ID: Type: **Poster**

Automated Techniques for Waveform Correlation Applied to Regional Monitoring of Eastern Asia

Waveform correlation techniques have proven effective detecting repeated events from large aftershock sequences; however, application for monitoring a large region over a long time period has yet to be adequately explored. We applied waveform correlation to continuous waveform data for the year 2012 at twelve stations spread through Eastern Asia, using automatically generated templates from historical archives going back to the time of station installation. Our study region includes the countries of China, North Korea, South Korea, Mongolia, Nepal, Bhutan, Bangladesh, and parts of neighboring countries. We used nine China Digital Network (CD/IC) three-component stations and three arrays that had continuous coverage from 2006-2012; this yielded 12 stations which spanned 40 degrees in latitude and 70 degrees in longitude with a mean nearest-neighbor distance between stations of 728 km. To declare a detected event, we required coincident correlations from two or more arrivals. Detection results are compared to the International Seismological Centre (ISC) catalog to analyze the effectiveness and challenges associated with applying waveform correlation on a broad regional and multi-year scale. We include analysis of the impact of network geometry, historical template library span and size, and template phase to provide direction for future regional studies using waveform correlation.

Primary author: SLINKARD, Megan (Sandia National Laboratories, Albuquerque, NM, USA)

Presenter: SLINKARD, Megan (Sandia National Laboratories, Albuquerque, NM, USA)

Track Classification: 3. Advances in sensors, networks and processing