



IPM INTERNATIONAL WORKSHOP

EARTHQUAKE HAZARDS AND TECTONICS IN SOUTHWEST JAPAN

15–18 July 2017
Misasa, Tottori, Japan

Organized by Prof. Eizo Nakamura, Director, Institute for Planetary Materials (IPM), Okayama University, Misasa

Workshop moderators:

Dr. Walter D. Mooney, USGS and Assist. Prof. Hiroshi Kitagawa, Misasa

The earthquake of 21/10/2016 caused considerable damage to the facilities at the Institute for Planetary Materials in Misasa. The fault rupture was close by 4 km and the ground motions at the Institute were very strong, causing delicate instruments to shift from their base positions. This workshop will present a comprehensive overview of 21/10/2016 earthquake and the overall earthquake hazards and tectonics in southwest Japan.

WORKSHOP AGENDA

July 15 (Sat)

Pre-Workshop

13:00–14:30 Open lecture: The science of damaging earthquakes

14:40–15:30 Panel discussion: Earthquake preparedness and response

16:00–17:00 Registration

17:00–19:00 Icebreaker

July 16 (Sun)

Session 1: Earthquake hazards in southwest Japan

Chair: John E. Vidale

09:00–09:25 Opening remarks

09:25–10:10 Walter D. Mooney (USGS)

Neo-Tectonics and Active Faults in Japan

10:10–10:40 Kazuki Koketsu (ERI, University of Tokyo), H. Kobayashi, K. Takano & H. Miyake
Rupture Process of the 2016 Tottori-Ken Chubu Earthquake and Its Effects on Strong Ground Motions

10:40–10:55 Coffee/Tea

10:55–11:25 Takuya Nishimura (DPRI, Kyoto University), Y. Takada & M. Hashimoto
San-In Shear Zone in Southwest Japan, Revealed by GNSS Observations

11:25–11:55 James J. Mori (DPRI, Kyoto University)
Spatial and Temporal Characteristics for Aftershocks of the 2000 and 2016 Tottori Earthquakes

11:55–12:25 Hisayoshi Yokose (Kumamoto University)
A New Geological Approach to Predict A Disastrous Earthquake: A Clue From the Time-Space Distribution of Hypocenters During the 2016 Kumamoto Earthquakes (Foreshocks, Mainshock And Aftershocks)

12:25–13:30 Lunch, Poster session

Session2: Global seismology and hazard assessment

Chair: James J. Mori

13:30–14:15 Emile A. Okal (Northwest University)

Tsunamis from 2004 to 2016: What We Have Learned and Have We Become Wiser?

14:15–14:45 Victor C. Tsai (Caltech), D.C. Bowden & H. Kanamori
Explaining Amplification of Surface Waves in Sedimentary Basins

14:45–15:15 E. A. Wirth, John E. Vidale (University of Washington) & N. Marafi
Anticipating the Shaking From an M9 Earthquake in Cascadia

15:15–15:30 Coffee/Tea

15:30–16:00 Kazushige Obara (University of Tokyo)

Progress in Science of Slow Earthquakes from Southwest Japan to the World

16:00–16:30 Martha K. Savage (Victoria University of Wellington) & Y. Aoki
Stress and Anisotropy in Kyushu, Southwest Japan

16:30–17:00 Heidi Houston (University of Washington)
Tidal Stress, Tremor, and Slow Slip Earthquakes: Implications for Deep Fault Properties

17:00–17:30 John E. Ebel (Boston College) & D. W. Chambers
Estimating the Locations of Past and Future Large Earthquake Ruptures Using Recent M4 and Greater Events

17:30–17:45 Question time and general discussion on day's topic

18:00–20:00 Banquet

July 17 (Mon)

Session 3: Seismic and geochemical structure of the Earth's interior

Chair: Ryoji Tanaka

09:00–09:45 Rainer Kind (GFZ) & X. Shen

The Fate of The Mantle Lithosphere During Continental Collision

09:45–10:15 Stewart Fishwick (University of Leicester)

Linking Lithospheric Structure and Seismicity

10:15–10:45 Iyasu G. Belay (PML, IPM), R. Tanaka, H. Kitagawa, K. Kobayashi & E. Nakamura

Origin of West African Passive-Margin Intraplate Basalt

10:45–11:00 Coffee/Tea

11:00–11:15 Dejene, H. Feyissa (PML, IPM), H. Kitagawa & E. Nakamura

Petrologic and Geochemical Constraints on the Evolution of the Ethiopian Rift

11:15–11:45 Tsutomu Ota (PML, IPM), L. V. Ranaweera, T. Moriguti, R. Tanaka & E. Nakamura.

Ancient Seawater-Mantle Interaction Detected in The Horoman Peridotites;

Implications for Mantle Evolution and Dynamics

11:45–13:30 Lunch, Poster session

Session 4: Geodynamics of active plate margins in East Asia

Chair: Walter D. Mooney

13:30–14:15 Dapeng Zhao (Tohoku University)

Seismic Tomography and Seismotectonics of West Japan to East Asia

14:15–14:30 Yanqing Li (PML, IPM), C.Q. Ma & T. P. Robinson

Recycling of Oceanic Crust from a Stagnant Slab in the Mantle Transition Zone:

Evidence From Cenozoic Continental Basalts In Zhejiang Province, SE China

14:30–15:00 Hiroshi Kitagawa (PML, IPM), T. T. Nguyen, I. Pineda-Velasco & E. Nakamura

Slab morphology and Cenozoic volcanism in East Asia

15:00–15:15 Coffee/Tea

15:15–15:30 Tai Truong Nguyen (PML, IPM), H. Kitagawa, I. Pineda-Velasco & E. Nakamura.

Petrological Constraints on Thermochemical Interaction Between

Asthenospheric Mantle and Subducting Lithosphere

15:30–15:45 Ivan Pineda-Velasco (PML, IPM), H. Kitagawa, T. T. Nguyen, K. Kobayashi & E.

Nakamura

Geochemical Evidences for Melting of Subducting Oceanic Lithosphere At the

Slab Tear Zones

15:45–16:00 Que Dinh Hoang (PML, IPM), Y. Yachi, C. Sakaguchi, H. Kitagawa, R. Tanaka & E.

Nakamura

Origin of Radon in Misasa Hot Springs, Tottori, SW Japan

16:00–16:15 Closing remarks (Walter D. Mooney)

16:30–18:00 Lab tour at IPM