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For Immediate Release

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SSA honors Victor Tsai with Charles F. Richter Early Career Award

SAN FRANCISCO, Nov. 17, 2014 – Still early in his career, Victor Tsai has already established himself as a leading seismologist, conducting pioneering research in the emerging fields of ambient noise and glacier and river seismology. Tsai has published 39 peer-reviewed papers that reflect his diverse research interests and novel approaches to tackling challenging questions in seismology, glaciology and mechanics.

For his work, the 32-year old Tsai will be awarded the Seismological Society of America's (SSA) Charles F. Richter Early Career Award at the organization's annual meeting held April 21–23 in Pasadena, California. The award recognizes outstanding contributions to the goals of the Society by a member early in his or her career.

An Assistant Professor at the California Institute of Technology (Caltech) since 2011, Tsai earned his doctorate in Earth and Planetary Sciences at Harvard University where he worked on a broad range of challenges, including detecting ice quakes (or glacial “earthquakes”) and understanding the physical mechanisms associated with these glacier and ice sheet events. In a comprehensive study of 184 ice quakes in Greenland, Tsai linked these events to the calving of major icebergs from the ice sheet terminus, upending conventional thought on the physical origin of these seismic events.

Later in his graduate student career, he focused on seismic noise correlation between neighboring seismic stations and its relation to seismic properties between them, a subject that he continued to pursue as a Mendenhall Postdoc at the U.S. Geological Survey in Golden, Colorado, and now at Caltech.

Tsai has developed new applications related to seismic noise theory. In the emerging field of river seismology, for example, Tsai devised and applied a novel theory to use seismic observations of noise generated by sediment flow to estimate bed load transport in rivers. Bed load transport is an important quantity to measure for a number of fields, including hydrology, glaciology, engineering and river ecology, and is difficult and time-intensive to measure accurately with direct sampling methods. His work represents the first attempt to predict the seismic spectra associated with the physical process of rocks impacting the riverbed as they move downstream.



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In addition to his work in glaciology and river seismology, Tsai has contributed to a number of earthquake studies, providing the theoretical framework to study the complexities of large earthquakes, including the great 2004 Sumatran and the 2011 Tohoku earthquakes.

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SSA is an international scientific society devoted to the advancement of seismology and its applications in understanding and mitigating earthquake hazards and in imaging the structure of the earth. Founded in 1906 in San Francisco, the Society now has members throughout the world representing a variety of technical interests: seismologists and other geophysicists, geologists, engineers, insurers, and policy-makers in preparedness and safety.