



**International Union of Geodesy and Geophysics (IUGG)
IAPSO/IASPEI/IAVCEI**

**Joint Tsunami Commission Business Meeting
July 14, 2009
Novosibirsk, Russia**

The IUGG tsunami commission business meeting was held 18:30 to 20:00 on Tuesday, July 14, 2009, in the conference room of Dom Uchenykh (House of Scientists), Siberian Division of the Russian Academy of Sciences, in the center of Akademgorodok (Morskoy Pr., 23), Novosibirsk; following the first day of the 24th International Tsunami Symposium, July 14-17, 2009. Commission members that attended the meeting were: Abe, Bernard, Burnett (new member), Dunbar, Greenslade, Gusiakov, Kanoglu, Levin, Marchuck, Nishimura, Pelinovsky, Power, Rabinovich, Ranguelov (new member), Satake, Synolakis, Tinti, Titov, Tsuji, Yalciner, Yamamoto (new member). Participants of the Tsunami Symposium also attended as observers.

The meeting was announced on the Tsunami Bulletin Board on June 30, 2009, with a preliminary agenda.

1. Report of Commission Activities

Satake reported on the following activities of the Commission in the last two years.

The 6th International Tsunami Mitigation Workshop in Guayaquil, Ecuador, on September 14, 2007, was jointly organized by INOCAR, UNESCO/IOC, and IUGG Tsunami Commission. There were 23 presentations from 10 countries and an international organization.

The Tsunami Commission organized the Session “Tsunami in Africa” at the IASPEI General Assembly, January 10-16, 2009, in Cape Town, South Africa. The conveners were Satake, Rabinovich, Tinti, Roberts and Hartnady. There were 25 papers (17 oral presentations and 8 posters).

The Tsunami Commission has published 68 papers in three volumes in the last several years:

- “Tsunami Science Four Years after the 2004 Indian Ocean Tsunami” was published in two topical volumes, Part I: Modeling and Hazard Assessment (\$69.95) and Part II: Observation and Data Analysis (\$74.95), in *Pure and Applied Geophysics*, (Part I in vol.165, 2008 and Part II in vol.166, 2009). The editors were Cummins, Kong, and Satake. The volumes include 28 papers (14 in

each part), presented at the Tsunami Session of the 2007 IUGG General Assembly (Perugia, Italy). They were printed as books by Springer-Birkhäuser (Part I ISBN: 978-3-0346-0056-9 and Part II ISBN: 978-3-0346-0063-7). The editors and reviewers (two for each paper) were acknowledged.

- “Tsunami and its Hazards in the Indian and Pacific Oceans” (\$69.95), was published as a topical book in *Pure and Applied Geophysics*, 2007. The editors were Satake, Okal, and Borrero. The volume contains 20 papers, presented at the 2005 International Tsunami Symposium in Crete, Greece, and was printed as a book by Springer-Birkhäuser (ISBN: 978-3-7643-8363-3).
- “Tsunamis Case Studies and Recent Developments” (\$195.95), was published as a topical volume in *Advances in Natural and Technological Hazards Research* (vol. 23), 2005. The editor was Satake. The volume includes 20 papers and was printed as a book by Springer (ISBN: 978-1-4020-3326-1).

The official Commission Website is now available online and maintained by the NOAA National Geophysical Data Center at the following URL:

<http://www.ngdc.noaa.gov/hazard/jtc/tsunamicommission.html>

A letter was presented from Patricio Bernal (Assistant-Director General of UNESCO, and Executive Secretary of Intergovernmental Oceanographic Commission) informing Satake (Chair) that Masahiro Yamamoto (IOC Senior Tsunami Advisor, Paris) would be representing the IOC at the Symposium. The letter was also an official request from IOC to have a representative in the IUGG Tsunami Commission.

2. Reports of Working Groups

The activities of three Commission Working Groups (field survey data, tide gauge data and satellite data of the 2004 Indian Ocean tsunami) formed at the 2005 business meeting and an additional Working Group (terminology) formed at the 2007 business meeting were reported.

- WG for 2004 Survey (changed from Measurement) Data (Gusiakov and Fujima). Gusiakov reported that they face a huge task, for example, the ITDB includes over 1000 observations and 500 are in Banda Aceh. The data are scattered throughout publications. Collecting the 2004 data is an example of the problems of collecting all event data. The goal is to include all of these data in a database. It was agreed that the WG will continue and a report representing the majority of the data will be published in two years. This WG will be the contact point for the revision of the IOC Post-Tsunami Survey Field Guide.
- WG for 2004 Sea Level Data (changed from instrumental) (Rabinovich). Rabinovich reported on the challenges of the enormous amount of data. He stressed the importance of adding the data to the historical catalogs (ITDB and

NGDC) and the need for additional funding for data processing. It was agreed that the WG will continue with two additional members: Stuart Weinstein (PTWC) and Kelly Stroker (NOAA NGDC).

- WG for 2004 Altimetry Data. Titov reported that altimetry data were collected and placed on the web and the WG ended.
http://nctr.pmel.noaa.gov/indo_1204.html
- WG for Tsunami Terminology (Power, Kong, Stroker, Imamura, Dengler, Rabinovich). Power reported that discussions were held via email. Their work focused on improving the IOC Tsunami Glossary by reviewing it and compiling a list of changes that were given to Laura Kong (ITIC). The Glossary was revised in 2008. Outstanding items include the need for more tide gauge terminology and more consistency; for example, each entry needs a dictionary definition and an explanation. It was agreed that the WG will continue with the addition of Diana Greenslade to improve consistency between the IOC and IO glossaries.

3. Report of the IOC/ICGs Activities

The UNESCO/IOC Intergovernmental Coordination Groups (ICG) were established in the Pacific (PTWS) in 1965; in the Indian Ocean (IOTWS), Caribbean (CARIBE-EWS), and Mediterranean (NEAMTWS) following the 2004 Indian Ocean tsunami in 2005.

In the 2007 business meeting, Tsunami Commission assigned liaison for each ICG. The ICG activities were reported by the liaisons or alternatives.

- ICG/PTWS. Weinstein reported that the ICG/PTWS met in Apia, Samoa, February 2009. Changes to the structure will be implemented in 2009-2013, related to the three pillars of hazard and risk assessment, detection and warning, and preparedness and readiness. The ICG/PTWS WGs include Risk Assessment, Detection and Warning, and Awareness. Four regional WGs were added for Central America on the Pacific, SE Pacific, SW Pacific, and S China Sea. The following nine recommendations were approved: (1) Enhancing Tsunami Warning Products, (2) PTWS Exercises, (3) Official Contacts and Sharing of Information, (4) Request for IOC Review of GLOSS Terms of Reference, (5) PTWS Medium Term Strategy 2009-2013, Working Group Structure and Implementation Plan 2009-2011, (6) Steering Committee of the ICG/PTWS, (7) Seismic Data Exchange in the South West Pacific, (8) Pacific Emergency Communications and (9) Appreciation to the Government of Samoa. The importance of a SW Pacific region WG was discussed due to destructive tsunamis that result from smaller earthquakes than usual in that region. All countries in the PTWS tested their end-to-end warning system during PacWave Exercise 2008. Forty-four countries received messages, and submitted post

exercise evaluation forms. The data were collected by ITIC. PTWS exercises will be repeated every 2 years; the next will be held in 2010. The next ICG/PTWS meeting is being planned in Beijing, China in 2011.

- ICG/IOTWS. Greenslade reported that the last meeting was held in Hyderabad, India (2009) and the next meeting will be held in Indonesia in early 2010. The structure of the ICG is a Chair, Vice-Chairs, a steering group, and six working groups. The ICG/IOTWS WGs include Seismic, Sea Level, Risk Assessment, Modeling, Interoperability, and Mitigation. Progress as of mid 2009 was 60 new operational seismic stations, ~60 new coastal sea-level stations reporting to GTS, and ~25 new deep ocean tsunameters. IOTWS is a coordinated network of national systems and capacities and each Member State has the responsibility to issue warnings within their respective territories. Indian Ocean nations can offer to be a Regional Tsunami Watch Provider (RTWP) that provides “tsunami watch products” to other nations. Australia, India, and Indonesia are currently operating at “Service level 1” which includes exchange of seismic information and magnitude estimates on the GTS and with member states. [link to pdf on website]
- ICG/CARIBE-EWS. Yamamoto reported that the ICG/CARIBE-EWS met in Martinique, June 2009. Significant progress has been made towards the establishment of a Regional Caribbean Tsunami Warning Center. The U.S. has adopted a phased planning approach towards developing the Center at the University of Puerto Rico, Mayaguez. Significant progress has been made towards the establishment of the Caribbean Tsunami Information Center at Barbados. The NOAA West Coast and Alaska Tsunami Warning Center is providing interim warning service for the USA territories in the Caribbean. The NOAA Pacific Tsunami Warning Center (PTWC) is providing interim warning service for the rest of the Caribbean. The ICG/CARIBE-EWS WGs include Detection System, Hazard Assessment, Communication, and Preparedness. Yamamoto stressed the need for the ICGs to coordinate, for example sea level data. [link to pdf on website]
- ICG/NEAMTWS. Yalciner reported that the ICG/NEAMTWS met in Athens November 2008, and will meet in Istanbul, November 2009. The ICG is chaired by Tinti with Baptista and Papadopolous as Vice-Chairs. The ICG/NEAMTWS WGs include Hazard Assessment, Seismic, Sea Level, and Public Awareness. The status of the Tsunami Risk And Strategies For the European Region test sites was also reported on. The main problem is a timely commitment of potential tsunami watch providers. [link to pdf on website]
- Global. Bernard emphasized the principle that each ICG is self-governing and will make their own decisions. The Working Group of the IOC Assembly TOWS will review and coordinate tsunami matters in cooperation with all ICG. Guidelines taken from ICGs, including best practices were collected and published. Bernard recommended and it was agreed that the Commission would continue to participate

and try to identify how the Commission can help, such as identifying global guidelines. For example, the ICG/IOTWS sea level and seismic requirements could serve as global guidelines.

4. Nomination and Election of New Members

Sin-Iti Iwasaki (1954-2008), a former Commission member was remembered. Two of his pioneering papers in tsunami research were discussed: “Tsunami Generation from Submarine Landslides” (1987 IUGG) and “Cabled Bottom Pressure Gauges” (1995 IUGG).

Due to Iwasaki’s death and the non-attendance of Ortiz and Preuss, they are no longer members of the Commission.

Bernard (USA) nominated William Burnett (NOAA/NDBC) as a new member from USA, Yalciner (Turkey) nominated Boyko Ranguelov (Bulgarian Academy of Science), and Satake (Chair) nominated Yamamoto as the IOC representative. Rabinovich stated that a member is needed from South America.

The above nominations were all approved and the following is a list of new members.

William Burnett (USA)
Boyko Ranguelov (Bulgaria)
Masahiro Yamamoto (IOC representative, Paris)

5. Publication of 2009 Proceedings volume

Whether we will publish the selected papers presented at the 24th International Tsunami Symposium as a proceeding volume in PAGEOPH was discussed and agreed upon. Satake, Rabinovich, Kanoglu and Tinti were selected as editors of the proceedings. Approximate schedule is as follows. The title and authors must be submitted by August 31, 2009; paper submission deadline is November 30, 2009; the final manuscripts will be submitted to the publishers by the end of 2010; and the volume will be published before the 2011 IUGG General Assembly.

6. Tsunami Commission Status and By-Laws

Satake reviewed Status, Scope, Activities and rules regarding the membership and officers of the Commission. It was proposed and agreed that these will be posted on the Commission Website.

Status: The Tsunami Commission is jointly sponsored by IASPEI, IAPSO and IAVCEI. It was established at the 12th General Assembly of IUGG in Helsinki, Finland in 1960 to promote the exchange of scientific and technical information about tsunamis among nations concerned with the tsunami hazard. Since then, the Commission has held 23 Tsunami Symposia, both as part of IUGG General Assemblies and independently in

alternate years.

Scope:

- The Tsunami Commission is an international group of scientists concerned with various aspects of tsunamis, including an improved understanding of the dynamics of generation, propagation and coastal run-up and the consequences to society of the tsunami hazard.
- Tsunamis are generated by various submarine processes such as earthquakes, volcanic eruptions and submarine landslides, so that research is necessarily interdisciplinary, requiring studies that include the fields of seismology, volcanology, marine geology and geophysics, and hydrodynamics.
- Tsunami research can take the form of theoretical studies, numerical and physical modeling, and field observations acquired in the deep ocean, in offshore waters and along coastlines. Research on past tsunamis includes the identification of tsunami evidence in geological records or historical documents, and efforts to reduce the hazard include tsunami risk evaluation, countermeasures, public education, and other mitigation programs.

Activities:

- Hold International Tsunami Symposium every two years. When IUGG GA is held, ITS will be a part of IUGG sessions. At the years between IUGG meetings, ITS may be held independently, or jointly with one of IASPEI, IAVCEI or IAPSO meetings. Advertise, organize and program the ITS or tsunami session at the above meeting.
- The selected papers presented at the ITS (or IUGG Tsunami Session) have been published as proceeding volumes. Call for papers, edit (review process) and publish the papers.
- In case of tsunami events, organize and dispatch International Tsunami Survey Team and exchange information.
- Form working groups as needed to promote research activity or support outreach of research results.
- Daily communication is made through Tsunami Bulletin Board, hosted by ITIC.

Membership: Nomination of new members must come from other member of the same country. If there is no member from the same country, members of another country can nominate a new member for another country. The nominee is expected to be present at the meeting to be approved. A member who misses three consecutive business meetings will lose the member status.

Officers:

- Officers will be elected every 4 years (at the IUGG GAs). Officers cannot stay in the same position for more than two terms (eight years).
IASPEI : no more than two periods (8 years)

IAVCEI : normally serve for periods not exceeding four years

IAPSO: no explicit rule

- Nomination of Officers: Nomination committee will submit a slate of candidates prior to the business meeting where the election is made. The next election will take place at the 2011 IUGG meeting.
- Nomination Committee for Officers after 2011: Bernard (TC chair 1987-1995), Gusiakov (TC chair 1995-2003), Satake (TC chair 2003-2011)

7. Announcement of Future Meetings

IUGG General Assembly will be held June 28-July 7, 2011 in Melbourne, Australia.

<http://www.iugg2011.com/>

Cummins, Titov, Satake, and Papadopolous will chair the Tsunami Session.

An Indian Ocean Tsunami Modeling Symposium is planned to be held in Perth, Western Australia from October 12-15 2010. This will be organized through WG4 of the ICG/IOTWS

8. Acknowledgment to the Local Organizing Committee

Participants to the International Tsunami Symposium 2009 expressed appreciation for the efforts made by Slava Gusiakov and his staff for their preparation of the well-organized meeting.

END