

# The keys to mitigate risks from extreme earthquake hazards: “Remember Kobe.”

## Program

### HOKUDAN International Symposium on Active Faulting

In Commemoration of the 20th Anniversary of the 1995 Great Hanshin-Awaji Earthquake



*The Nojima fault on January 21, 1995*

January 12th--17th, 2015  
Awaji Yumebutai International Conference Center  
Hokudan Earthquake Memorial Park  
in Awaji City, Hyogo, Japan

### Operation Committee of the Hokudan International Symposium on Active Faulting

Sponsors: Awaji City, Awaji City Board of Education, Southern California Earthquake Center, Japanese Society for Active Fault Studies, National Institute of Advanced Industrial Science and Technology, INQUA Focus Group on Paleoseismology and Active Tectonics

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*Electronic version of abstract and program volumes are available at:*

*<http://home.hiroshima-u.ac.jp/kojiok/abstracts2015.pdf> (49.6 MB)*

*<http://home.hiroshima-u.ac.jp/kojiok/program2015.pdf> (20.6 MB)*

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# Organization of the HOKUDAN International Symposium on Active Faulting

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Operation Committee of the Hokudan International Symposium on Active faulting

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### **Symposium Venue**

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### Symposium Venue

Awaji Yumebutai International Conference Center  
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<http://www.yumebutai.org/english/index.html>

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### 会場

〒656-2306 淡路市夢舞台1番地  
淡路夢舞台国際会議場  
電話:0799-74-1020, FAX:0799-74-1021  
<http://www.yumebutai.org>

# Program of Oral Presentations

at Event Hall (B1F), Awaji Yumebutai International Conference Center

## Tuesday, 13th January

### *Keynote Lectures*

10:00 **Jordan, T.H.**

The Prediction Problems of Earthquake System Science

10:40 **Yeats, R.S.**

Earthquake Time Bombs

11:20 break

### *Plate boundary fault and earthquake cycle*

11:40 **Rockwell, T.K.**, Okumura, K., Klinger, Y., and Wechsler, N.

Long-Term Earthquake Production on Three Plate Boundary Faults: A View into Recurrence Patterns and Fault Interaction

12:05 **Kondo, H.**

Reconstruction of past multi-segment earthquakes on the North Anatolian fault system

12:30 lunch break and poster presentations

13:45 **Klinger, Y.**

The Dead Sea Fault, a sleeping giant in Middle East

14:10 **Malik, J.N.**, Santiswarup S., Okumura, K., Kato, T., and Nakata, T.

Active fault and paleoseismic studies in NW and Central Himalaya, India

14:35 **Mori, J.**, and IODP Expedition 353 Scientists

The Japan Trench Fast Drilling Project: Understanding the Large Slip and Tsunami of the 2011 Tohoku-oki, Japan Earthquake

15:00 **Ikeda, Y.**

Strain buildup in the subduction-related orogens over geologic time scale with

implications for the 2011 gigantic earthquake in Northeast Japan

15:25 break

15:45 **Sagiya, T.**

Crustal deformation and interplate coupling associated with the 2011 Tohoku-oki earthquake based on a viscoelastic model of earthquake deformation cycle

16:10 **Walters, R.J.**, Wright, T.J., and Parsons, B.

How fast is strain accumulating across faults? Towards a global strain-rate map from InSAR

16:35 **Fujiwara, O.**

Reconsideration of the recurrence mode of Tokai earthquakes from the historical tsunami deposits

## Wednesday, 14th January

### *Earthquake geology for hazard assessment*

09:00 **Yoshioka, T.**

Progress of Active Fault Studies in Japan after the 1995 Hyogoken-nanbu (Kobe) Earthquake

09:25 **Une, H.**

Active fault mapping as the fundamental information of the nation

09:50 **Iwata, T.**

Comprehensive Research on the Uemachi Fault System, Osaka, Japan: Study on Long-Term Evaluation and Strong Ground Motion Prediction

10:15 break

10:35 **Dawson, T.E.**

Geologic Data in the Uniform California Earthquake Rupture Forecast, Version 3 (UCERF3)

11:00 **Weldon, R.J.II**, Biasi, G.P., Streig, A.R., Dawson, T.E., and Scharer, K.M.

Review of San Andreas Fault System Paleoseismology Used in UCERF3 and a Suggestion for Future Improvement

11:25 **Akçiz, S.O.**

Reassessing Prehistorical Records of Earthquakes Along the San Andreas Fault in the Carrizo Plain: Integrating Geomorphological, Paleoseismological and Geochronological Analyses

11:50 **Scharer, K.**, Weldon, R., Steig, A., Bemis, S., Dolan, J., and Rhodes, E.

Past behavior of the 1857 stretch of the San Andreas Fault, Southern California

12:15 lunch break and poster presentations

13:45 **Tsutsumi, H.**

Along strike variation in seismotectonic environment of the Philippine fault ranging from large surface-rupturing earthquakes to aseismic creep

14:10 **Lin, A.**, and Yan, B.

Initiate timing and slip amount of active strike-slip faults in the Tibetan Plateau: an example from the Ganzi–Yushu–Xianshuihe Fault Zone

14:35 **Liu-Zeng, J.**, Shao, Y., Klinger, Y., Xie, K., Yuan, D., Lei, Z.

Can moderate magnitude paleo-earthquakes be recovered by geologists?

15:00 break

15:20 **Shyu, J.B.H.**, Yi-Rung, C., Ya-Lin, C., Yi-Rui, L., and Chin-Tung, C.T.

The Taiwan Earthquake Model (TEM) project and the updated digital 3-dimensional seismogenic structure database of Taiwan for future seismic hazard assessments

15:45 **Berryman, K.R.**

Progress in Recovery from the Canterbury earthquake sequence of 2010-2011: how it compares with Kobe

16:10 **Stirling, M.W.**, Gerstenberger, M., Nicol, A. and Van Dissen, R.

Development of Earthquake-Frequency Distributions for Active Faults in New Zealand

## Thursday, 15th January

### *Forecasting big ones and risk assessment (continued)*

09:00 **Morikawa, N.** and Fujiwara, H.

Seismic Hazard Assessment for Japan

09:25 **Daag, A.S.**

Active Faults Mapping and Mitigating Measures in the Philippines

09:50 **Toda, S.**, and Stein, R.S.

On- and off-fault aftershock duration and time-dependent seismic hazard

10:15 break

10:35 **Hirahara, K.**

Inland Earthquake Occurrences on Active Faults in Southwest Japan during the Cycles of Interplate Earthquakes along the Nankai Trough

11:00 **Hashimoto, M.**

Toward Mutual Understanding between Earthquake Science and Society

11:25 **Beroza, G.C.**, and Denolle, M.

Validation of Ground Motion Prediction Using the Ambient Seismic Field

11:50 **Denolle, M.**, and Beroza, G.C.

Application of Virtual Earthquakes for Ground Motion Prediction

12:15 lunch break and poster presentations

13:45 **Irikura, K.**, Kurahashi, S.

Estimation of Broadband Strong Motions of Engineering Use for Mega-Thrust Subduction Earthquakes

### *Recent technical development*

14:10 **Yarai, H.** Kobayashi, T., Morishita, Y., Yamada, S., Tobita, M.

Crustal deformation derived from the northern Nagano prefecture earthquake detected by InSAR analysis using ALOS-2 data

14:35 **Dawson, T.E**

Geological Aspects of the August 24, 2014 South Napa Earthquake: Mapping an Earthquake Surface Rupture in the Digital Age

15:00 **Arrowsmith, R.**, Oskin, M., Nissen, E., Crosby, C., and Kellogg, L.

Advances in 3D near field displacements in

earthquakes from differencing ubiquitous point clouds

15:25 break

15:45 **Mukoyama, S.**

Development of new method for measurement of surface displacement, using the Geomorphic Image Analysis of Differential LiDAR DEM

16:10 **Aoyagi, Y.**, Oku, T., and Onuma, T.

Surface rupture of the recent moderate earthquakes detected by DInSAR

16:35 **Nomura, S.**, and Ogata, Y.

Spatial Variation on Earthquake Interevent Time Distribution in Japan

## **Program of Poster Presentations**

DISPLAY HOURS 09:00 – 17:30, January 13th through 15th  
at Lobby (B1F), Awaji Yumebutai International Conference Center

**P01 Ren, Z.**, Zhang, Z., Chen, T., Yan, S., Yin, J., Zhang, P., Zheng, W., Zhang, H., and Li, C.

Clustering of offsets on the Haiyuan Fault and their relationship to paleoearthquakes

**P02 Yasuda, H.**, Bacolcl, T., Daag, A. S., and Nakata, T.

Geometry and Structure of the Philippine Fault in Ragay Gulf, Southern Luzon

**P03 Cahulogan, M.T.**, Papiona, K.L., Perez, J.S., Bariso, E.B., Rivera, D.J.V., Lim, R.B., Abigania, M.I.T., Melosantos, M.L.P., and Nataka, T.

Earthquake Generators: Found! (Active Mapping in Mindanao, Philippines)

**P04 Wang, M.**, Dong, J., John, S. H., Judith, H., Andreas, P. Yiquan, L., and Baojin, L.

Seismic hazards posed by the Range Front

blind thrust under the Sichuan Basin, China

**P05 Yan, B.**, Toda, S., and Lin, A.

Coulomb stress triggering hypothesis as implication on the assessments of recurrence interval and seismic hazard of the strike-slip Xianshuihe-Xiaojiang Fault System

**P06 Wang, Y.**, Tapponnier, P., Thura A. Chan, C.-H., Soe T., Saw N. K., Lin, T. A., and Sieh, K.

Active tectonics and the plausible earthquake rupture of the 1839 Ava earthquake along the central Sagaing fault, Myanmar

**P07 Goto, H.**

Detailed Topographic Anaglyph Images in and around Japan for Active Fault Research Produced from Digital Elevation Model

**P08 Komatsubara T.**

Quaternary tectonics of the Japanese island arc system from the viewpoints of slip rate of

- active faults and subsidence of the Quaternary basins
- P09 Okada, A.** and Research Group for Active Faults in Geospatial Information Authority of Japan (GSI)  
Detailed active fault maps of Awaji Island published in 2014 from GSI
- P10 Kumahara, Y.**  
Identification of the A.D. 818 earthquake fault in the Kanto Plain, central Japan, based on historical, archeological and geomorphological data
- P11 Katsube, A.,** Kondo, H., Taniguchi, K., and Kase Y.  
Surface rupture and deformation associated with the 2014 Nagano-ken Hokubu earthquake, Mw 6.2, on the ISTL active fault system, central Japan
- P12 Hirouchi, D.,** Sugito, N., Kaneda, H., Goto, H., Matsuta, N., and Geomorphological Research Group for the 2014 Kamishiro Fault Earthquake  
Surface rupture associated with the 2014 Kamishiro fault earthquake, central Japan: A preliminary report on field reconnaissance surveys
- P13 Sugito, N.,** Goto, H., Ishiguro, S., Suzuki, Y., Hirouchi, D., and Geomorphological Research Group for the 2014 Kamishiro Fault Earthquake  
Surface rupture associated with the 2014 Kamishiro fault earthquake, central Japan: Comparison between pre- and post-earthquake aerial photographs
- P14 Ishiguro, S.,** Watanabe, M., Kumahara, Y., Nakata, T., Goto, H., Kitano, S., Miyauchi, T., Kagohara, K., and Geomorphological Research Group for the 2014 Kamishiro Fault Earthquake  
Digital Surface Model for surface fault ruptures of the 2014 Kamishiro fault earthquake, central Japan, based on UAV and high-pole photography and SfM-MVS analysis
- P15 Matsuta, N.,** Goto, H., Sugito, N., and Geomorphological Research Group for the 2014 Kamishiro Fault Earthquake  
Surface rupture associated with the 2014 Kamishiro fault earthquake, central Japan: TLS (Terrestrial Laser Scanner), TS (Total Station) and AL (Auto Level) measurements
- P16 Sawa, H.,** Matsuta, N., Watanabe, M., Suzuki, Y., Nakata, T., and Geomorphological Research Group for the 2014 Kamishiro Fault Earthquake  
Surface rupture associated with the 2014 Kamishiro fault earthquake, central Japan: Implications to tectonic geomorphology and long-term earthquake prediction
- P17 Okada, S.,** Ishimura, D., Niwa, Y., and Toda, S.  
The surface rupture associated with the Mw 6.2 22 November 2014 earthquake along the Kamishiro fault, northern Itoigawa-Shizuoka Tectonic Line, central Japan
- P18 Hashimoto, M.**  
Coseismic Deformation of the 2014 Northern Nagano Earthquake Detected by ALOS-2/PALSAR-2
- P19 Yamaguchi, S.,** Ueda, S., Kubota, T., Oda, Y., Ito, S., Mishima, T., Murakami, H., Kato, S., Nishigami, K., and Mamada, Y.  
Electrical conductivity structure beneath the line, termination, and gap of surface fault traces in the Yamasaki Fault Zone, southwest Japan
- P20 Kimura, H.,** Tsutsumi, H., and Higashimaru, N.  
Shallow subsurface (-10 m) structure of coseismic surface ruptures revealed by ground penetrating radar profiling across the Itozawa fault zone, southern Fukushima, NE Japan



- P21 Ando, K.**  
Numerical calculation of development of a surface rupture associated with 1999 ChiChi earthquake in Taiwan: a case study of a trench log at the Earthquake Museum
- P22 Yamada, K., Takemura, K., and Haraguchi, T.**  
Characteristics of active structures in Beppu Bay, Kyushu, Japan -Comparison of sonic prospecting and seismic reflection survey-
- P23 Nakata, T., Goto, H., and Wesnousky, S.G.**  
Geomorphic Expression of Active Faulting along the Japan Trench
- P24 Kumahara, Y., Sugito, N., Goto, H., Suzuki, Y., and Nakata, T.**  
Active Faults along the Nankai Trough as Earthquake Source Faults
- P25 Goto, H., Sugito, N., and Nakata, T.**  
Geomorphic Evidence for Active Faulting on Deep Seafloor around Japan Islands
- P26 Ishimura, D., and Miyauchi, T.**  
Paleo-tsunami deposits since about 4 ka and their continuities in Koyadori on the Sanriku Coast, northeast Japan, based on trench excavation and drilling surveys
- P27 Ota, Y., Shyu, J. B. H., Wang C-C., Chung, L-H., Lee, H-C., and Shen, C-C.**  
Potential paleotsunami records as deduced from coral boulders on Lanyu Island, southeastern Taiwan
- P28 Niwa, Y., Toda, S., and Sugai, T.**  
Holocene subsidence in the south part of the Sanriku coast, northeast Japan, consistent with vertical displacement at 2011 Tohoku-oki earthquake inferred from sedimentary sequence: An example from the Rikuzen-takata plain
- P29 Mori, Y., and Nakano, S.**  
How residents behaved on the coastal area at two recent big earthquakes
- P30 Katoh, S., Matsubara, N., Funo, T., Kawahigashi, T., Takase, Y., Ueda, M., and Yamazaki, Y.**  
Proposal to establish the 921 Earthquake Geo-park in Central Taiwan focusing on education to mitigate natural disaster risk
- P31 Kikuchi, M.**  
Utilization of the historical earthquake to the geographical education – Case study the exhibition and workshop at Department of Geography, Kobe University
- P32 Iwasaki, Y., and Echigo, T.**  
Wrong Prediction of Displacement by Uemachi Fault, Osaka, by The Central Disaster Management Council, Cabinet of Japanese Government