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IASPEI 2008

and

IASPEI 2009 Scientific Assembly

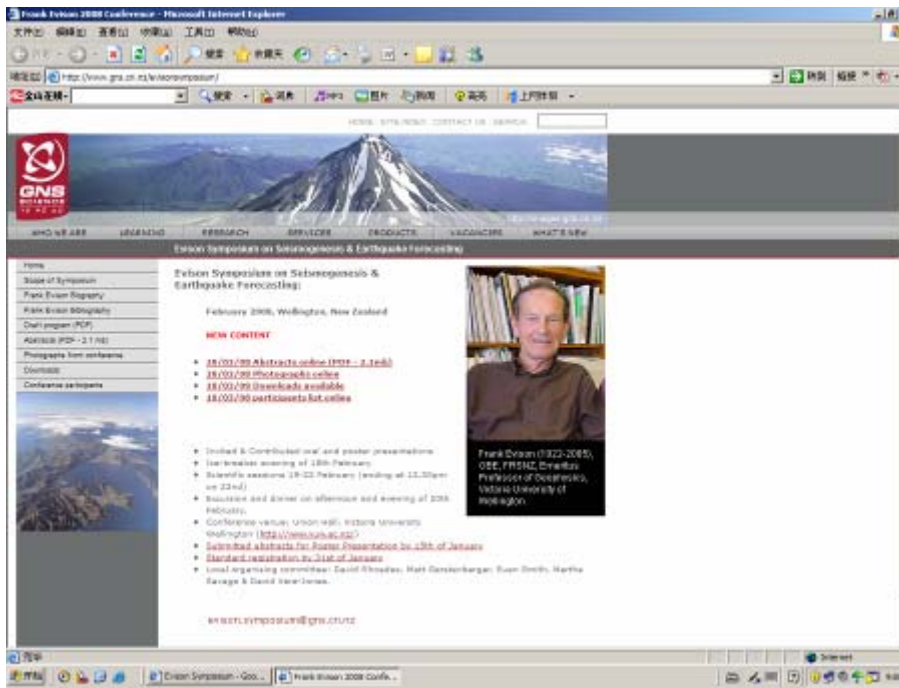


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- In February, **Evison Symposium on Seismogenesis and Earthquake Forecasting**, Wellington, explored new possibilities for the collaborative study of earthquake forecast. Now IASPEI has an active Working Group promoting the Collaboratory for the Study of Earthquake Predictability – this year there will be several meetings related to this topic.



IASPEI 2008 an informal and incomplete memory



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- In March, Marked by the Planning Meeting of the **International Scientific Studies of the Implementation of the CTBT Verification System** (called ISS project by the CTBTO PrepComm PTS), Vienna, cooperation between IASPEI and IMS started a new period – and the most important event in this year will be the **ISS 09** conference in June.

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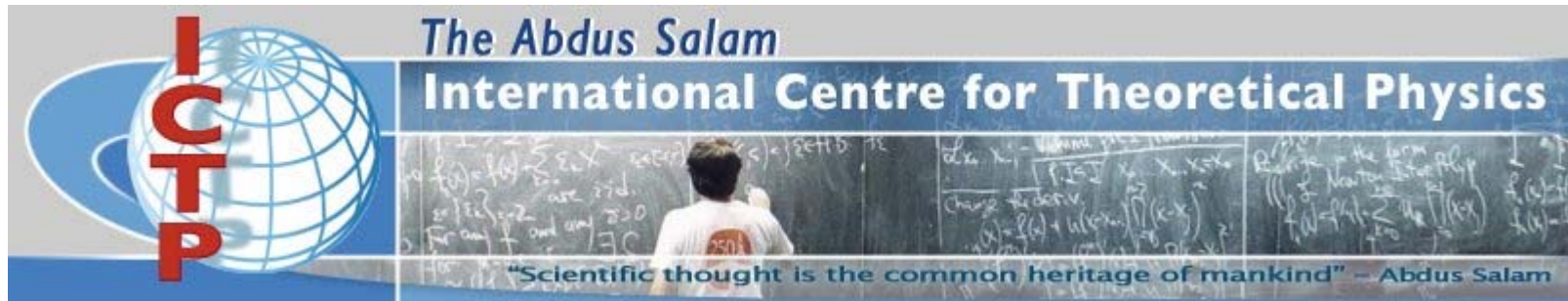
- In May, after the devastating Wenchuan earthquake, sympathy, aids, and helps from international seismological community to Chinese seismologists indicated our radical notion to collaborate internationally for the reduction of earthquake disasters.
- This year there will be an international symposium related to this earthquake to be held in China.



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- In September, the 9th Workshop on 3D Modelling of Seismic Waves Generation was held at ICTP, one of the many activities involving IASPEI scientists – and this year there will be the two IASPEI-sponsored ICTP workshops: From Core to Crust: Towards an Integrated Vision of Earth's Interior in July and Evaluating, Monitoring and Communicating Volcanic and Seismic Hazards in East Africa in August.



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- In October, during the **14th World Conference on Earthquake Engineering (WCEE)**, Beijing, the IAEE-**IASPEI Dialogue** mechanism was formulated – this mechanism will be kept in the next WCEE meeting in Portugal.



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CAPE TOWN INFO

When you visit Cape Town, bring your camera!

Table Mountain presides majestically over the entire city bowl, 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!

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IASPEI
General Assembly
2009

moribo wa Lafayette

Cape Town

10–16 January 2009

www.geoscience.org.za/iaspei2009

Council for Geoscience

- Throughout the year 2008, organization of the IASPEI Assembly was the highlight of the year. This Assembly is the first IASPEI Assembly in Africa, and will mark the beginning of the more fruitful 2009 – and now it's time for us to think where should be the next place for the IASPEI Assembly in 2013.

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- Through our commissions and working groups, international cooperation for **education and outreach**, **seismological observation and interpretation**, **studies on tectonophysics and crustal structure**, **earthquake sources**, **Earth structure and geodynamics**, **earthquake hazard, risk and strong ground motion**, and **digital broadband seismograph networks**, kept getting continuous progress.



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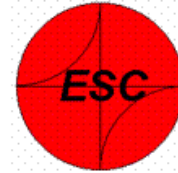
- Cooperating with our sister associations, IASPEI also contributed to the studies on **the physics and chemistry of Earth materials**, **volcano geophysics**, **heat flow**, **electromagnetic studies of earthquakes and volcanoes**, and **tsunami warning**, as well as the international cooperation in various aspects such as **international ocean network**, **Earth sciences in Africa**, **studies on subduction zones located in developing countries**, and **re-use of submarine telephone cables**, as well as non-rigid Earth nutations, mathematical geophysics, lithosphere study, and geophysical risk and sustainability.



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- IASPEI has two active regional commissions.
- In September 2008, the **European Seismological Commission (ESC)** held its 31st General Assembly in Hersonissos, Crete island, Greece.
- In November, the **7th General Assembly of Asian Seismological Commission (ASC) and Seismological Society of Japan (SSJ) 2008 Fall Meeting** was held in Tsukuba, Japan, being the first joint meeting of ASC with national seismological society.



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- Among the IASPEI-sponsored projects let's just mention the working group on rotational seismology and the SeismoArchives project.
- Through the efforts of our experts, we have so many projects on-going, contributing to the innovation of earthquake science and the reduction of earthquake disasters.



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- The year 2008 was decisive for the **Global Earthquake Model (GEM)** project, with IASPEI and IASPEI-people playing an active role – in 2009 this project will be formally launched.

A program of the OECD

overview science sponsorship meetings contacts

A public - private partnership

GEM
Global Earthquake Model

An independent standard to calculate and communicate earthquake risk, raise awareness, promote mitigation and insurance use, and stimulate risk transfer.

Meetings

GEM Software and Standards Group, 22-23 May 2008, Coltech/USGS

GEM Strategic Planning Meeting (72 scientists from 26 countries), 14-16 June 2008 Strategic Planning meeting, Zurich Development Centre (Rosa Steini's vision/mission speech)
Summary Presentations from the break-out groups:
Hazard Module (FPPT) (PDF)
Risk Module (FPPT) (PDF)
Economics Module (PPT) (PDF)

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Designed and maintained by: [Ocean Swegen, USGS](#)

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- In 2009, we are expecting many new events and advancements, as can be seen from our website.
- Also taking this opportunity we would like to thank Alice Walker, our website manager, for her contributions to make our website and newsletters more and more beautiful – also we urge our commissioners and national representatives to contribute to our website which is an interface between our community and the public.

The screenshot shows the IASPEI website homepage. The browser window title is "IASPEI: One of Seven Associations Forming IUGG". The address bar shows "http://www.iaspei.org/". The website header includes the IASPEI logo and the text "International Association of Seismology and Physics of the Earth's Interior". A navigation menu on the left lists: About IASPEI, Structure, Commissions, Meetings, Projects, Links, and Newsletters. The main content area features a central text block: "IASPEI promotes the study of the structure, properties and processes of the Earth. It is one of the eight Associations that comprise the International Union of Geodesy and Geophysics (IUGG)." Below this text are several circular images showing various scientific activities. To the right, a "LATEST NEWS" section lists recent events, including the "IASPEI General Assembly Cape Town, South Africa 16 - 19 January 2008" and the "2008 IASPEI General Assembly, South Africa Website".

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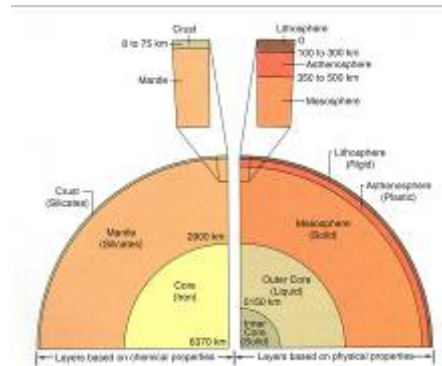
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- **Currently seismology and physics of the Earth's interior are facing to a historic time...**

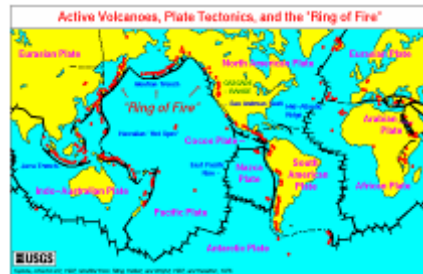
Physics and mathematics applied to Earth science



Seismology
Gravity
Geomagnetism

1910s~1930s

Global survey and interdisciplinary study



Ocean survey
Paleo-geomagnetism
Global seismology
Seismo-tectonics
Geomagnetic survey
MT sounding

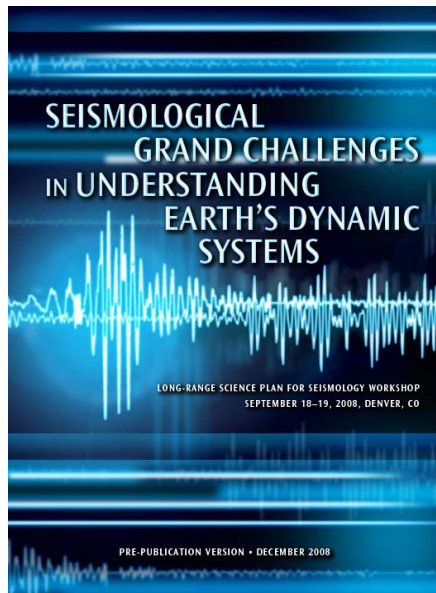
1950s~1970s

Earth system and its dynamics



Active source
Broadband seismology
Seismic tomography
GPS
InSAR
Remote sensing
NCF

1990s~2010s



- **Grand Challenge 1. How Do Faults Slip?**
- **Grand Challenge 2. How Does the Near-Surface Environment Affect Natural Hazards and Resources?**
- **Grand Challenge 3. What is the Relationship Between Stress and Strain in the Lithosphere?**
- **Grand Challenge 4. How Do Processes in the Ocean and Atmosphere Interact With the Solid Earth?**
- **Grand Challenge 5. Where Are Water and Hydrocarbons Hidden Beneath the Surface?**
- **Grand Challenge 6. How Do Magmas Ascend and Erupt?**
- **Grand Challenge 7. What Is the Lithosphere-Asthenosphere Boundary?**
- **Grand Challenge 8. How Do Plate Boundary Systems Evolve?**
- **Grand Challenge 9. How Do Temperature and Composition Variations Control Mantle and Core Convection?**
- **Grand Challenge 10. How Are Earth's Internal Boundaries Affected by Dynamics?**



- **IASPEI 2009: *Rhythm of the Earth***
- **Keynote lectures:**
 - **T. Jordan, Earthquake Forecasting and Prediction: Progress in Model Development and Evaluation**
 - **R. Madariaga, Earthquake Dynamics: From Source to Radiation**
 - **G. Nolet, Seismic Tomography and the Dilemma of the Earth's Heat Budget**



Assembly Statistics

<http://www.iaspei.org>

- **Number of sessions:** **32**
- **Number of oral talks:** **335**
- **Number of posters:** **106**

- **Number of countries:** **60**
- **Number of participants:** **347**
- **Summer school students:** **27**



Assembly Statistics

<http://www.iaspei.org>

Participation (≥ 10) by Country

South Africa	51
USA	34
Japan	28
China	20
UK	20
Russian Fed.	18
Germany	17
Italy	17
Austria	10
Algeria	10



Sessions

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- **S1 - Symposium on seismological observation and interpretation**
- **S2 - Large historical earthquakes in Africa, historical seismology, paleoseismicity**
- **S3 - Seismicity, seismic hazard and regional co-operation in North Africa**
- **S4 - Induced seismicity**
- **S5 - Intraplate seismicity**
- **S6 - Recent large earthquakes**
- **S7 - Volcano seismology**
- **S8 - Arrays, networks, instrumentation and stations in Africa**
- **S9 - Extending land networks into the sea and oceans**
- **S10 - Scientific and technical advances in seismology and their relevance to the CTBT**



Sessions

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- **L1 - Structure and dynamics of the lithosphere: observations, modelling and laboratory constraints**
- **L2 - East Africa Rift System**
- **L3 - Illuminating the crust and upper mantle structure with large-scale seismic deployments**
- **T1 - Tsunamis in Africa - Indian, Atlantic, Mediterranean Oceans**
- **T2 - Leveraging ODP boreholes and submarine cables**
- **E1 - Symposium on earthquake sources: modelling and monitoring for prediction**
- **E2 - Geophysical anomalies and earthquake prediction**
- **E3 - Prospective test of earthquake and faulting probability models**
- **G1 - Earth structure and geodynamics**



Sessions

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- **H1 - From heat flow to geothermal energy**
- **H2 - Workshop: Geothermal studies: instruments, measurements, and interpretation**
- **R1 - Earthquake hazard**
- **R2 - Earthquake risk**
- **R3 - workshop: Effects of surface geology**
- **R4 - Seismic source modelling and ground motion prediction**
- **R5 - Earthquake risk reduction and preparedness: socio-economic aspects, particularly in developing countries**
- **A1 - Electromagnetic prospecting and crustal structures**
- **A2 - Geochemical and geophysical signatures of diamond fields**



Sessions

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- **O1 - Capacity building and attracting undergraduate students to geophysics/seismology**
- **O2 - Discussion panels**
- **Panel discussion 1 – Seismic hazard: living with uncertainty**
- **Panel discussion 2 – Earthquake prediction: what the future holds**



FUTURE IASPEI ACTIVITIES

<http://www.iaspei.org>

- **2010 ASC in Hanoi (Vietnam)**
November 8-11
- **2010 ESC in Montpellier (France)**
September 5-10
- **2011 IUGG/IASPEI in Melbourne (Australia) June 27 - July 8**

**2013 IASPEI ASSEMBLY
INVITATIONS OPEN**



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IASPEI 2009 RESOLUTIONS



<http://www.iaspei.org>

Resolution 1: Global Earthquake Model

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RECOGNIZING the continuing growth of earthquake vulnerability and risk, associated in particular with the development of megacities and urban areas in developing countries, and

the important value of the information and knowledge assembled by the seismological community for the assessment of seismic hazard, the need to apply the seismological knowledge in programs aiming at a comprehensive and effective assessment, and mitigation of the seismic risk,

SUPPORTS the establishment of the Global Earthquake Model (GEM) – the program initiated by the OECD to develop a new open standard for the assessment of seismic hazard and risk at regional and global scales,

COMMITTS to cooperate actively with GEM, and

ENCOURAGES all IASPEI members to actively participate in the GEM program and related activities.



Resolution 2: Reference Events for Improved Location

IASPEI

RECOGNIZING that the International Seismological Centre (ISC) has recently established a website database of reference earthquakes and explosions for which hypocenter information is known with high confidence and which is associated with seismic signals recorded at regional and / or teleseismic distances, and

ACKNOWLEDGING that the ISC website also includes a capability to submit reference event information,

ENCOURAGES the scientific community to submit to ISC reference event information using guidelines that have been developed by IASPEI for identifying candidate events.



Resolution 3: International Registry of Seismic Stations

IASPEI

RECOGNIZING that the International Registry of Seismic Stations no longer meets the needs of the seismological community,

RECOMMENDS adoption of newly developed seismic network and station coding standards developed by IASPEI to promote compatibility between waveform and parameter data exchange, attribution of parameter data, and flexibility for seismic network operators to better support earthquake monitoring and hazard assessments.



<http://www.iaspei.org>

Resolution 4: Earthquake Forecasting and Predictability Studies

IASPEI

RECOGNIZING the opportunities provided by recent developments in earthquake science and technology

RECOMMENDS that research on forecasting and predictability of earthquakes, and the validation and comparative testing of prediction methods be supported.



Resolution 5: Real-time Data Access

IASPEI

RECOGNIZING the barriers to progress caused by restrictive seismic data release policies in force in parts of the world, and

RECOGNIZING the scientific and societal benefits of rapid data access for the purpose of monitoring, notification and response to damaging earthquake and tsunami events,

RECOMMENDS the adoption of an open real-time data release policy by all national and international seismic networks.

