



## **Cross comparison of four DPRK events**

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Seismic signals were detected by the IMS seismic network from four announced underground test conducted by the DPRK in 2006, 2009, 2013, and 2016. These data allow thorough comparison of relative locations, including depth estimates, and magnitudes using several techniques based on waveforms cross correlation. Seismic signals from these events also provide waveform templates for detection of possible aftershocks with magnitudes by two-to-three units lower than the events themselves. We have processed one month of continuous data after each of four events and detected no aftershocks. Independent Component Analysis based Blind Source Separation was conducted for all events at different stations to compare the robustness of the source function recovery.