Geophysical Research Abstracts
Vol. 19, EGU2017-11589, 2017
EGU General Assembly 2017

A seismologically determined landquake catalog: Understanding frictional properties on the sliding surface

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A proposed mechanism leading to deep-seated landquake occurrence is the increase in water pore pressure along the sliding slope with generating partial liquefaction. Indeed, landquake events are often triggered by the most intense and prolonged rainfall. The liquefaction can contribute the change in the frictional properties on the sliding slope. Recently, the near real-time landquake monitoring system (NRLMS) has been continuously monitoring landquake activity in Taiwan, which provides a catalog of large landquake events. A catalog from NRLMS yields a summary of source information including event location, force mechanism and occurrence time. With available satellite-image dataset (e.g., slope angle and collapsed volume) and three-component force history obtained by seismic waveform modeling, this study demonstrated that the seismic technique can not only help us to understand the sliding processes but also provide crucial information (e.g., frictional coefficient) for studying landquake simulation.