Earthquake Source Processes and Physics of Earthquakes

Convenor:*Yuko Kase(Active Fault and Earthquake Research Center, AIST, GSJ), Chair:Naofumi Aso(Graduate School of Science, The University of Tokyo), Yasuo Yabe(Research Center for Prediction of Earthquakes and Volcanic Eruptions, Graduate School of Science, Tohoku University)

Mon. Apr 28, 2014 4:15 PM - 5:30 PM  416 (4F)

The goal of this session is to integrate theoretical, experimental, and observational perspectives to define what is known about earthquake source processes. We solicit submissions that address such issues as pre-, co-, and post-seismic processes, earthquake cycles, laboratory experiments on elementary processes, numerical models based on frictional laws, estimates of in situ stress field.

5:00 PM - 5:15 PM

Focal mechanisms of the triggered tremor beneath the Hinagu fault zone, southwestern part of Japan

3-min talk in an oral session

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Keywords: triggered tremor, focal mechanisms, Hinagu fault zone

Non-volcanic tremors induced by large amplitude surface wave have been detected all over the world. Most of them are located on and near the plate boundary (Miyazawa and Mori, 2005; Nadeau and Dolene, 2005) and few of them are near volcanoes (Obara, 2012). Chao and Obara (2012, SSJ) found the triggered tremor that located beneath the Hinagu active fault zone, western part of Kyushu Island, Japan. Miyazaki et al. (2013, SSJ) reported that the tremor occurred beneath the seismogenic zone. In this study, we attempted to estimate focal mechanisms of the tremors triggered by the surface wave of the 2012 Sumatra earthquake. We use the method developed by Hirasawa (1966) that uses the S wave polarization angles. We eliminated the data with low Signal-to-Noise ratio because the angles of waves of tremors were sensitive to background noise. As a result, we found that focal mechanisms of the triggered tremors were roughly consistent with regional stress field. They could provide constraint for investigating dynamic triggering process of the tremor. Acknowledgement We used the seismic data from Kyushu University, the Japan Meteorological Agency, the National Research Institute for Earth Science and Disaster Prevention and Kagoshima University.