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applications at the IDC for SHI Expert Technical Analysis

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The Preparatory Commission for the CTBTO (Commission) routinely process time-series data from a global network of seismic, hydro-acoustic, and infrasound (SHI) stations. The data are processed to detect, build, locate, and screen events that may have characterization parameters similar to those from nuclear explosions. The observation and processing systems are required to be sensitive to small (e.g. low-magnitude) events, especially in unusual locations (e.g. aseismic regions). In order to match this requirement and to assist the State Parties to identify the source of specific events the IDC develops services combined in one SHI Expert Technical Analysis (ETA) Suite. The Parametrical Moment Tensor Estimator, ParMT (depth and magnitude determination through the moment tensor estimation) and the IDC historical master event-based Spot Check Tool, SCT, are the ongoing IDC developments. A promising avenue to improve the ParMT results, as well as for enhancement of IDC (mostly regional) locations, is to embrace the Ambient Noise Tomography technique in IDC practice. Receiver velocity models underneath IMS stations can be improved using the vast amount of gathered seismic background data. The same approach can be utilized for OSI data processing using the ANT-based velocity models produced with the noise data from SAMS array.

Promotional text

New applications for in-depth analysis of the SHI data are under development at the IDC.

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