

## **Static stress drop of induced earthquakes in seismic hazard assessment: Preliminary results from The Geysers geothermal site**

Monika Staszek (1), Beata Orlecka-Sikora (1), and Grzegorz Kwiatek (2)

(1) Institute of Geophysics, Polish Academy of Sciences, Krakow, Poland, (2) Section 3.2: Geomechanics and Rheology, GFZ Potsdam German Research Centre for Geosciences, Potsdam, Germany

Static stress drop of induced earthquakes is a parameter which reflects the influence of induced seismicity on the stress field in reservoir rock. On the other hand, events occurrence time and localization depends on the previous stress distribution in the rock mass. Therefore, we decided to use static stress drop to assign areas of relatively higher probability of future event occurrence with respect to entire area of seismic activity. For analyses 354-event group of earthquakes with spectral parameters determined using spectral ratio method from NW part of The Geysers geothermal site was used. We analyzed distributions of interpolated stress drops, determined on the basis of events from constant moving time window using biharmonic spline interpolation method, for chosen groups and sequences of events. Some of the distributions reveal that events tend to occur in the areas of specific ranges of interpolated stress drop values what indicates a potential for future use of static stress drop in seismic hazard assessment.

This work was partially supported within SHEER: "Shale Gas Exploration and Exploitation Induced Risks" project funded from Horizon 2020 – R&I Framework Programme, call H2020-LCE-2014-1.