Earthquake Source Processes and Physics of Earthquakes

Convener:*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

Wavelet domain inversion for examination of the frequency-dependent characteristics of the seismic wave radiation

3-min talk in an oral session
*Wataru SUZUKI¹, Shin AOI¹, Haruko SEKIGUCHI², Takashi KUNUGI¹ (1.NIED, 2.DPRI, Kyoto University/NIED)

Frequency-dependent characteristics of the seismic wave radiation from earthquake sources are important subject for advancing the source physics and the strong-motion prediction. The 2011 Tohoku-Oki earthquake has exhibited particularly distinctive characteristics. The large slip is estimated in the shallow part of the fault from the low-frequency waveforms or geodetic data, whereas the source models derived from the analysis of the higher-frequency seismic data, such as the empirical Green's function modeling or backprojection method, suggest that the high-frequency waves were intensely radiated from the deeper portion. Our previous study (Suzuki et al., 2011) examined the contribution of the significant slip events to the waveform synthesis from the low-frequency waveform inversion results. We found that the sources of the very-low-frequency waves (Geophys. Res. Lett., 38, L00G16.