



IASPEI

Co-operate internationally to better understand our Earth

<http://www.iaspei.org>

IASPEI 2007~2011 and beyond

**Presidential address
on behalf of the IASPEI Bureau
at the Association Opening Plenary
during the XXV IUGG General Assembly
Melbourne, Australia**



IASPEI

Co-operate internationally to better understand our Earth

<http://www.iaspei.org>

- **Firstly on behalf of IASPEI Bureau and IASPEI Executive Committee, I would like to express our sincere thanks to all of you for coming to the IUGG General Assembly.**
- **I would like to express our special thanks to the Local Organization Committee (LOC) for their works in the successful organization of this important event.**



IASPEI

Co-operate internationally to better understand our Earth

<http://www.iaspei.org>

- **As stated by our Charter, IASPEI is dedicated to the advancement, promotion, and communication of knowledge in the fields of earthquake and engineering seismology, and physics of the Earth's interior.**



IASPEI

Co-operate internationally to better understand our Earth

<http://www.iaspei.org>

- **Prof. Bob Engdahl, IASPEI president 2003~2007:**
- *The organizational structure and the scientific programs of IASPEI have been created around an essential and guiding concept.*
- *International cooperation is the guiding principle for the advancement of seismology and physics of the Earth's interior.*



IASPEI

Co-operate internationally to better understand our Earth

<http://www.iaspei.org>

- **Prof. B. L. N. Kennett, IASPEI president 1999~2003:**
- *In the last few years IASPEI has moved towards a thematic structure for the generation of the programs for General Assemblies and IUGG Meetings. The theme approach has generally worked well.*
- **During the last 4-years, IASPEI kept this theme approach.**



IASPEI

Co-operate internationally to better understand our Earth

<http://www.iaspei.org>

Cape Town info

When you visit Cape Town, bring your camera!

Table Mountain presides majestically over the entire city basin, with landscapes as diverse as beaches and winelands just a short drive away.

Cape Town is the second largest economic hub of South Africa and is indeed a city that embraces its ancient and recent history, fusing it with a sense of cutting edge design, contemporary fashion, and social chic. In addition, top-notch service and excellent meeting facilities converge with a world-class infrastructure to deliver a sophisticated business environment.

The Mother City is held in high regard by leisure and business tourists around the world and enjoys an international reputation for superior service and first-rate facilities, all against a backdrop of awe-inspiring natural beauty.

We look forward to welcoming you to Cape Town!

The Victoria and Alfred Waterfront

Contact Details:

Michelle Grobbelaar
Council for Geoscience
Private Bag X112
Pretoria
0001
SOUTH AFRICA

Tel: +27 (0)12 841 1200
e-mail: iaspei2009@geoscience.org.za

FIRST CIRCULAR

International Association of Seismology
and Physics of the Earth's Interior

IASPEI

General Assembly
2009

moribo wa lefatshe

Cape Town

10-16 January 2009

www.geoscience.org.za/iaspei2009

Council for Geoscience

- **January 2009: the IASPEI Assembly was successfully held in Cape Town – the first IASPEI Assembly in the African continent**



IASPEI

Co-operate internationally to better understand our Earth

<http://www.iaspei.org>



IASPEI-IAHS-IAPSO Joint Assembly will be held in 2013...



IASPEI

Co-operate internationally to better understand our Earth

<http://www.iaspei.org>

- **IASPEI commissions:**
 - **education and outreach**
 - **seismological observation and interpretation**
 - **tectonophysics and crustal structure**
 - **earthquake sources – monitoring and modeling for prediction**
 - **Earth structure and geodynamics**
 - **earthquake hazard, risk and strong ground motion**
- **digital broadband seismograph networks**

The Association has several active Commissions, being the focus of not only Assemblies,



IASPEI

Co-operate internationally to better understand our Earth

<http://www.iaspei.org>

- **IASPEI-participated joint commissions:**
 - **the physics and chemistry of Earth materials**
 - **volcano geophysics**
 - **heat flow**
 - **electromagnetic studies of earthquakes and volcanoes**
 - **tsunami warning**
 - **international ocean network**
 - **Earth sciences in Africa**
 - **studies on subduction zones located in developing countries**
 - **re-use of submarine telephone cables**
- **mathematical geophysics, lithosphere study, geophysical risk and sustainability**

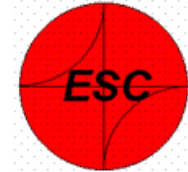
but also international collaboration, bridging IASPEI and our sister associations, as well as the Union



IASPEI

Co-operate internationally to better understand our Earth

<http://www.iaspei.org>



- September, 2008, **European Seismological Commission (ESC)**'s 31st General Assembly in Hersonissos, Crete island
- November, 2008, the **7th General Assembly of Asian Seismological Commission (ASC) and Seismological Society of Japan (SSJ) 2008 Fall Meeting** in Tsukuba, the first joint meeting of ASC with national seismological society
- September, 2010, **European Seismological Commission (ESC)**'s 32nd General Assembly in Montpellier
- November, 2010, the **8th General Assembly of Asian Seismological Commission (ASC)** in Hanoi



IASPEI

Co-operate internationally to better understand our Earth

<http://www.iaspei.org>

- August 2010: The Meeting of the Americas, Foz do Iguacu, Brazil

2010 Meeting of the Americas - Microsoft Internet Explorer

文件(F) 编辑(E) 查看(V) 收藏(A) 工具(T) 帮助(H)

地址(📍) <http://www.agu.org/meetings/ja10/>

金山在线

Home

Scientific Program
Presenter & Session
Chair Guidelines
Lectures, Union
Sessions & Webcasts
Events, Honors,
Business Meetings
Registration
Information
Hotels, Travel & Venue
Meeting Services
Exhibitors
Education & Outreach
News Media

2010 The Meeting of the Americas
8 - 13 August
Rafain Hotel and Convention Center
Av. Olimpio Rafagain, 2357
Foz do Iguacu - PR, 85862 - 210, Brazil

Welcome!
The Meeting of the Americas is being held in Foz do Iguassu, 08 - 13 August 2010. The Program Committee will develop a Union-wide science program that will cover topics in all areas of geophysical sciences. With its majestic beauty, rich history, and tropical grandeur, the cosmopolitan city of Foz de Iguassu is an ideal venue for a productive meeting and a memorable experience.

Session Proposals
Deadline: 31 December 2009 — 23:59h ET, or 03:59+1 GMT.
Members of the Earth and space sciences community are invited to propose a session for the 2010 Meeting of the Americas. Visit the [Session Proposal section](#) for more details.
[View Session Proposal Submissions](#)

Sponsors
[AAGG](#) [ABC](#) [ABEQUA](#) [ABRH](#) [ALAGE](#) [ADCEAND](#) [CERESIS](#) [IASPEI](#) [IGEO](#) [LATINMAG](#)
[SBC](#) [SBGeS](#) [SBGT](#) [SBGa](#) [SBMet](#) [SUG](#) [UGM](#) [AGU](#)

Network:

Session Proposals Now Open

Deadlines*
31 Dec Session Proposals

*All deadline times are 23:59 Eastern Daylight Time (EDT). See Time Zone Converter to find your deadline.

Contact Information
AGU Meetings Department
2000 Florida Avenue, NW
Washington DC 20009
USA
Phone: +1 202 462 6900
N. America: (800) 966-2481
Fax: +1-202-328-0566
E-mail: ia-helo@agu.org
(Subject: 2010 Meeting of the Americas)

Staff Contacts
Susanna Kealey
Meetings Manager
+1 202-777-7331
skealey@agu.org
Sharmonta L. Grant
Meetings Coordinator
+1 202-777-7329
sgant@agu.org

开始 | Internet | 8:11

Cooperating with AGU

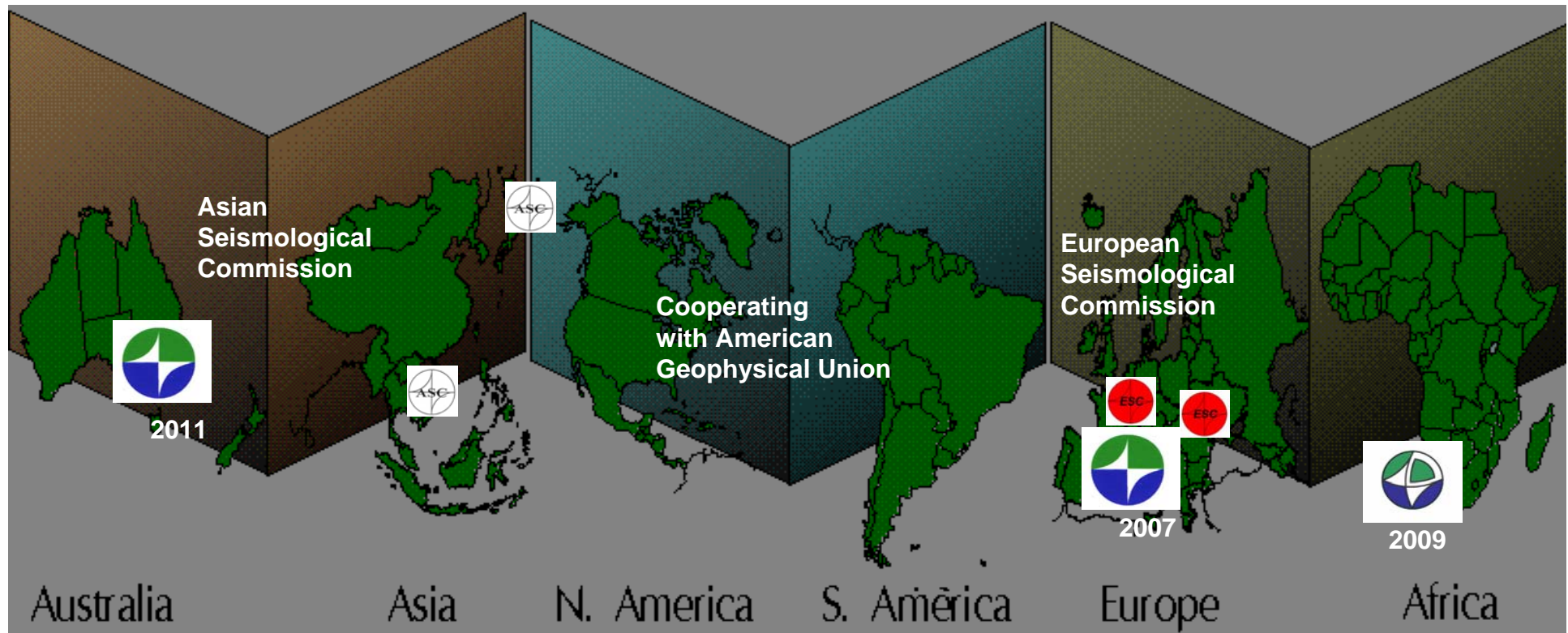


IASPEI

Co-operate internationally to better understand our Earth

<http://www.iaspei.org>

- In the perspective of Assemblies and Regional Meetings: IASPEI is becoming global (to some extent)...





IASPEI

Co-operate internationally to better understand our Earth

<http://www.iaspei.org>

- **2007 4**
- 10th International Workshop on Modeling of Mantle Convection and Lithospheric Dynamics, September 2-7, 2007, **Carry-le-Rouet**, France.
- International Trainings Course on Array Seismology, June 30 – July 3, 2007, **Arezzo** (Italy).
- IRIS Seismological Workshop 'Managing Waveform Data and Related Metadata for Seismic Networks', October 21-26, 2007, **Kuala Lumpur**, Malaysia.
- International Scientific Conference to mark the 50th Anniversary of the Founding of the Geophysical Observatory of Addis Abeba University, November 1- 4, 2007, **Addis Abeba**, Ethiopia.

IASPEI has sponsored (on its own or via an IUGG grant) the following workshops/symposiums

In **Europe, **Asia**, **America**, and **Africa****



IASPEI

Co-operate internationally to better understand our Earth

<http://www.iaspei.org>

- **2008 3**
- **38th European Seismological Commission General Assembly: Young Scientists Training Course, September 2008, [Chania](#), Greece.**
- **7th Asian Seismological Commission General Assembly: ASC International Trainings School, November 2008, [Tsukuba](#) (Japan).**
- **WG Subduction Zones in Less-developed Countries, WG meeting at IAVCEI2008 Scientific Assembly, August 17-22, 2008, [Reykjavik](#), Iceland.**

In [Europe](#), [Asia](#), [America](#), and [Africa](#)



IASPEI

Co-operate internationally to better understand our Earth

<http://www.iaspei.org>

- **2009 7**
- The Second International Seminar on Prediction of Earthquakes Prediction, **Lisbon**, Portugal, 29-30 April, 2009.
- International Symposium on Earthquake Seismology and Earthquake Predictability, **Beijing**, China, May, 2009; organized by the Seismological Society of China and the Institute of Geophysics, CEA.
- Workshop: From Core to Crust: Towards an Integrated Vision of Earth's Interior July 20 – 24, 2009, **Trieste**, Italy, at The Abdus Salam International Center for Theoretical Physics.
- Advanced Workshop on Evaluating, Monitoring and Communicating Volcanic and Seismic Hazards in East Africa, August 17 - 28, 2009, **Trieste**, Italy, at the Abdus Salam International Center for Theoretical Physics.
- The International Geodynamics meeting at **Suzdal**, near Moscow, August 2009 with topics ranging from crustal dynamics to core convection.
- IRIS Seismological Workshop 'Managing Waveform Data and Related Metadata for Seismic Networks', November 8-16, 2009, **Cairo**, Egypt.
- The 11th International Workshop on Modeling of Mantle Convection and Lithospheric Dynamics held in **Braunwald**, Switzerland from June 28 to July 3, 2009.

In **Europe**, **Asia**, **America**, and **Africa**



IASPEI

Co-operate internationally to better understand our Earth

<http://www.iaspei.org>

- **2010 3**
- The VIII International Workshop “Physics and Forecasting of Rock Destruction”, **Saint Petersburg**, Russia, from 24 to 29 May 2010.
- The IRIS Workshop on “Managing Waveform Data & Related Metadata for Seismic Networks”, **Foz do Iguaçu**, Brazil, 13-19 August 2010.
- 13th Business Meeting of IASPEI/IAGA/IAVCEI Inter-Association Working Group on Electromagnetic Studies of Earthquakes and Volcanoes (EMSEV), October 6, 2010, Chapman University, **California**, USA. The deployment of equipment for joint studies of electromagnetic, seismic and deformation of Taal volcano near Manila in the Phillipines has been partly supported by IASPEI.

In **Europe**, **Asia**, **America**, and **Africa**



IASPEI

Co-operate internationally to better understand our Earth

<http://www.iaspei.org>

- **2011 5**
- The Fourth International Symposium on the effects of Surface Geology on Seismic Motion, will be held in Santa Barbara, **California**, USA in August 2011.
- Seismotectonics and Seismic Hazards in Africa, a session at the CAG23, 7 - 14 January, 2011, **Johannesburg**, South Africa.
- Short course on Waveform Inversion for local earthquakes. OVSICORI Institute, Universidad Nacional de Costa Rica, **Heredia**, Costa Rica. Fall 2011.
- International Symposium on Geophysical Imaging with Localized Waves, **Sanya**, Hainan Island, China. July –August 2011.
- 12th International Workshop on Modeling of Mantle Convection and Lithospheric Dynamics. **Groß Dölln** , Germany. August 20 to 25 2011

In **Europe**, **Asia**, **America**, and **Africa**



IASPEI

Co-operate internationally to better understand our Earth

<http://www.iaspei.org>

- **IASPEI sponsored several good projects:**
- **rotational seismology**
- **SeismoArcives project**





IASPEI

Co-operate internationally to better understand our Earth

<http://www.iaspei.org>

scientific products: an incomplete list

- **International technical standards and recommendations** that facilitate operational works in seismology, such as magnitude and intensity scales, seismic phase nomenclature, format of seismic data, and recommendations on site selection and construction of seismic stations.
- **Earth models, travel time tables, and relocated and calibrated earthquake catalogues** not only reflect the state-of-the-art of seismology and facilitate seismological observation practice, but also act as an interface between seismology and other research fields, including interdisciplinary studies on the physics and chemistry of the Earth's interior.
- Many places worldwide have benefited from IASPEI's development of **seismological software, training courses** for young scientists, and **manuals** for seismological observatory practice.



IASPEI

Co-operate internationally to better understand our Earth

<http://www.iaspei.org>

the Bureau: special attention to

- website and newsletter
- sympathy to people suffering from disastrous events
- responses to requests from colleagues all over the world
- inter-organizational cooperation
- resolutions: collection, implementation, and evaluation
- statute and by-laws revision



Bureau meetings: Vienna, Cape Town, Shanghai, Melbourne



IASPEI

Co-operate internationally to better understand our Earth

<http://www.iaspei.org>

- **Resolution 2007: AK135 for location**
- **source parameters**
- **timely-reporting to ISC**
- **unit Aki for seismic moment**
- **Resolution 2009: Global Earthquake Model**
- **reference events**
- **seismic station registration**
- **earthquake forecast**
- **real-time data access**

IASPEI Resolutions play a constructive role in promoting research and collaboration



IASPEI

Co-operate internationally to better understand our Earth

<http://www.iaspei.org>

International Scientific Studies (ISS) of the Implementation of the CTBT Verification System, 2009

The screenshot displays the website for the International Scientific Studies Project (ISS) of the CTBT Preparatory Commission. The page features a navigation menu on the left with links such as 'NUCLEAR TESTING', 'PRESS CENTRE', and 'SITE MAP'. The main content area is titled 'ISS09 INTERNATIONAL SCIENTIFIC STUDIES' and includes an 'ANNOUNCEMENT' section. The announcement states that the ISS-2009 Conference will be held in Vienna, Austria, from 10-12 June 2009. It also mentions that the conference is intended as a forum for dialogue on issues related to the capability and readiness of the Comprehensive Nuclear-Test-Ban Treaty (CTBT) verification regime. The page also includes sections for 'LEARN MORE', 'INTERACTIVE MAP', 'WATCH OUR MOVIE', and 'CALENDAR OF EVENTS'.

New start of the cooperation between PTS and IUGG

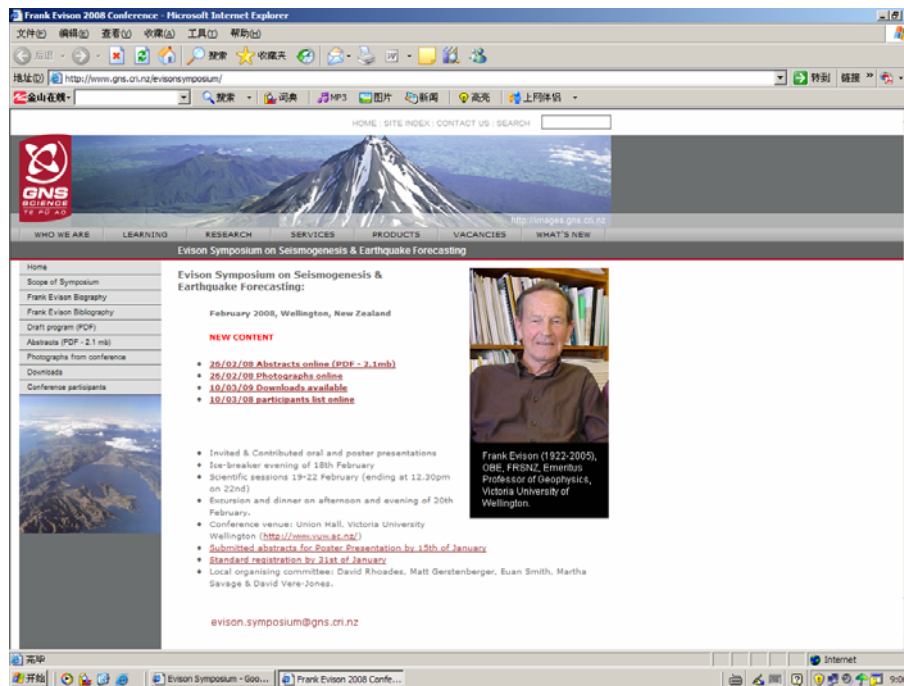


IASPEI

Co-operate internationally to better understand our Earth

<http://www.iaspei.org>

- **Evison Symposium on Seismogenesis and Earthquake Forecasting, 2008**
- **Working Group for the Collaboratory for the Study of Earthquake Predictability (CSEP), SHR, 2007**



New generation of the IASPEI evaluation of earthquake forecast



IASPEI

Co-operate internationally to better understand our Earth

<http://www.iaspei.org>

- **Global Earthquake Model (GEM) project, with IASPEI and IASPEI-people playing an active role, since 2008**



New start of the cooperation between industry and scientific community



IASPEI

Co-operate internationally to better understand our Earth

<http://www.iaspei.org>



- In October 2008, during the **14th World Conference on Earthquake Engineering (WCEE)**, Beijing, the IAEE-**IASPEI Dialogue** mechanism was formulated
- This mechanism is to be kept in the next WCEE meeting in Portugal

New start of the cooperation between seismology and earthquake engineering

From earthquakes we learnt a lot...

THE HISTORY OF SEISMOLOGY

Robert Hooke, CEIIOSSOTTUU

In 1686 the English Physicist published a treatise entitled the *Theory of Earthquake* or *Springiness* with the analogy above as the title page. The solution to the puzzle is *Ut Tensio, Sic Vis*, or "as the extension so the force". Today we state this as *Hooke's Law*. This is the first fundamental mathematical formulation in modern Seismology.

Lisbon 1755

Minutes after the event it became recognized that the *Tremor* from which it ran through the center of the city. The *Lisbon Earthquake* was the first event to be studied scientifically. J. M. de S. analyzed the shaking was caused by waves propagating from a distant source, and that the motions were very similar to those produced by sound in air.

1830 Discovery of P and S waves

The early part of the nineteenth century was an extraordinary time for mathematics. French mathematicians Fourier and Cauchy developed equations for elasticity. Then, in 1830 Poisson published a paper showing that there were two fundamental elastic waves, P and S waves. Poisson's theory, which is a version of the S to P initially, is widely used in seismology today.



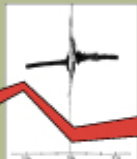
Robert Mallet

Robert Mallet not only the inventor of the first seismograph. Robert Mallet was considered the "father" of seismology. Born in Ireland, he was an engineer of characteristic skill and his contributions to seismology mark the birth of the science. He conceptualized the first comprehensive earthquake catalog and world seismicity map. In the late 1830's Mallet used explosives to produce seismic waves and investigate the idea that seismic waves travel at different speeds in different rock types. Following the 1857 Neapolitan earthquake, Mallet traveled to Italy and used the orientation of cracks and fallers in masonry produced an isoseismal map for the event. The map delineated areas of low the intensities of shaking.



John Milne

In 1875 a 25 year old mining engineer named John Milne was invited to become a professor of geology at the Imperial University of Tokyo. Milne designed a series of surveys of Japan and soon recognized the importance of measuring the seismograph. Milne was a great proponent of establishing a world wide seismic network, designed several types of seismometers, and built the first portable gold standard time clock.



1885, The First Torsion

The first test a torsion seismometer was conducted with a distinct earthquake was in 1885. The record shows a sharp Japanese earthquake is recorded in Potsdam, Germany.

April 18, 1906

In the name of the century San Francisco was a bustling port city with a population of 400,000. Early on the morning of April 18 a major earthquake occurred on the San Andreas Fault, and the "City by the Bay" was decimated. A nearly 400 km long section of the fault slipped with shifts as great as 6 meters. Many of the structures in the city were destroyed, but much of the loss was caused by the ensuing fire that burned out of control for

San Francisco 1906

September 1, 1923 Tokyo

One of the deadliest earthquakes of this century occurred in east-central Japan. The death toll in Tokyo is nearly 1 million people were killed homeless. Geologically this is developed area part of the 20th century. Professor Fusakichi Omori had studied earthquakes in Japan and in 1922 established the *Japan Earthquake Institute* "earthquake" and predicted that an earthquake would strike the region in the future. After the 1923 earthquake the legend of Earthquake Investigators, *Chinuwaku*.

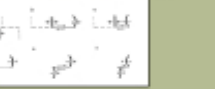
Tokyo 1923

Wadati: The Discovery of Deep Earthquakes

Kiyoo Wadati stated that earthquakes with the same epicenter but very different depths (10 and 30 km) arrived later. Wadati reasoned that this phenomenon was due to different focal depths (depths) below the surface of the Earth for the earthquakes. Wadati proved conclusively that deep focus earthquakes occurred, and showed that the depths of these events formed an inclined plane beneath Japan, which we now recognize as subduction zones. Wadati's observations had a profound effect on other seismologists, who in turn, produced the first 2-D picture that suggested plate tectonics in 1933.

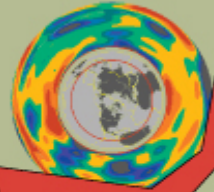
1960 J. Tuzo Wilson and Transverse Faults

The spatial distribution of earthquakes was a fundamental in developing the theory of plate tectonics. J. Tuzo Wilson was a major contributor with the discovery of Transverse Faults, which are linear faults with significant strike or are strongly orientated by ridges or collision zones.



July 28, 1976

The deadliest earthquake of the 20th century struck the city of Tangshan, China on July 28, 1976. The death toll lay in excess of 500,000. The industrial city was totally destroyed when a 7.5 magnitude 6.9 earthquake, felt in 1000 km radius, struck the city through the city's support system. 7 million.

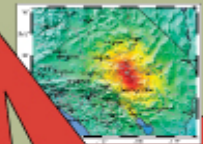


Earth Velocity Structures

Though a very large number of earthquakes it is possible to map changes in velocity throughout the interior of the Earth, known as tomographic slices. These slices can show deepening, slabs and the spreading of hot material.

Seismology from Space

The satellites along a fault during an earthquake causes perturbations in the orbit of the Earth's ionosphere. This orbit altitude can be measured from space by a technique called GPS. By comparing this orbit altitude before and after the earthquake, it is possible to measure changes in the ground surface. This technique was used to produce a map of the ground surface following the October 18, 1999 Hector Mine earthquake, a magnitude 7.1 event in the Mojave Desert of California.



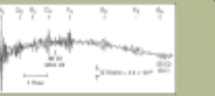
Shake Map

Shake Maps (isoseismal collection of waves in data allows for the construction of maps depicting shaking intensity within segments of an earthquake sequence). Shake Maps can highlight areas of expected damage and help provide rapid emergency response as a device on the left for the Hector Mine earthquake.

Chile 1960

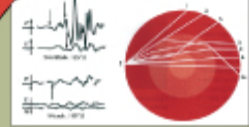
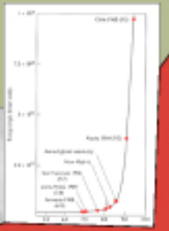
The largest earthquake is recorded in the southern Chile in 1960.

The largest earthquake is recorded in the southern Chile in 1960. The earthquake, which had a magnitude of 9.5, ruptured a 1000 km section of the subduction zone where the Nazca plate subducts beneath Chile. The event triggered a tsunami that not only devastated the coast of Chile but struck off as far as Alaska. The 800 meter height waves reached to over 10 meters. The Chilean earthquake was the first event to produce free oscillations of the entire planet, and can be used to detail the structure of the Earth's deep interior.



1935: The Richter Scale

Richter was assessing a catalog of California earthquakes. Richter wanted to establish the catalog with the "size" of the earthquake instead of the amount. He developed a measure of earthquake size based on two fundamental principles: the level of shaking experienced at a distant site will depend on the size of the earthquake, and the level of shaking will decrease the further the distance traveled by the seismic waves. Richter used these principles to develop a logarithmic scale such that a 10 fold increase in shaking would be recorded as a 1.0 increase on the Richter Scale. Although Richter's early work mainly applied to southern California, it served as the basis for modern magnitude scales.



July 16, 1965

July 16, 1965 at 1:38 am, the USGS detected the first nuclear weapon in central New Mexico. The test, code named *TRISTITY*, had an explosive yield of approximately 16,000 tons of TNT, the closest atomic attack to us in Tucson, and the event at Los Alamos. Geologists used the record to determine the origin time of the explosion. The ability to successfully record this and other explosions gave rise to the field of "vibrance seismology".



T. Wallace, A. Paquette, and M. Hall-Wallace
University of Arizona

In the last four years we experienced so many earthquakes

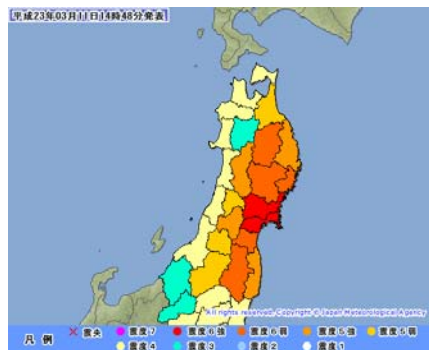


IASPEI

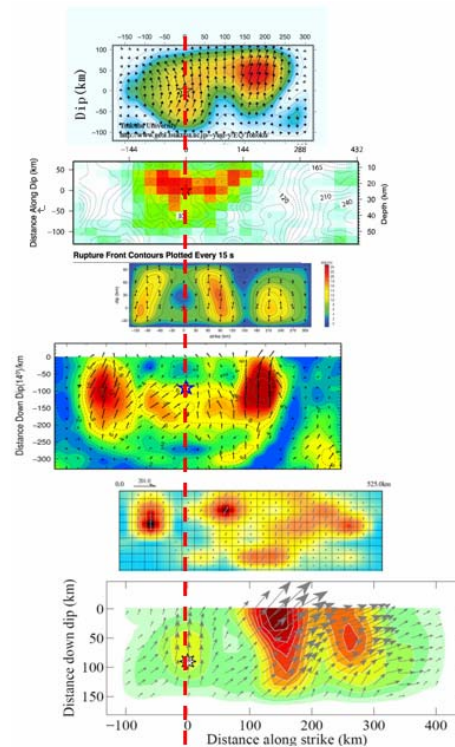
Co-operate internationally to better understand our Earth

<http://www.iaspei.org>

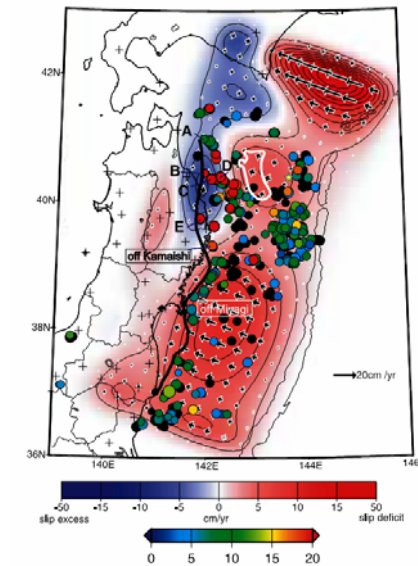
Tohoku Japan 2011



JMA quick report of intensity



Quick report of rupture process by different leading institutions



Repeating earthquakes and interplate aseismic slip in the NE Japan subduction zone by Igarashi et al., 2003

Showing the capability, potential, and limit of modern seismology...



IASPEI

Co-operate internationally to better understand our Earth

<http://www.iaspei.org>

Haiti 2010



IASPEI-ISC
networking project

Reminding of the fact that IASPEI has not been really international... , and calling for further international cooperation

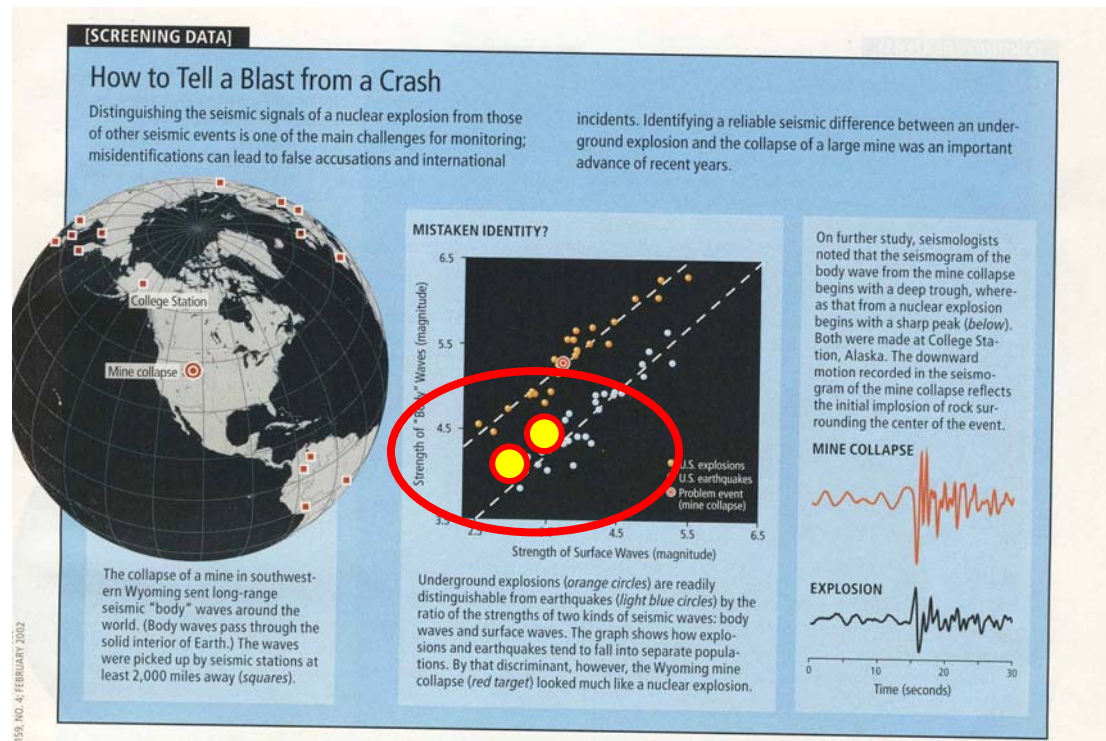


IASPEI

Co-operate internationally to better understand our Earth

<http://www.iaspei.org>

DPRK nuclear test 2009



Background picture from P. G. Richards

Challenging the well-established discrimination method, and showing the potential of high-precision seismology

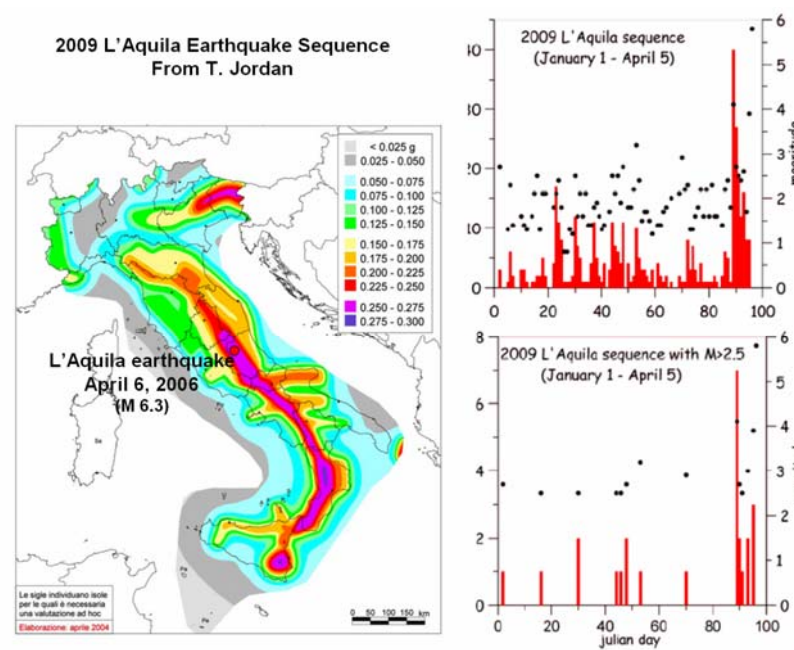


IASPEI

Co-operate internationally to better understand our Earth

<http://www.iaspei.org>

L'Aquila 2009



Slide from T. Jordan, leader of the
International Commission on Earthquake Forecasting (ICEF)

The first time seismology met legal problem...

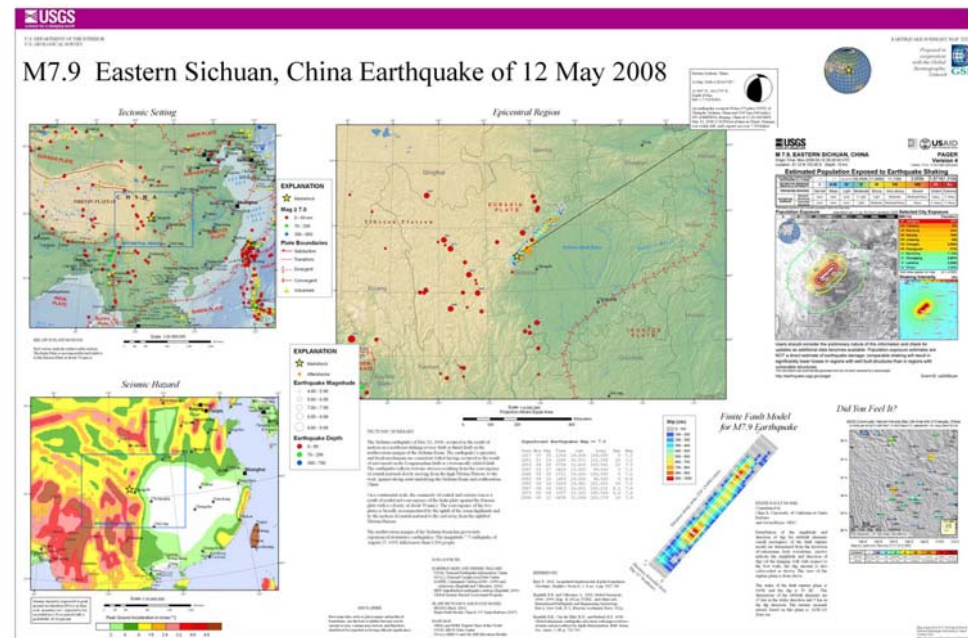
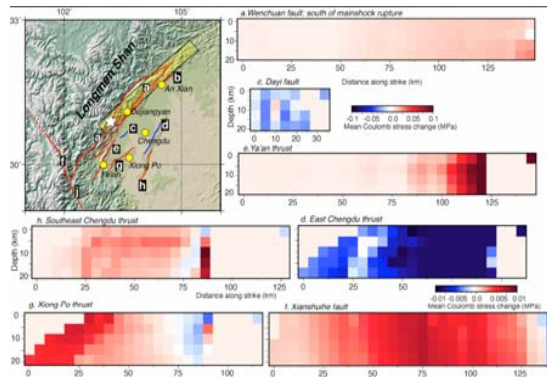


IASPEI

Co-operate internationally to better understand our Earth

<http://www.iaspei.org>

Wenchuan 2008



Challenging the classical understandings of the geodynamics of inland mega-thrust...



IASPEI

Co-operate internationally to better understand our Earth

<http://www.iaspei.org>

Niigata Japan 2007



Recalling the Niigata, Japan, 2007, earthquake and the nuclear panic followed...



IASPEI

Co-operate internationally to better understand our Earth

<http://www.iaspei.org>

- **artificial earthquakes generated by 'green-sources'**
- **'repeating' earthquakes by waveform cross-correlation**
- **'silent' earthquakes or epidemic tremors and slips (ETS)**
- **tremors triggered by seismic waves**
- **'virtual' earthquakes by cross-correlating seismic wave fields**

Important 'earthquakes' investigated since the 21st century



Seismology: Endless Frontier

Wu Zhongliang and Peter Suhadolc
International Association of Seismology and Physics of the Earth's Interior (IASPEI)



...this is not the end. This is not even the beginning of the end. But, perhaps, the end of the beginning.
Winston Churchill

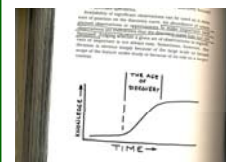
<http://www.iaspei.org>

PRESENTED AT

<http://www.ctbto.org>

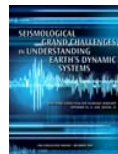
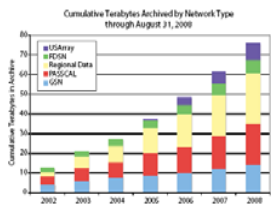
IMS is an international facility for large-scale scientific projects originally aiming at the monitoring of a Comprehensive Nuclear Test Ban Treaty. Whether IMS would like to be concerned also with the fundamental scientific problems of seismology and physics of the Earth's interior depends to much extent on its interest in the state-of-the-art and future progress of this scientific branch. Such a concern is quite reasonable, since generally it is not possible for a scientific branch to be always in a fast-growing period.

If one plots cumulative knowledge as a function of time using almost any measure of knowledge, the curve will rise slowly at early times, then rise rapidly during a relatively short interval, then flatten out to become asymptotic to the total quantity of knowledge available in that subject.



The curve of discovery
(Jack E. Oliver, 1991. *The Incomplete Guide to the Art of Discovery*, NY: Columbia Univ. Pr.)

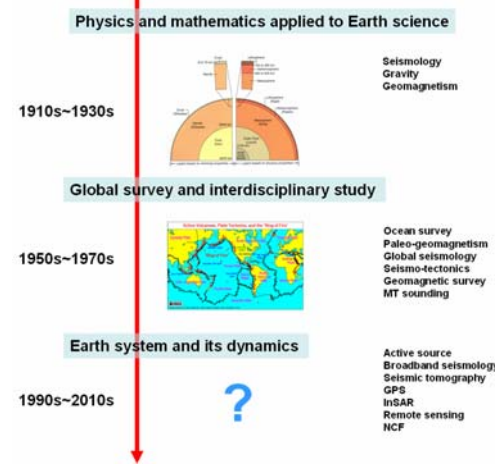
Accumulation of seismic data
Figure from:



For development of seismology, see:



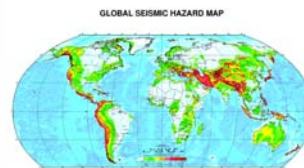
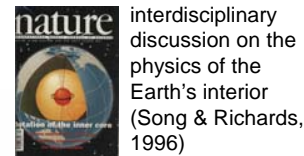
At present seismology is in a period of fast development. A new series of discoveries is underway, following the first series in the 1910s to 1930s which led to a clear picture of the Earth's interior, and the second one in the 1950s to 1970s which led to the establishment of global plate tectonics.



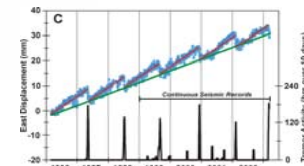
Among the driving engines of the new progresses in seismology and physics of the Earth's interior we can certainly list: meeting the increasing needs of society for the reduction of earthquake disasters and the exploration of resources; the interdisciplinary discussion on the physics of the Earth's interior and the physics of earthquakes; the continuous accumulation of high-quality observational data; application of new technologies in seismological observation and data analysis; debates on several unsolved fundamental problems related to earthquakes and the Earth's interior, and most importantly, the study of important earthquakes that provide opportunities for new discoveries in seismology.

For seismology-related meetings, see: <http://www.iaspei.org/meetings/forthcoming.html>

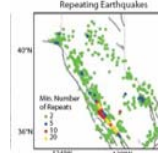
Driving engines of the new progresses in seismology: a few examples



increasing needs of society for the reduction of earthquake disasters (GSHAP, 1999, www.seismo.ethz.ch/GSHAP)

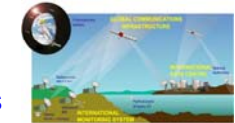


application of new technologies (Rogers & Dragert, 2003)



accumulation of high-quality observational data (Waldhauser & Schaff, 2008)

Big Science Devices in the development of basic science



In the perspective of seismology, IMS is by no means merely a machine simply applying well-established technologies. Similar to the role of the Hubble Space Telescope in astronomy, IMS provides a well-functioning global observation facility and has the potential to contribute to the new development of seismology and physics of the Earth's interior.

Hubble Space Telescope



European Organization for Nuclear Research



CERN

Beyond ISS09 Long-term perspective of the collaboration between seismological community and CTBT monitoring community

—Cape Town 2009: the first time for PTS group to attend IASPEI Assembly, having exhibition desks and technique presentations

—Possible follow-up of the ISS09 and possible starting of the long-term cooperation were envisaged by the meeting of ISS and IUGG/IASPEI leaders – in Cape Town in January, and in Vienna in April

—IASPEI proposed a union/inter-association session on CTBT monitoring for the IUGG 2011 General Assembly

—The mechanism of the IMS open data access is getting more clear: project-based open data access within the framework of ISS



WIKIPEDIA
The Free Encyclopedia

Article **Discussion**

Science of Team Science

From Wikipedia, the free encyclopedia

Navigation

Main page

Contents

Featured content

Current

Random

Donate

Interaction

Help

About Wikipedia

Community portal

Recent changes

This article may need to be **wikified** to me

IASPEI has been an excellent international team since its founding, making significant contributions both to Earth sciences and to social sustainability.

In a longer perspective, from the very beginning, seismology has been an active branch of International Team Science.

We hope and believe that IASPEI will continue to be an excellent international team in future.

The Science of Team Science (SciTS) field encompasses both the processes and outcomes of collaborative, team-based research or team science (SciTS) field. Team science initiatives are designed (inter-, and transdisciplinary) approaches to answering research questions concerned with understanding and managing circumstances that favor collaborative science. Its principal units of analysis are by both public and private sector organizations. The SciTS field focuses on processes, and outcomes associated with team science initiatives,

In the philosophy of science, there has been recently a new field



IASPEI

Co-operate internationally to better understand our Earth

<http://www.iaspei.org>

**thanking you very much
for your support
during the last 4 years**

**we hope and believe
that the next IASPEI Bureau
will be doing a much better job**