, Marcelo Bianchi, Lucas Barros, Juraci Carvalho	S13-P-12
Radiation Efficiency of Intraslab Earthquakes beneath Kyushu Yumenari Adachi, Junichi Nakajima, Toru Matsuzawa	S13-P-13
Source time function archive of deep earthquake: re-examination of hierarchy source model Yasushi Ishihara	S13-P-14
A model of dynamic earthquake triggering based on rate- and state-dependent friction law Shingo Yoshida	S13-P-15
Estimation of the dynamic rupture parameters for the 2016 Tottoriken-chubu earthquake Keisuke Sato, Shoichi Yoshioka, Hideo Aochi	S13-P-16
Dynamic rupture model of the 2014 northern Nagano, central Japan, earthquake Yuko Kase	S13-P-17
A Possible Dynamic Rupture Scenario of the Nankai-trough Earthquakes, southwest Japan Yumi Urata, Eiichi Fukuyama, Chihiro Hashimoto	S13-P-18

IASPEI Earth Structure and Geodynamics

S14. Upper mantle and transition zone dynamics and structure

Session: **S14-1**
Session title: Upper mantle and transition zone dynamics and structure I
Type: Oral
Date: Wednesday, August 2, 2017
Time: 08:30 - 10:00
Room: Room 402
Chairs: Christine Houser (Tokyo Institute of Technology)
George Helffrich (Tokyo Institute of Technology)

Time	Title	Program No.
08:30	**Observations of Upper Mantle Discontinuity Structure** Nicholas Schmerr	S14-1-01 invited
09:00	**Cold, hot mantle transition zone beneath Hawaii mapped from teleseismic Ps receiver functions** Matthew Agius, Catherine Rychert, Nicholas Harmon, Gabi Laske	S14-1-02
09:15	**Slow velocities and thin transition zone indicate upwelling lower mantle beneath eastern Eurasia** Christine Houser, Alex Webb	S14-1-03
09:30	**A three-dimensional electrical conductivity image of the mantle plume of the Society hotspot in French Polynesia** Noriko Tada, Pascal Tarits, Kiyoshi Baba, Hisashi Utada, Takafumi Kasaya, Daisuke Suetsugu	S14-1-04
09:45	**Seismic evidence for broad attenuation anomalies in the asthenosphere beneath the Pacific ocean** Alice Adenis, Eric Debayle, Yanick Ricard	S14-1-05

Session: **S14-2**
Session title: Upper mantle and transition zone dynamics and structure II
Type: Oral
Date: Wednesday, August 2, 2017
Time: 10:30 - 12:00
Room: Room 402
Chairs: Christine Houser (Tokyo Institute of Technology)
George Helffrich (Tokyo Institute of Technology)

Time	Title	Program No.
10:30	**Mantle transition zone, stagnant slab and intraplate volcanism in Northeast Asia** Dapeng Zhao, Chuanxu Chen, You Tian, Shiguo Wu, Akira Hasegawa, Jianshe Lei, Jung-Ho Park, Ik-Bum Kang	S14-2-01
10:45	**Transition-zone imaging below Japan with ScS reverberations** Elmer Ruigrok, Kiwamu Nishida, Katsuhiko Shiomi	S14-2-02
11:00	**Mantle transition zone beneath a normal seafloor in the northwestern Pacific: Electrical conductivity, seismic thickness, and water content** Tetsuo Matsuno, Daisuke Suetsugu, Kiyoshi Baba, Noriko Tada, Hisayoshi Shimizu, Hajime Shiobara, Takehi Isse, Hiroko Sugioka, Aki Ito, Masayuki Obayashi, Hisashi Utada	S14-2-03
11:15	**Upper-Mantle Discontinuities Across Stable South American Continent** Marcelo Bianchi, Marcelo Assumpcao, Jordi Julia	S14-2-04
11:30	**Towards 3D Kirchhoff Migration of Receiver Functions at Continental Scale** Florian Millet, Thomas Bodin, Stephane Rondenay	S14-2-05
11:45	**Phase speed measurements of multi-mode surface waves using a broad-band array: Application to USArray** Hitoshi Matsuzawa, Kazunori Yoshizawa	S14-2-06

Session: **S14-P**
Type: Poster
Date: Thursday, August 3/ Friday, August 4, 2017
Time: 15:30 - 16:30 / 15:00 - 16:00
Room: Event Hall

Title	Program No.
Unusually deep Bonin earthquake of 30 May 2015: A precursory signal to slab penetration Masayuki Obayashi, Yoshio Fukao, Junko Yoshimitsu	S14-P-01
Structure of Crust and Upper Mantle beneath South China Sea revealed by Surface Wave Tomography Thi Giang Ha, Tien Hung Nguyen, Satoru Tanaka, Le Minh Nguyen, Yasushi Ishihara, Vinh Long Ha, Quang Khoi Le	S14-P-02

Differences in the lithosphere seismic structure along the Brazilian continental margin in the South Atlantic from travel time seismic tomography S14-P-03
Marcelo Rocha, Paulo Azevedo, Marcelo Assumpcao, George Franca, Giuliano Marotta

Slow recycling of cold slab remnants in vigorous mantle convection S14-P-04
Gary Jarvis

Detecting Seismic Anisotropy in the Mantle Transition Zone with SS Precursors S14-P-05
Quancheng Huang, Nicholas Schmerr, Lauren Waszek, Caroline Beghein, Erik Weidner

Seismic attenuation of multiple ScS phases beneath South China Sea S14-P-06
Le Minh Nguyen, Satoru Tanaka, Yashushi Ishihara, Tien Hung Nguyen, Vinh Long Ha, Thi Giang Ha, Daisuke Suetsugu

Lithospheric Shear-wave Structure beneath North America S14-P-07
Risheng Chu, Justin Ko, Shengji Wei, Zhongwen Zhan, Don Helmberger

Shear-wave velocity model of Palawan, Philippines from receiver function analysis S14-P-08
Arianne Gail Rivera, Takuo Shibutani

Seismic discontinuities in the upper mantle around Vietnam inferred from receiver functions S14-P-09
Takashi Tonegawa, Minh Nguyen, Satoru Tanaka, Yasushi Ishihara, Giang Ha, Ryuta Arai, Hung Nguyen, Bor-Shouh Huang, Win-Gee Huang

S15. Mid-mantle structure

Session: **S15-1**
Session title: Structure and dynamics of the mid mantle
Type: Oral
Date: Wednesday, August 2, 2017
Time: 13:30 - 15:00
Room: Room 402
Chairs: Christine Houser (Tokyo Institute of Technology)
Nicholas Schmerr (University of Maryland)

Time	Title	Program No.
13:30	**First principles investigation of the high-pressure behavior of the FeOOH-AlOOH-phase H (MgSiO4H2) system** Jun Tsuchiya, Elizabeth C. Thompson, Taku Tsuchiya, Masayuki Nishi, Yasuhiro Kuwayama	S15-1-01 invited
14:00	**Large-scale compositional heterogeneity in the Earth's mantle** Maxim Ballmer	S15-1-02 invited
14:15	**Mineralogical model of the lower mantle inferred from high-pressure sound velocity data** Izumi Mashino, Motohiko Murakami, Nobuyoshi Miyajima, Sylvain Petitgirard, Daniel Frost	S15-1-03 invited

S16. Large low shear velocity provinces and deep mantle structure

Session: **S16-1**
Session title: Large low shear velocity provinces and deep mantle structure
Type: Oral
Date: Wednesday, August 2, 2017
Time: 16:30 - 18:00
Room: Room 402
Chairs: Allen McNamara (Michigan State University)
Takashi Nakagawa (Japan Agency for Marine-Earth Science and Technology)

Time	Title	Program No.
16:30	**Shear Wave Velocity Structure and Anisotropy atop the Core Mantle Boundary Beneath the Indian Ocean Geoid Low** Padma Rao Bommoju, Ravi Kumar Mangalampally	S16-1-01
16:45	**ON THE NATURE OF LARGE ULTRA-LOW VELOCITY ZONES AT THE ROOT OF MAJOR HOTSPOT PLUMES** Barbara Romanowicz, Kaiqing Yuan	S16-1-02 invited
17:00	**Waveform inversion for localized three-dimensional shear wave velocity structure within the lowermost mantle** Kenji Kawai, Anselme Borgeaud, Yuki Suzuki, Kensuke Konishi, Robert Geller	S16-1-03
17:15	**Deep mantle heterogeneity and its relationship with deep mantle heat flow inferred from 3D spherical mantle convection with plate reconstruction system in 200 Myrs** Takashi Nakagawa	S16-1-04 invited
17:30	**Constraining Mantle Viscosity and Thermochemical Structure Using the Geoid in 3-D Mantle Convection Models with Plate Motion History** Wei Mao, Shijie Zhong, Mingming Li	S16-1-05

17:45	**Effect of cation substitution on bridgmanite elasticity** Hiroshi Fukui, Akira Yoneda, Akihiko Nakatsuka, Seiji Kamada, Takashi Yoshino, Alfred Baron	S16-1-06

S17. Outer core structure and dynamics

Session: **S17-1**
Session title: Outer core structure and dynamics (Oral contributions)
Type: Oral
Date: Thursday, August 3, 2017
Time: 08:30 - 10:00
Room: Room 402
Chairs: George Helffrich (Tokyo Institute of Technology)
Hrvoje Tkalčić (Australian National University)

Time	Title	Program No.
08:30	**Seismic structure of the Earth's outermost core** Satoshi Kaneshima	S17-1-01 invited
09:00	**Erosion of a thermally induced stably stratified layer by compositional convection in the Earth's outer core** Shi-ichi Takehiro, Youhei Sasaki	S17-1-02
09:15	**Neutrino oscillations and electron density distribution of the Earth's core** Akimichi Taketa, Carsten Rott	S17-1-03

Session: **S17-P**
Type: Poster
Date: Thursday, August 3/ Friday, August 4, 2017
Time: 15:30 - 16:30 / 15:00 - 16:00
Room: Event Hall

Title	Program No.
Seismological evidence for heterogeneous lowermost outer core (F-layer) of the Earth Toshiki Ohtaki, Satoshi Kaneshima, Hiroki Ichikawa, Taku Tsuchiya	S17-P-01
Outer core stratification by crystallization of SiO2 George Helffrich, Kei Hirose, Guillaume Morard, Ryosuke Sinmyo	S17-P-02

S18. Inner core structure

Session: **S18-1**
Session title: Inner core structure and dynamics
Type: Oral
Date: Thursday, August 3, 2017
Time: 10:30 - 12:00
Room: Room 402
Chairs: Hrvoje Tkalčić (The Australian National University)
George Helffrich (Tokyo Institute of Technology)

Time	Title	Program No.
10:30	**Geodynamical modeling and seismic observations: a step towards mapping regional structures of Earth's inner core** Lauren Waszek	S18-1-01 invited
10:45	**Complex inner core of the Earth constrained by differential travel times and differential ray parameters** Tae-Gyu Yee, Junkee Rhee, Hrvoje Tkalcic	S18-1-02
11:00	**Temporal change of seismic data associated with the Earth's inner core: inner core super-rotation or temporal change of inner core surface?** Lianxing Wen, Jiaoyuan Yao	S18-1-03
11:15	**Comparison of frequency dependent reflection coefficients at the inner core boundary beneath the central America and western Pacific** Satoru Tanaka, Hrvoje Tkalcic	S18-1-04
11:30	**Complex Iron Lattice Preferred Orientation Pattern at the Earth's Inner** Maurizio Mattesini, Anatoly Belonoshko, Hrvoje Tkalcic	S18-1-05
11:45	**Studies of inner core anisotropy from noise interferometry** Xiaodong Song, Tao Wang, Han Xia	S18-1-06

Session: **S18-P**
Type: Poster
Date: Thursday, August 3/ Friday, August 4, 2017
Time: 15:30 - 16:30 / 15:00 - 16:00
Room: Event Hall

Title	Program No.
GrowYourIC: a step towards reconciling geodynamical models to seismic observations of the inner core Marine Lasbleis, Lauren Waszek, Elizabeth Day	S18-P-01
Full parameter space search for a layered, anisotropic inner core using the Neighbourhood Algorithm Joanne Stephenson, Hrvoje Tkalcic	S18-P-02

Toward probing the deep Earth's interior using spiral-arm arrays and principles of seismic interferometry S18-P-03
Thanh-Son Pham, Hrvoje Tkalcic, Malcolm Sambridge

S19. Planetary seismology

Session: **S19-1**
Session title: Giant planet and remote sensing seismology, Europa and ocean-world seismology
Type: Oral
Date: Monday, July 31, 2017
Time: 08:30 - 10:00
Room: Room 402
Chairs: Patrick Gaulme (New Mexico State University)
Philippe Lognonné (Institut de Physique du Globe de Paris-Sorbonne Paris Cité)

Time	Title	Program No.
08:30	**A Window into Giant Planet Structure using Saturn's Natural Seismograph** Christopher Mankovich, Mark Marley, Jonathan Fortney, Neil Murphy	S19-1-01
08:45	**Probing the interior of Jupiter toward unveiling its formation: A new attempt with Jovian seismology** Masahiro Ikoma, Bun'ei Sato, Takashi Sekii, Hidekazu Hanayama, Shigeru Ida	S19-1-02
09:00	**Study of the Seismic Response of Dayside Non-LTE CO2 Emissions of Planets** Raphael F. Garcia, Miguel Angel Lopez Valverde, Sébastien Lebonnois, Quentin Brissaud, Attila Komjathy, James Cutts, Philippe Lognonné	S19-1-03
09:15	**Planetary Seismology Using Infrasound and Airglow Signatures on Venus** Attila Komjathy, James Cutts, Michael Pauken, Sharon Kedar, Suzanne Smrekar, Jeff Hall, Alan Didion, Balthasar Kenda, Jennifer Jackson, David Mimoun, Raphael Garcia, Philippe Lognonne	S19-1-04
09:30	**Seismic Exploration of Europa and Other Ocean Worlds** Steven Vance, Sharon Kedar, Sridhar Anandakrishnan, Bruce Banderdt, Bruce Bills, Fabio Cammarano, Julie Castillo, Hsin-Hua Huang, Jennifer Jackson, Philippe Lognonne, Ralph Lorenz, Mark Panning, William Pike, Simon Staehler, Victor Tsai	S19-1-05 invited
09:45	**Investigating the Interior of Icy Worlds with Short Aperture Seismic Arrays** Nicholas Schmerr	S19-1-06 invited

Session: **S19-2**
Session title: Apollo seismic data re-processing and future lunar seismology project
Type: Oral
Date: Monday, July 31, 2017
Time: 10:30 - 12:00
Room: Room 402
Chairs: Taichi Kawamura (National Astronomical Observatory of Japan)
Nicholas Schmerr (University of Maryland)

Time	Title	Program No.
10:30	**Seismic velocity and crustal thickness inversions: Moon and Mars** Melanie Drilleau, Jean-Francois Blanchette-Guertin, Taichi Kawamura, Philippe Lognonne, Mark Wieczorek	S19-2-01
10:45	**Effects of lateral variations of Moon crustal thickness on lunar seismic wave propagation: numerical study and comparing with the Apollo seismic data** Yanbin Wang, Fei Chen, Xianghua Jiang	S19-2-02
11:00	**Scattering attenuation profile of the Moon : implications for shallow moonquakes and the structure of the megaregolith** Kevin Gillet, Ludovic Margerin, Marie Calvet, Marc Monnereau	S19-2-03
11:15	**Source Time Function and Source Parameters of Lunar Quakes and Impacts** Taichi Kawamura, Philippe Lognonne	S19-2-04
11:30	**Updated travel time analysis of Apollo artificial impacts' seismic data with the precise source locations identified by LRO** Keisuke Onodera, Satoshi Tanaka, Taichi Kawamura, Yoshiaki Ishihara	S19-2-05
11:45	**Technical Readiness of Japanese lunar penetrator and its application to small-class space program: APPROACH** Hiroaki Shiraishi, Satoshi Tanaka, Masahiko Hayakawa, Masanobu Ozaki, Takahide Mizuno, Ken Goto, Kosei Ishimura, Ryuhei Yamada, Taichi Kawamura, Yoshiaki Ishihara, Kei Shirai, Hideki Murakami	S19-2-06 invited

Session: **S19-3**
Session title: Seismic missions and instruments: from insight to future projects on small bodies and planets with atmosphere
Type: Oral
Date: Tuesday, August 1, 2017
Time: 08:30 - 10:00
Room: Room 402
Chairs: Bruce Banerdt (Jet Propulsion Laboratory)
Philippe Lognonné (Institut de Physique du Globe de Paris-Sorbonne Paris Cité)

Time	Title	Program No.
08:30	**The Seismic Exploration of Mars by the InSight Mission** W. Bruce Banerdt, Philippe Lognonne, Domenico Giardini, W. Tom Pike, SEIS Team	S19-3-01 invited
09:00	**The InSight VBB seismometer: status and perspective for future missions** Tanguy Nebut, Sebastien Deraucourt, Philippe Lognonne, William Banerdt, Glenn Aveni, Rob Calvet, Pierre-Alain Dandonneau, Melanie Drilleau, Taoufik Gabsi, Kenneth Hurst, Benoit Lecomte, Michel Parise, Olivier Robert, Sylvain Tillier, Gabriel Pont, Nicolas Verdier, Philippe Laudet, Lucile Fayon, Hubert Halloin, SEIS/VBB Team	S19-3-02 invited
09:15	**The SP Microseismometer for the InSight Mission to Mars** W. T. Pike, I. M. Standley, S. B. Calcutt	S19-3-03 invited
09:30	**Conceptual Study of Small Active Seismic Exploration Package on Moons and Small Bodies** Kazunori Ogawa, Taichi Kawamura, Yoshiaki Ishihara, Takeshi Tsuji, Taizo Kobayashi, Ryuhei Yamada, Akito Araya, Satoshi Tanaka, Nozomu Takeuchi	S19-3-04 invited

Session: **S19-4**
Session title: Science goals and modeling of the Insight/SEIS experiment
Type: Oral
Date: Tuesday, August 1, 2017
Time: 10:30 - 12:00
Room: Room 402
Chairs: Philippe Lognonné (Institut de Physique du Globe de Paris-Sorbonne Paris Cité)
Bruce Banerdt (Jet Propulsion Laboratory)

Time	Title	Program No.
10:30	**SEIS/INSIGHT: One year prior the Seismic Discovery of Mars** Philippe Lognonne, William. B. Banerdt, Domenico Giardini, William Tom Pike, Sebastien De Raucourt, Jeff Umland, Ken Hurst, Peter Zweifel, Simon Calcut, Marco Bierwirth, David Mimoun, Gabriel Pont, Nicolas Verdier, Tom Hofmann, Don Banfield, John Clinton, Veronique Dehant, Matt Golombek, Raphael Garcia, Catherine Johnson, SEIS Team	S19-4-01
10:45	**Mars' core and what its seismological structure could reveal about the planet's evolution** George Helffrich	S19-4-02
11:00	**Preparing for InSight: a Blind Test for Detection and Location of Martian Seismicity** Domenico Giardini, John Clinton, Philippe Lognonne, Bruce Banerdt, Savas Ceylan, Martin Van Driel, Amir Khan, Mark Panning, Maren Boese, Raphael Garcia, Melanie Drilleau, Davide Mimoun, Naomi Mudoch, B Kenda, A Spiga, Antoine Mocquet, A Rivoldini, O Verhoeven, The SEIS Team	S19-4-03
11:15	**Modeling the seismic signals generated by dust devils on Mars** Balthasar Kenda, Philippe Lognonne, Aymeric Spiga, Taichi Kawamura, Sharon Kedar, Bruce Banerdt, Ralph Lorenz, Don Banfield, Matt Golombek	S19-4-04
11:30	**Planned Products of the Mars Structure Service for the InSight Mission to Mars** Mark P. Panning, Melanie Drilleau, Philippe Lognonne, W. Bruce Banerdt, Raphael Garcia, Matthew Golombek, Sharon Kedar, Brigitte Knapmeyer-Endrun, Antoine Mocquet, Nick A. Teanby, Jeroen Tromp, Renee Weber, Eric Beucler, Jean-Francois Blanchette-Guertin, Ebru Bozdag, Tamara Gudkova, Stefanie Hempel, Amir Khan, Vedran Lekic, Naomi Murdoch, The Mars Structure Service Team	S19-4-05
11:45	**The Marsquake Service: generating a seismicity catalogue for Mars** John Clinton, Savas Ceylan, Maren Boese, Fabian Euchner, Domenico Giardini, Amir Khan, Martin Van Driel, Raphael Garcia, Philippe Lognonne, Melanie Drilleau, Mark Panning, Bruce Banerdt, Eric Beucler, Antoine Mocquet, Taichi Kawamura, J-F Blanchette-Guertin, The SEIS Team	S19-4-06

Session: **S19-P**
Type: Poster
Date: Tuesday, August 1/ Wednesday, August 2, 2017
Time: 15:30 - 16:30
Room: Event Hall

Title	Program No.
Seismic Wave Simulations on Mars : Comparisons between 1D interior models and effect of 3D structures Ebru Bozdag, Melanie Drilleau, Philippe Lognonne, Domenico Giardini, Mark Panning, John Clinton, Antoine Mocquet, Raphael Garcia, Rene Weber, Jeroen Tromp, Mark Wieczorek, Bruce Banerdt, Youyi Ruan, Nathan Metthez, Amir Khan, Kuangdai Leng, Martin van Driel, Carene Larmat, Savas Caylan, Eric Beucler, SEIS Science Team	S19-P-01

Estimation and detection of Mars' background free oscillations for InSIGHT mission S19-P-02
Yasuhiro Nishiakwa, Philippe Lognonne, Taichi Kawamura, Aymeric Spiga, Tanguy Bertrand, Kei Kurita

S20. Earth and planetary space and remote sensing seismology; i.e., seismology without seismometers

Session: **S20-1**
Session title: Earth and planetary space and remote sensing seismology; i.e., seismology without seismometers
Type: Oral
Date: Tuesday, August 1, 2017
Time: 13:30 - 15:00
Room: Room 402
Chairs: Lucie Rolland (Observatoire de la Côte d'Azur)
Kosuke Heki (Hokkaido University)

Time	Title	Program No.
13:30	**Surface waves magnitude estimation from ionospheric signature of Rayleigh waves measured by Doppler sounder and OTH radar** Giovanni Occhipinti, Florent Aden-Antoniow, Virgile Rakoto, Aurelien Bablet, Jean-Philippe Molinie, Thomas Farges, Philippe Lognonné	S20-1-01
13:45	**Ionospheric volcanology: GNSS-TEC observation & modeling of the 2015 Kuchinoerabujima eruption** Yuki Nakashima, Kiwamu Nishida, Yosuke Aoki, Giovanni Occhipinti, Kosuke Heki	S20-1-02
14:00	**Traveling Ionospheric Disturbance Triggered by Tsunami Observed by GPS and Geostationary Satellites of BeiDou** Jann-Yeng Tiger Liu, Pei-Hsuan Lin, Tso-Ren Wu, Yu-Lin Tsai, Ho-Fang Tsai, Chien-Hung Lin, Chia-Hung Chen	S20-1-03
14:15	**Inversion of the GPS -TEC induced by tsunami in order to estimate the sea level anomaly using a the normal mode modeling** Virgile Rakoto, Philippe Lognonne, Lucie Rolland	S20-1-04
14:30	**Modeling Earthquake-Induced Travelling Ionospheric Disturbances** Xing Meng, Attila Komjathy, Olga Verkhoglyadova, Anthony Mannucci	S20-1-05
14:45	**Exploring the Use of Airglow Measurements for Detecting Seismicity on Venus** Balthasar Kenda, Philippe Lognonne, Attila Komjathy, Bruce Banerdt, Jim Cutts, Lauriane Soret, Jennifer Jackson	S20-1-06

Session: **S20-P**
Type: Poster
Date: Tuesday, August 1/ Wednesday, August 2, 2017
Time: 15:30 - 16:30
Room: Event Hall

Title	Program No.
Atmospheric interior resonances : theory and observation on Earth and comparative analysis for terrestrial planets with atmosphere Philippe Lognonne, Virgile Rakoto, Foivos Karakostas, Lucile Rolland, Elvira Astafyeva, Balthasar Kenda, Yasuhiro Nishikawa	S20-P-01
Recording TEC profiles from aircrafts for tsunami early warning Melanie Drilleau, Pierdavide Coisson, Lucie Rolland, Philippe Lognonne, Halflidi Jonsson, Virgile Rakoto, Khaled Khelfi, Giovanni Occhipinti	S20-P-02
Signals in the ionosphere generated by tsunami earthquakes: observations and modeling support Lucie Rolland, Carene Larmat, Anthony Sladen, Marcel Rémillieux, Khaled Khelfi, Elvira Astafyeva, Philippe Lognonné	S20-P-03

IASPEI Tectonophysics and Crustal Structure

S21. Lithospheric structure

Session: **S21-1**
Session title: Lithospheric discontinuities I - LAB
Type: Oral
Date: Thursday, August 3, 2017
Time: 13:30 - 15:00
Room: Room 501
Chairs: Jaroslava Plomerova (Inst. Geophysics, Czech Acad. Sci., Prague)
Ulrich Achauer (IPGS-EOST, University of Strasbourg)

Time	Title	Program No.
13:30	**Imaging lithospheric seismic discontinuities beneath Cascadia using S-to-P receiver functions** Catherine Rychert, Nicholas Harmon, Saikiran Tharimena, Saikiran Tharimena	S21-1-01 invited
14:00	**The depth of the LAB across Cenozoic Europe from seismological studies** Ulrich Achauer, Michel Granet	S21-1-02
14:15	**Imaging the lithosphere - top to bottom - of the Hikurangi plateau as it subducts beneath North Island, New Zealand** Tim Stern, Stuart Henrys, Simon Lamb, David Okaya, Brook Tozer	S21-1-03
14:30	**Imaging the Pacific lithosphere discontinuities near 60 km depth using SS precursors and constraints on defining mechanism** Nicholas Harmon, Catherine Rychert, Saikiran Tharimena	S21-1-04
14:45	**Lithospheric heat production: calculating mantle heat flow from asthenospheric shear velocity variations** Scott Wipperfurth, Vedran Lekic, William Mcdonough	S21-1-05

Session: **S21-2**
Session title: Seismic images of the upper mantle
Type: Oral
Date: Thursday, August 3, 2017
Time: 16:30 - 18:00
Room: Room 501
Chairs: Ulrich Achauer (IPGS-EOST, University of Strasbourg)
Brian Kennett (Australian National University)

Time	Title	Program No.
16:30	**Continental growth in eastern Australia: Insights from the mantle lithosphere** Nicholas Rawlinson	S21-2-01 invited
17:00	**Tearing of Indian mantle lithosphere from high-resolution seismic images: Implications for lithosphere deformation coupling in southern Tibet** Jiangtao Li, Xiaodong Song	S21-2-02
17:15	**Mantle lithosphere edges of Baltic Shield and East European Craton retrieved by seismic anisotropy** Jaroslava Plomerova, Helena Munzarova, Vladislav Babuska, Ludek Vecsey	S21-2-03
17:30	**Shear Wave Splitting and Upper Mantle Flow in Mexico** Raul W. Valenzuela, Gerardo Leon Soto	S21-2-04
17:45	**Numerical simulation of 3D mantle flow in the Aegean (Hellenic) and Cyprus subduction systems linking to seismic anisotropy beneath the eastern Mediterranean and Anatolia** Judith Confal, Manuele Faccenda, Tuna Eken, Tuncay Taymaz	S21-2-05

Session: **S21-3**
Session title: Seismic anisotropy tomography
Type: Oral
Date: Friday, August 4, 2017
Time: 08:30 - 10:00
Room: Room 501
Chairs: Nicholas Harmon (University of Southampton)
Jaroslava Plomerova (Inst. Geophysics, Czech Acad. Sci., Prague)

Time	Title	Program No.
08:30	**Seismic anisotropy tomography of the Western Pacific subduction zones** Dapeng Zhao, Xin Liu, Wei Wei	S21-3-01 invited
09:00	**Constraints on Anisotropic Velocity Structure of the Lithosphere-asthenosphere System in the Central Pacific from the NoMelt OBS Array** Pei-Ying Lin, James Gaherty, Joshua Russell, Ge Jin, Shu-Huei Hung, John Collins, Daniel Lizarralde, Rob. Evans, Greg Hirth	S21-3-02

09:15 **Upper mantle structure beneath the Pacific Ocean revealed by land and seafloor broadband observations** S21-3-03
Takehi Isse, Hajime Shiobara, Kazunori Yoshizawa, Hitoshi Kawakatsu, Hiroko Sugioka, Aki Ito, Daisuke Suetsugu, Hisashi Utada

09:30 **Shear-wave Splitting in the Crust and its Tectonic Implications** S21-3-04
Yuan Gao, Yutao Shi, Qiong Wang

Session: **S21-4**
Session title: Lithospheric discontinuities II – Reflectivity
Type: Oral
Date: Friday, August 4, 2017
Time: 10:30 - 12:00
Room: Room 501
Chairs: Catherine Rychert (National Oceanography Centre Southampton, University of Southampton)
Nick Rawlinson (University of Cambridge)

Time	Title	Program No.
10:30	**Multi-scale Structure and Lithospheric Discontinuities** Brian Kennett	S21-4-01 invited
11:00	**On the feasibility and use of teleseismic P-wave coda autocorrelation for mapping shallow seismic discontinuities** Thanh-Son Pham, Hrvoje Tkalcic	S21-4-02
11:15	**Estimating geophysical model uncertainties in testing procedures versus geodetic data** Riccardo Barzaghi, Anna Maria Marotta	S21-4-03
11:30	**The Mid-lithosphere discontinuity beneath North China Craton** Weijia Sun, B. L. N. Kennett	S21-4-04
11:45	**Integrating seismological and satellite gravity data for consistent 3D Earth models** Jorg Ebbing	S21-4-05

Session: **S21-5**
Session title: Attenuation and lithosphere structure
Type: Oral
Date: Friday, August 4, 2017
Time: 13:30 - 15:00
Room: Room 501
Chairs: Kevin Furlong (PennState College of Earth and Mineral Siences)
Ulrich Achauer (IPGS-EOST, University of Strasbourg)

Time	Title	Program No.
13:30	**Tectonic Implications of Lithospheric Attenuation Models** Michael Pasyanos, Rengin Gok, William Walter	S21-5-01 invited
14:00	**Lithospheric structure beneath Thailand as revealed by seismological approach and its future study with Thai Seismic ARray (TSAR)** Sutthipong Noisagool, Kiwamu Nishida, Hitoshi Kawakatsu, Songkhun Boonchaisuk, Weerachai Siripunvaraporn	S21-5-02
14:15	**Crustal anisotropy in different tectonic regimes inferred from the stacking of radial and transverse receiver functions** Frederik Link, Georg Ruempker, Ayoub Kaviani	S21-5-03
14:30	**Active magmatic underplating in an intraplate setting: combined seismic, seismological, and isotope study in the western Eger Rift, Central Europe** Pavla Hrubcova, Wolfram Geissler, Karin Brauer, Horst Kampf, Vaclav Vavrycuk, Cestmir Tomek	S21-5-04

Session: **S21-P**
Type: Poster
Date: Thursday, August 3/ Friday, August 4, 2017
Time: 15:30 - 16:30 / 15:00 - 16:00
Room: Event Hall

Title	Program No.
Formation of the Earth's lithosphere - asthenosphere surface initial heterogeneities Yurii Khachai, Vsevolod Anfilogov, Alexandr Antipin	S21-P-01
Oceanic Lithosphere-Asthenosphere Boundary Estimated from Stress Dependent Deformation after the 2012 Indian Ocean Earthquake Cecep Pratama, Takeo Ito, Takao Tabei, Ryohei Sasajima, Putra Maulida, Irwan Meilano, Joni Efendi	S21-P-02
Seismic constraints on thinning of continental lithosphere beneath the Korean Peninsula: A possible link to oceanic slab subductions and mantle transition zone heterogeneities Seongryong Kim, Benoit Tauzin, Hrvoje Tkalcic, Junkee Rhie	S21-P-03
Lithospheric Density Structure of Northwest India Niraj Kumar, Anand Prakash Singh, Virendra Mani Tiwari	S21-P-04
Azimuthal anisotropy in the Northwest Pacific oceanic lithosphere inferred from Po/So waves Azusa Shito, Daisuke Suetsugu, Takashi Furumura	S21-P-05
The shear-wave splitting in the crust and the upper mantle around the Bohai Sea, North China Yutao Shi	S21-P-06

Effects of random heterogeneity in the upper mantle on apparent radial anisotropy S21-P-07
Kazunori Yoshizawa, Yunao Xu, Takashi Furumura

Constraints on lithospheric mantle and crustal anisotropy in the NoMelt area from an analysis of long-period seafloor magnetotelluric data S21-P-08
Tetsuo Matsuno, Rob. Evans

Upper Mantle and Crustal Structure of Sino-Korean and Yangtze Block from Onshore-Offshore Wide-angle seismic surveys S21-P-09
Lihua Liu, Tianyao Hao, Chuanchuan Lyu, Qingyu You, Ya Xu

Shallow Moho along the failed rift on the coast of Japan Sea beneath Japanese Islands S21-P-10
Makoto Matsubara, Hiroshi Sato

Spatial distribution of the Crust-Mantle boundary in colliding and subducting Izu-Bonin-Mariana Arc beneath Japan using Receiver Function analysis S21-P-11
Sawako Kinoshita, Kiwamu Nishida, Toshihiro Igarashi, Yosuke Aoki, Minoru Takeo

Seismological evidence of slab dehydration based on a high-resolution receiver function image of the subducting Philippine Sea plate beneath western Shikoku, southwest Japan S21-P-12
Katsuhiko Shiomi, Tetsuya Takeda, Tomotake Ueno

Estimation of global crustal model uncertainty using geostatistical analysis S21-P-13
Wolfgang Szwillus, Walter D. Mooney, Jorg Ebbing

Three-Dimensional Seismic Velocity Models of P and S Waves Beneath Western Part of Java, Indonesia from Double-difference Tomography S21-P-14
Shindy Rosalia, Sri Widiyantoro, Andri Dian Nugraha

Heterogeneous structure beneath fault zones of the 2016 Kumamoto earthquake S21-P-15
Megumi Kamizono, Satoshi Matsumoto, Yusuke Yamashita, Manami Nakamoto, Masahiro Miyazaki, Shin-ichi Sakai, Yoshihisa Iio, Group for urgent joint seismic observation of the 2016 Kumamoto earthquake

Tectonic Tremor in northern Central Range, Taiwan S21-P-16
Wei-Fang Sun, Cheng-Horng Lin, Yi-Heng Li, Wen-Yen Chang

Three dimensional resistivity structure in the source reason of SSEs in Boso peninsula, Central Japan S21-P-17
Midori Hayakawa, Mao Okuda, Toru Mogi, Kotaro Sugano, Naoki Koizimi, Katsumi Hattori, Chie Yoshino, Han Peng, Hao Chen

Crustal structure across the central Ganga foreland basin by magnetotellurics S21-P-18
A Manglik, L Adilakshmi, S Thiagarajan, M Suresh

Three-Dimensional resistivity structure beneath Payao Fault zone: biggest earthquake in Thailand (5 may 2014) S21-P-19
Songkhun Boonchaisuk, Puwis Amatyakul, Tawat Rung-Arunwan, Sutthipong Noisagool, Weerachai Siripunvaraporn

Estimation of electrical anisotropy in the oceanic upper mantle from seafloor magnetotelluric array data S21-P-20
Tetsuo Matsuno, Kiyoshi Baba, Hisashi Utada

S22. Lithosphere structure and dynamics: Plate boundary deformation at lithospheric scale

Session: **S22-1**
Session title: Lithosphere structure and dynamics
Type: Oral
Date: Tuesday, August 1, 2017
Time: 10:30 - 12:00
Room: Room 401
Chairs: Rob Govers (Utrecht University)
Kevin Furlong (Penn State University)

Time	Title	Program No.
10:30	**GPS Space Geodesy in Colombia, South America: Velocities and the construction of the Eastern Cordillera of the Colombian Andes** Hector Mora-Paez, Dave Mencin, Peter Molnar, Hans Diederix, Leonardo Cardona-Piedrahita, Yuli Corchuelo, Juan-Ramon Pelaez-Gaviria	S22-1-01
10:45	**LITHOSPHERIC STRUCTURE IN THE NORTHWEST SOUTH AMERICA FROM RECEIVER FUNCTIONS ANALYSIS** Carlos Alberto Vargas Jimenez, Gaspar Monsalve, Faustino Blanco, Esteban Poveda	S22-1-02

11:00	**Arc-arc collision structure in the southernmost part of the Kuril trench region -Results from integrated reanalyse** Takaya Iwasaki, Noriko Tsumura, Tanio Ito, Hiroshi Sato, Eiji Kurashimo, Naoshi Hirata, Kazunori Arita, Katsumi Noda, Akira Fujiwara, Susumu Abe, Shinsuke Kikuchi, Kazuko Suzuki	S22-1-03
11:15	**Bookshelf faulting in Iceland: Characteristic of oblique rifts and unstable transforms** Pall Einarsson	S22-1-04
11:30	**Potential for coincident megathrust and crustal earthquakes - an additional component of seismic hazard** Kevin Furlong, Matthew Herman	S22-1-05

Session: **S22-P**
Type: Poster
Date: Tuesday, August 1/ Wednesday, August 2, 2017
Time: 15:30 - 16:30
Room: Event Hall

Title	Program No.
Cenozoic rifting and crustal dynamics controlled by Variscan paleoplate boundaries in the mantle lithosphere Vladislav Babuska, Jaroslava Plomerova, Helena Munzarova	S22-P-01
Thermomechanical modeling of tectonic inversion at the ocean-continent boundary of the North African margin (Algeria): possible initiation of subduction Abdelkarim Yelles Chaouche, Carole Petit, Laetitia Le Pourhiet, Lamine Hamai, Abdesalam Abtout	S22-P-02

IASPEI Education and Outreach

S23. Geoscience and society

Session: **S23-1**
Session title: Geoscience and society I
Type: Oral
Date: Thursday, August 3, 2017
Time: 13:30 - 15:00
Room: Room 402
Chairs: Fuhsing Lee (Kyoto University)
Satoko Oki (Keio University)

Time	Title	Program No.
13:30	**Education and Outreach to Foreign Residents Living in Japan- the Importance and Roles of Multicultural Society Coordinators in Creating Systems for Disaster Risk Management Education for Foreign Residents** Akiyoshi Kikuchi	S23-1-01
13:45	**Global Dynamic Exposure and the OpenBuildingMap - Communicating Risk and Involving Communities** Danijel Schorlemmer, Thomas Beutin, Naoshi Hirata, Max Wyss, Fabrice Cotton, Karsten Prehn	S23-1-02
14:00	**The research of risk communication using Probabilistic Seismic Hazard Maps** Tosei Nagamatsu, Satoko Oki, Sumire Hirota	S23-1-03
14:15	**"L'Aquila Trial" is a trial of science?** Kazuki Koketsu, Satoko Oki, Alessandro Amato, Andrea Cerase	S23-1-04
14:30	**InSight/SEIS@Mars Educational program : Sharing the Seismic Discovery of Mars with a International Network of classes** Philippe Lognonne, Jean Luc Berenger, Anne Sauron, Paul Denton, Diane Carrer, Fatima Moujdi, John Taber, Tammy K Bravo, Jane Houston Jones, Philippe Labrot, Domenico Giardini, William. B. Banerdt, Jean Michel Martinuzzi	S23-1-05

Session: **S23-2**
Session title: Geoscience and society II
Type: Oral
Date: Thursday, August 3, 2017
Time: 16:30 - 18:00
Room: Room 402
Chairs: Satoko Oki (Keio University)
Fuhsing Lee (Kyoto University)

Time	Title	Program No.
16:30	**Action research towards effective disaster risk communication** Katsuya Yamori	S23-2-01 invited
17:00	**Extension of school education for disaster prevention actions over households –a case study of Mashima Elementary School-** Takao Iinuma, Satoko Oki, Risa Yamazaki, Shun Tagami	S23-2-02
17:15	**An Analysis on The Effects of the Implementation of Short Drills in Taking an Educational Approach to Disaster Prevention - A Case Study of Shirahata Elementary School-** Risako Tokoro, Tosei Nagamatsu, Mitsuhiro Matsumoto, Nobutomo Obata, Satoko Oki	S23-2-03
17:30	**Adapting the disaster knowledge for the local context – Practices of Tsunami disaster education in Zihuatanejo city, Mexico** Genta Nakano, Katsuya Yamori	S23-2-04
17:45	**Consideration of the challenges of residents with special needs in tsunami prone area in Japan through implementing indoor tsunami evacuation drills** Takashi Sugiyama, Katsuya Yamori	S23-2-05

Session: **S23-P**
Type: Poster
Date: Thursday, August 3/ Friday, August 4, 2017
Time: 15:30 - 16:30 / 15:00 - 16:00
Room: Event Hall

Title	Program No.
Resilience Science for Resilient Society-Real time monitoring, Simulation research, Disaster education -Real time monitoring, Simulation research, Disaster education -Real time monitoring, Simulation research, Disaster education on Resilience Science - Yoshiyuki Kaneda, Kazuhito Fujisawa, Chikako Isouchi	S23-P-01
Outreach Programs for school children in India Srinagesh D, Satoko Oki, Rajendar Chadha	S23-P-02
How do disaster museums communicate with the visitors? Hideyuki Shiroshita, Yuto Oka	S23-P-03
The Educational Potential of an Earthquake Museum in Taiwan - from the Viewpoint of Disaster Preparedness Education - Yiwen Tsao	S23-P-04
How to Facing Disasters? The Meanings of Game-based Disaster Education Tools Fuhsing Lee, Katsuya Yamori	S23-P-05
Effects of Disaster Structural Understanding on Residents' Behavioral Intention against Disaster -Case of Kanto Tohoku Heavy Rainfall Disaster(2015)- Hideyuki Kobayashi, Atsushi Tanaka	S23-P-06
Practices of the disaster prevention education that incorporated the necessity of the kindergarten and nursery school Nobuyuki Yamada, Kaoru Choji	S23-P-07
The Nicoya, Costa Rica, Mw=7.6 Earthquake :A very successful experience of Scientific and Community organization and Preparation Shusuke Irabu, Marino Protti, Victor Gonzalez, Douglas Salgado	S23-P-08
Minna de Honkoku: online transcription project of historical earthquake documents Yasuyuki Kano, Yuta Hashimoto, Ichiro Nakanishi, Junzo Ohmura, Tama Amano, Tomoyo Kuba, Haruno Sakai, Kazuyuki Ito, Yoko Odagi, Makiko Nishikawa, Haruo Horikawa, Kazuya Mizushima, Ryoichi Yasukuni, Munehisa Yamamoto	S23-P-09
ENGINEERING GEOLOGICAL APPROACHES TO DEAL WITH GEOHAZARD ASSESSMENT IN SEISMIC TERRITORIES Mario Luigi Rainone, Giovanna Vessia, Carla Weaver	S23-P-10
Integrated Probabilistic Tsunami Hazard Assessment against possible tsunamis along Nankai Trough, Sagami Trough, and Japan Trench Kenji Hirata, Hiroyuki Fujiwara, Hiromitsu Nakamura, Masaki Osada, Tsuneo Ohsumi, Nobuyuki Morikawa, Shin'ichi Kawai, Takahiro Maeda, Hisanori Matsuyama, Nobuhiko Toyama, Tadashi Kito, Yo'ichi Murashima, Yasuhiro Murata, Takuya Inoue, Ryu Saito, Shin'ichi Akiyama, Mariko Korenaga, Yuta Abe, Norihiko Hashimoto, Tomoya Hakamata	S23-P-11
What was the difference of local people between the 2016 Kumamoto earthquake in Japan and the 2009 L'Aquila earthquake in Italy? Megumi Sugimoto, Silvia Peppoloni, Yandejia Song	S23-P-12

IASPEI International Heat Flow Commission

S24. Methods and instruments of experimental geothermics – application and recent evolution

Session: **S24-1**
Session title: Methods and instruments of experimental geothermics - application and recent evolution I
Type: Oral
Date: Thursday, August 3, 2017
Time: 16:30 - 18:00
Room: Room 503
Chairs: Andrea Foerster (Helmholtz Centre Potsdam GFZ German Research Centre for Geosciences)
Yuri Popov (Skolkovo Institute of Science and Technology)

Time	Title	Program No.
16:30	**Thermal properties of mud-dominant sediment from the Joetsu Basin in the eastern margin of the Japan Sea** Shusaku Goto, Makoto Yamano, Sumito Morita, Toshiya Kanamatsu, Akihiro Hachikubo, Satsuki Kataoka, Manabu Tanahashi, Ryo Matsumoto	S24-1-01
16:45	**Laboratory measurements of rock thermal conductivity and diffusivity by transient divided bar and pulsed needle probe methods** Thue S. Bording, Soeren B. Nielsen, Niels Balling	S24-1-02
17:00	**Thermal petrophysics in application to hydrocarbon reservoir investigations: Current state of art** Yuri Popov, Evgeny Popov, Evgeny Chekhonin, Denis Gorobtsov	S24-1-03
17:15	**A new probabilistic framework to estimate the information content of industrial bottom-hole temperature data: A case study using the Australian OzTemp dataset** Marcus Haynes	S24-1-04
17:30	**In-Situ Optical Scanning** David Sauer, Moh'd Amro, Steffen Wagner, Frederick Rose	S24-1-05

Session: **S24-2**
Session title: Methods and instruments of experimental geothermics - application and recent evolution II
Type: Oral
Date: Friday, August 4, 2017
Time: 08:30 - 10:00
Room: Room 503
Chairs: Yuri Popov (Skolkovo Institute of Science and Technology)
Andrea Foerster (Helmholtz Centre Potsdam GFZ German Research Centre for Geosciences)

Time	Title	Program No.
08:30	**The structure of free thermal convection flows in water filled borehole inferred from a laboratory experiment** Dmitry Demezhko, Bogdan Hatskevich, Mansur Mindubaev	S24-2-01
08:45	**Geothermal field under development: monitoring using unmanned aerial vehicle (UAV)** Sergey Cherkasov, Anvar Farkhutdinov, Arbi Shaipov	S24-2-02
09:00	**Determination of formation equilibrium temperature and geothermal gradient from temperature measurements in production wells drilled in oil and gas fields** Rim Valiullin, Ayrat Ramazanov, Guzel Vakhitova, Ruslan Akchurin, Yuri Popov	S24-2-03
09:15	**Long-term measurement of 1m-depth geo-temperature and its relationship with ambient temperature change** Osamu Matsubayashi, Sachio Ehara	S24-2-04
09:30	**Long-term observations of pressure, temperature and flow rate for deep-sea hydrothermal fluid at the middle Okinawa Trough** Yuka Masaki, Tatsuo Nozaki, Masayuki Watanabe, Tomokazu Saruhashi, Masanori Kyo, Noriaki Sakurai, Takahiro Yokoyama, Keita Akiyama, Lena Maeda, Hidenori Kumagai	S24-2-05

Session: **S24-P**
Type: Poster
Date: Thursday, August 3/ Friday, August 4, 2017
Time: 15:30 - 16:30 / 15:00 - 16:00
Room: Event Hall

Title	Program No.
Thermal properties of sedimentary rocks for the Tarim Basin, northwest China Shaowen Liu, Xianglan Li, Changge Feng	S24-P-01
Repeated borehole temperature logs: climate or anthropogenic impact? Vladimir Cermak, Petr Dedecek, Jan Safanda, Milan Kresl	S24-P-02

Determination of formation equilibrium temperature from unsteady temperature measurements in wells under drilling S24-P-03
Ruslan Akchurin, Ayrat Ramazanov, Rim Valiullin, Yuri Popov

Temperature and heat-flow calculations: about the benefit of well-log based thermal-conductivity profiles S24-P-04
Sven Fuchs, Niels Balling, Andrea Foerster

Geotherms of the continental crust: ambiguity from experimental P–T correction to thermal conductivity S24-P-05
Andrea Foerster, Sven Fuchs, Ben Norden, Hans-Juergen Foerster

Thermal conductivity variation of granites at elevated temperatures S24-P-06
Labani Ray, N. Narshimha Naidu, Varun Kumar, Nishu Chopra

FEATURES OF THE TEMPERATURE RECOVERY IN WELL AFTER STOP OF INJECTION/PRODUCTION IN CASE OF RESERVOIR WITH HUDRAULIC FRACTURING S24-P-07
Artyom Sharipov, Ramil Sharafutdinov, Rim Valiullin, Ayrat Ramazanov

ACQUISITION OF INTEGRATED PETROPHYSICAL DATA FROM THERMAL CORE LOGGING AND THERMAL CORE PLUG INVESTIGATION FOR USINSKOYE HEAVY OIL FIELD S24-P-08
Evgeny Popov, Yuri Popov, Evgeny Chekhonin, Egor Savelev, Ekaterina Nozdryakova, Irina Gurbatova

Effect of water saturation on the electrical impedance and elastic wave velocity of geothermal reservoir rocks S24-P-09
Kazuki Sawayama, Keigo Kitamura, Yasuhiro Fujimitsu

S25. Development and application of geothermal databases

Session: **S25-1**
Session title: Development and application of geothermal databases
Type: Oral
Date: Thursday, August 3, 2017
Time: 13:30 - 15:00
Room: Room 503
Chairs: Shaopeng Huang (Xi'an Jiaotong University / University of Michigan)
Valiya Hamza (National Observatory)

Time	Title	Program No.
13:30	**Reference framework for crustal geotherms, with constraints based on seismic data for the lower crust** Valiya Hamza, Carlos Alexandrino	S25-1-01 invited
14:00	**Thermal data beneath in and around Japan: What we know and do not yet know** Akiko Tanaka	S25-1-02
14:15	**Mapping the continental surface temperature of Australia: the surface boundary condition for conductive thermal models** Marcus Haynes, Frank Horowitz, Malcolm Sambridge, Ed Gerner, Graeme Beardsmore	S25-1-03
14:30	**Energy Budget of the Global Lands in the Course of Recent Climate Change** Shaopeng Huang	S25-1-04
14:45	**Development of geothermal studies in Uzbekistan** Irina Sidorova	S25-1-05

Session: **S25-P**
Type: Poster
Date: Thursday, August 3/ Friday, August 4, 2017
Time: 15:30 - 16:30 / 15:00 - 16:00
Room: Event Hall

Title	Program No.
Temperature and heat flux changes at the base of Laurentide Ice Sheet inferred from geothermal data (evidence from province of Alberta, Canada) Dmitry Demezhko, Anastasia Gornostaeva, Jacek Majorowicz, Jan Safanda	S25-P-01

Evaluating methods and uncertainties in the inversion of downhole temperature data for palaeoclimate studies, Australian examples S25-P-02
Sandra McLaren, Roger Powell

A geothermal resource assessment based on GIS analysis of multiple parameters for the Guanzhong Basin, NW China S25-P-03
Yilei Xu, Tingting Ke, Shaopeng Huang, Ruyang Yu, Xiaoyin Tang

Terrestrial Heat flow and 1D Geoelectric Model of the Baiyinchagan Sag, Erlian Basin, Northern China S25-P-04
Jiong Zhang, Rao Fu, Yongshui Zhou, Yi Wang, Di Hu, Yinhui Zuo, Shaopeng Huang, Xiaoyin Tang, Ruyang Yu

S26. Exploring connections between heat flow and tectonics

Session: **S26-1**
Session title: Exploring connections between heat flow and tectonics I
Type: Oral
Date: Thursday, August 3, 2017
Time: 08:30 - 10:00
Room: Room 503
Chairs: Valiya Hamza (National Observatory - ON/MCTI)
Masataka Kinoshita (University of Tokyo)

Time	Title	Program No.
08:30	**Shallow crustal heat flow and heat production inversion** Marcus Haynes, Rhys Hawkins, Malcolm Sambridge, Graeme Beardsmore	S26-1-01
08:45	**Magma underplating at crust mantle interphase as the source of anomalous heat flow in passive continental margins** Valiya Hamza, Fabio Vieira	S26-1-02
09:00	**Two-dimensional thermal modeling associated with subduction of the Philippine Sea plate beneath southern Kyushu, Japan** Nobuaki Suenaga, Shoichi Yoshioka, Takumi Matsumoto	S26-1-03
09:15	**Reconstruction of recent 6Ma thermal structure seaward of updip limit of Nankai seismogenic zone off Kumano inferred from IODP NanTroSEIZE geothermal data and time-dependent numerical model** Masataka Kinoshita, Eiichiro Araki, Toshinori Kimura, Achim Kopf, Demian Saffer, Sean Toczko	S26-1-04
09:30	**Numerical Simulation of the Geothermal Effect of the Millennium Eruption of the Changbaishan Tianchi (Mt. Paektu) Volcano at Sino-North Korean Border** Wentao Duan, Ting Ke, Shaopeng Huang, Xiaoyin Tang	S26-1-05

Session: **S26-2**
Session title: Exploring connections between heat flow and tectonics II
Type: Oral
Date: Thursday, August 3, 2017
Time: 10:30 - 12:00
Room: Room 503
Chairs: Makoto Yamano (The University of Tokyo)
Yoshifumi Kawada (Tohoku University)

Time	Title	Program No.
10:30	**Heat flow distribution along the Nankai Trough floor correlated with the crustal structure of the incoming oceanic plate** Makoto Yamano, Yoshifumi Kawada, Mikiya Yamashita	S26-2-01
10:45	**Modelling three-dimensional hydrothermal heat transport around the Nankai Trough** Yoshifumi Kawada, Makoto Yamano, Xiang Gao	S26-2-02
11:00	**Curie Depth Point of the Iberian Microplate. A thermal, compositional and tectonic perspective of its evolution** Juvenal Andres, Ignacio Marzan, David Marti, Imma Palomeras, Puy Ayarza, Ramon Carbonell	S26-2-03
11:15	**An attempt to relate heat flow density, gravity, magnetic, geoid, elevation and seismic data in the SW of the Iberian Peninsula trying to obtain lithosphere thickness and information related with African and Iberian plate borders** Maria Rosa Duque	S26-2-04
11:30	**Seismogenic Layer within the Crust beneath Japanese Islands on the Japan Sea Side – application of JUICE catalog** Tomoko E. Yano, Makoto Matsubara	S26-2-05

Session: **S26-P**
Type: Poster
Date: Thursday, August 3/ Friday, August 4, 2017
Time: 15:30 - 16:30 / 15:00 - 16:00
Room: Event Hall

Title	Program No.
Heat flow map of the Czech Republic, revisited Petr Dedecek, Vladimir Cermak, Jan Safanda, Milan Kresl	S26-P-01
Heat flow and tectono-thermal histories in cratons of China Lijuan He	S26-P-02
Indications of “hot belts" along passive continental margin of Brazil Fabio Vieira, Valiya Hamza	S26-P-03

S27. Geothermal energy: Ground source heat pump, hydrothermal system, and hot dry rocks

Session: **S27-1**
Session title: Geothermal energy: Ground source heat pump, hydrothermal system, and hot dry rocks
Type: Oral
Date: Friday, August 4, 2017
Time: 10:30 - 12:00
Room: Room 503
Chairs: Makoto Taniguchi (Research Institute for Humanity and Nature)
Hideki Hamamoto (Center for Environmental Science in Saitama)

Time	Title	Program No.
10:30	**The efficiency of Borehole heat exchanger system by regional differences** Hideki Hamamoto, Yuji Miyashita, Philipp Blum, Alexander Limberg, Makoto Taniguchi	S27-1-01 invited
10:45	**Assessment of efficiency and potential of a ground source heat pump system under geological complexity in Japan** Yoshitaka Sakata, Takao Katsura, Katsunori Nagano, Atsunao Marui	S27-1-02 invited
11:00	**Alternative use of subsurface energy as heat pump or groundwater** Makoto Taniguchi, Hideki Hamamoto	S27-1-03 invited
11:15	**Subsurface temperature modelling with inverse parameter optimisation** Niels Balling, Soeren E. Poulsen, Sven Fuchs, Soeren B. Nielsen	S27-1-04 invited
11:30	**Three-Dimensional (3-D) Attenuation Tomography in “FF" Geothermal Field, Indonesia** Fadli Faturrahman Rusli, Andri Dian Nugraha, Mohammad Rachmat Sule	S27-1-05 invited
11:45	**Magnetotelluric surveys to delineate shallow reservoir of low-enthalpy geothermal systems in Thailand** Puwis Amatyakul, Songkhun Boonchaisuk, Chatchai Vachiratiencha, Tawat Rung-Arungwan, Kriangsak Pirarai, Aranya Fuangswasdi, Weerachai Siripunvaraporn	S27-1-06 invited

Session: **S27-P**
Type: Poster
Date: Thursday, August 3/ Friday, August 4, 2017
Time: 15:30 - 16:30 / 15:00 - 16:00
Room: Event Hall

Title	Program No.
Evaluation of geothermal energy potential for heating/cooling of the Xi'an Jiaotong University new campus in Xixian, Shaanxi, China Tingting Ke, Yilei Xu, Shaopeng Huang, Xiaoyin Tang, Wentao Duan	S27-P-01
RINGEN - Research INfrastructure for Geothermal ENergy Petr Dedecek, Vladimir Cermak, Jan Safanda, Tomas Fischer, Antonin Tym	S27-P-02

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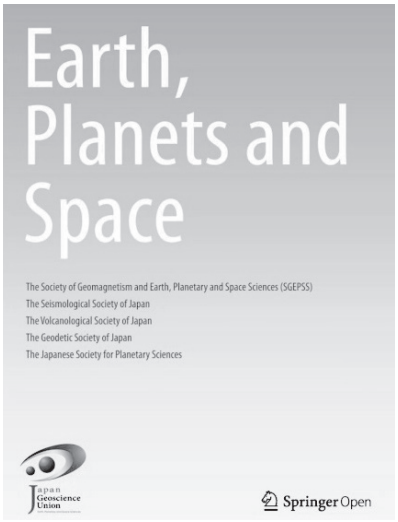

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