

## On Similarities and Differences of Signals Measured by IMS Stations from Five DPRK Underground Tests

Primary and auxiliary seismic stations of the International Monitoring System detected seismic signals from five declared underground tests conducted by the DPRK. These data allow thorough quantitative comparison aimed at understanding of the similarities and differences in seismic wave generation by underground explosions. In routine automatic and interactive processing, the International Data Center found all five events, estimated absolute locations and magnitudes together with their uncertainties. The International seismological centre makes these results available for the broader monitoring community. In this study, we extend the estimates of relative characteristics of detected signals to station level using standard methods adapted at the International Data Centre (IDC). In addition, we apply several techniques based on waveforms cross correlation (WCC), which are under development at the IDC. The WCC method allows significant improvement in the accuracy of relative location, magnitude, and seismic moment tensor estimation.

**Primary author:** KITOV, Ivan (CTBTO)

**Presenter:** KITOV, Ivan (CTBTO)

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