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T3.3-P34. Testing the global grid of master events for waveform cross correlation with the Reviewed Event Bulletin

The Comprehensive Nuclear-Test-Ban Treaty's verification regime requires uniform distribution of monitoring capabilities over the globe. The use of waveform cross correlation as a monitoring technique demands waveform templates from master events outside regions of natural seismicity and test sites. We populated aseismic areas with masters having synthetic templates for predefined sets (from 3 to 10) of primary array stations of the International Monitoring System. Previously, we tested the global set of master events and synthetic templates using IMS seismic data for February 13, 2013 and demonstrated excellent detection and location capability of the matched filter technique. In this study, we test the global grid of synthetic master events using seismic events from the Reviewed Event Bulletin. For detection, we use standard STA/LTA (SNR) procedure applied to the time series of cross correlation coefficient (CC). Phase association is based on SNR, CC, and arrival times. Azimuth and slowness estimates based f-k analysis cross correlation traces are used to reject false arrivals.

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