

“Advances of International Collaboration on M9 Disaster Science: Progress Reports” World Bosai Forum Scientific Session (2019/11/12)

Theme: international research collaboration, M9 Cascadia Earthquake, University of Washington, CIGIDEN
Place: Sendai City

On November 12, 2019, during the 2nd World Bosai Forum, the scientific session “Advances of International Collaboration on M9 Disaster Science: Progress reports” was held, jointly organized by IRIDeS/Tohoku University, University of Washington-Seattle (United States) and the Research Center for Integrated Disaster Risk Management (CIGIDEN) (Chile).

This event was a continuation of international research collaboration between disaster scientists from the three countries, connected to the M9 Project at the University of Washington. The M9 Project, <https://hazards.uw.edu/geology/m9/>, is a multi-year interdisciplinary project with the goal of reducing the catastrophic potential effects of a Cascadia megathrust (magnitude 9) earthquake predicted for the west coast of the U.S., on social, built, and natural environments through the advancement of methodologies, early warnings, and community planning. This scientific session at the WBF was a follow-up event to the “Project Definition Workshop on Disaster Risk Science” held 13-14 March 2019 at the University of Washington in Seattle. This ongoing collaboration session has been supported by: IRIDeS, Tohoku University; the Core Research Cluster of Disaster Science, Tohoku University; and the University of Washington-Tohoku University: Academic Open Space (UW-TU:AOS)

This scientific session was organized for the purpose of sharing the progress of ongoing international collaboration between the members. Chaired by Assoc. Prof. Elizabeth Maly (Disaster Information Management and Public Collaboration Division), the session started with opening remarks from Prof. Randall LeVeque (UW), followed by updates on ongoing comparative research on adaptive planning introduced by Assoc. Prof. Naoko Kuriyama (Kobe University), adaptive plans developed in Washington State introduced by Prof. Daniel Abramson and PhD student Lan Nguyen (UW), and the example of recovery in Chile by Dr. Jorge Leon (Universidad Tecnica Federico Santa Maria, Valparaiso and CIGIDEN, Chile). On behalf of Prof. Patricio Catalan (Universidad Federico Santa Maria and CIGIDEN, Chile), Dr. Jorge Leon shared the advances of Probabilistic Tsunami Hazard Analysis in Chile, followed by presentations about: real-time tsunami inundation and damage forecasts by Prof. Shunichi Koshimura (Hazard and Risk Evaluation Research Division); evaluation of tsunami loads on vertical evacuation structures by Assoc. Prof. Michael Motley (UW); and simulation-based surrogate models for probabilistic tsunami risk assessment and two-scale tsunami simulation by Prof. Kenjiro Terada (Regional and Urban Reconstruction Research Division), Associate Prof. Shuji Moriguchi (Regional and Urban Reconstruction Research Division) and Yuya Yamaguchi. Prof. Terada facilitated a discussion session, followed by closing remarks from Prof. Koshimura. In addition to the presenters, other collaborators and participants from IRIDeS included Assoc. Prof. Anawat Suppasri (Hazard and Risk Evaluation Research Division) and Assoc. Prof. Erick Mas (Hazard and Risk Evaluation Research Division) and from UW-Seattle, Prof. Loyce Adams and Dr. Carrie Garrison-Laney.

The presentations included updates on ongoing research collaboration between the members of different institutions and published outcomes. Attended by 50 people, the session including lively discussion during the question and answer portion, and led to the development of additional future plans for research collaboration.

Text and Photos:

Elizabeth Maly (Disaster Information Management and Public Collaboration Division) and
Anawat Suppasri (Hazard and Risk Evaluation Research Division)

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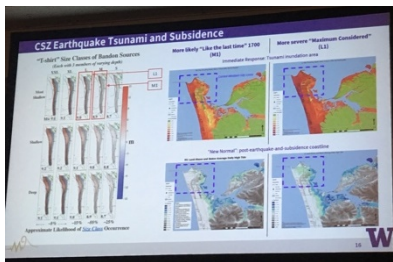
Participants from Tohoku University, Kobe University, University of Washington, CIGIDEN.



Prof. Randall LeVeque (UW)



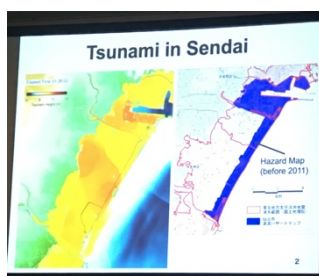
Assoc. Prof. Naoko Kuriyama



Lan Nyugen and Prof. Daniel Abramson v



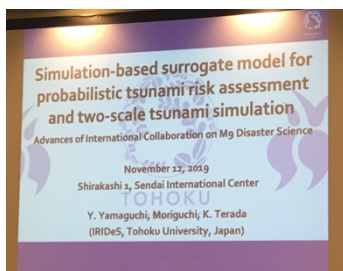
Dr. Jorge Leon



Prof. Shunichi Koshimura



Assoc. Prof. Mike Motley



Prof. Kenjiro Terada



Assoc. Profs. Elizabeth Maly and Erick Mas

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Scientific program

Advances of International Collaboration on M9 Disaster Science

~Progress reports ~

Organized by IRIDeS/TU, UW and CIGIDEN

8:30~10:00, November 12, 2019

Shirakashi 1, Sendai International Center

Chair: Elizabeth Maly (IRIDeS/TU, Japan)

*presenter

1. Opening remarks

Randall J LeVeque (Department of Applied Mathematics, UW, USA)

2. Towards a comparative framework of adaptive planning and anticipatory action regimes in Chile, Japan and the US: an exploration of multiple contexts informing risk-based planning and relocation in coastal areas

Naoko KURIYAMA* (Department of Architecture, Kobe University, Japan)

3. Robust Adaptive Plans, using both Gradual and Sudden Coastal Change Scenarios in Washington State: Integrating Sea Level Rise and Tsunami Inundation Models at the Community Level

Dan Abramson* and Lan Nguyen* (Urban Design and Planning, Architecture and Landscape Architecture, College of Built Environments, UW, USA) and Ann Bostrom (Evans School of Public Policy, USA)

4. Chile after the 2010 earthquake and tsunami: reconstruction efforts and paths to the future

Jorge Leon* (Department of Architecture, Universidad Tecnica Federico Santa Maria, Valparaiso and CIGIDEN, Chile)

5. Incorporating PTHA methods in a tsunami early warning system

Jorge Leon* in place of Patricio Catalan (Universidad Federico Santa Maria and CIGIDEN, Chile)

6. Advances of real-time tsunami inundation and damage forecast - present and future

Shunichi Koshimura* (IRIDeS/TU, Japan)

7. Experimental and numerical evaluation of tsunami loads on vertical evacuation structures

Michael Motley* (Department of Civil and Environmental Engineering, UW, USA)

8. Simulation-based surrogate model for probabilistic tsunami risk assessment and two-scale tsunami simulation

Kenjiro Terada*, Shuji Moriguchi and Yuya Yamaguchi (IRIDeS/TU, Japan)

9. Discussion (Qs and As)

Kenjiro Terada

10. Closing remarks

Shunichi Koshimura