ID: Type: **Poster**

Expert Technical Analysis Improvements at the International Data Center, CTBTO

Expert Technical Analysis (ETA) is a role that the IDC plays to provide higher-level research products on data from the IMS and other relevant data to improve the estimated values for standard event parameters and assist State Parties in identifying the source of specific event. As depth is one of these values, we focus on its improving using modern advances in seismic modeling. First part of our ETA work used cross-correlation between observed and theoretical seismograms with adjustable t* teleseismic attenuation model to provide a depth estimate. The extended method is based on estimating a full moment tensor solution for body and surface waves recordings because it provides a further constraint on depth. A wide set of nuclear explosions including PNE was studied with presumably known depths, and recent DPRK nuclear tests. In both methods, a set of analysis tools was developed. The tools allow an expert to easily operate the various open source modules available for synthetics generation and fitting against observed waveforms, drive the workflow, and show results and uncertainties in a coherent fashion. These tools will allow the IDC experts generating products for the IDC to provide to member states for events demanding ETA and special studies.

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