[JJ] Evening Poster | S (Solid Earth Sciences) | S-SS Seismology

[S-SS13]Earthquake prediction and forecast

convener:Toshitaka Baba(Graduate School of Science and Technology, Tokushima University)
Thu. May 24, 2018 5:15 PM - 6:30 PM Poster Hall (International Exhibition Hall7, Makuhari Messe)
This session provides the opportunity for contributions that fall within the scientific spectrum of earthquake prediction and forecasting. We welcome theoretical, observational or numerical papers that are either on long- or short-term predictions, and either based on deterministic or probabilistic approaches.

[SSS13-P01]Study on Foreshock Activity of Three Typical Tsunami Earthquakes

*Yifeng Liu[1], Yoshihiro Ito[1], Kazuaki Ohta[1], Satoshi Katakami[1] (1.Disaster Prevention Research Institute, Kyoto University)
Keywords:tsunami earthquake, slow slip events, spatiotemporal distribution, Nicaragua earthquake

A tsunami earthquake triggers a tsunami of a magnitude that is much larger than the magnitude of the earthquake as measured by amplitude of shorter-period seismic waves. In this study, we focus on three tsunami earthquakes and their foreshocks, which are Nicaragua(1992/09/02, Mw7.7), Java region(2006/07/17, Mw7.7) and Mentawai(2010/10/25, Mw7.8) to verify a possible SSE(slow slip event), prior to the main shock occurred.
We have used data from ISC and USGS to make an investigation on a period over three months before each main shock. After analyzing the catalogs, we have found that in the case of Nicaragua earthquake in 1992, from August 10 to August 13, there were three activities, in which two M4.7 foreshocks occurred on August 10, and 13, and a M5.5 foreshock was on August 14 near the epicenter of the main shock. Each of these epicenters were located within the range of 10 km west of the main shock destruction starting point. They also showed a clear migration of their epicenters from the northeast to the southwest.
We conclude that the distinct activity of foreshocks only occurred in Nicaragua prior to the mainshock. Specifically, a half of foreshocks in Nicaragua occurred within a month prior to the mainshock. On the other hand, the distinctive foreshocks were not observed in Java region and Mentawai, which shows the great possibility that foreshocks only occurred around Nicaragua in the three cases.