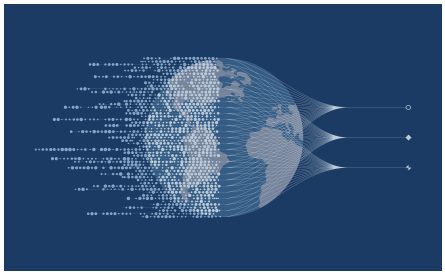

ID: **P2.1-811** Type: **E-poster**

# of Small Seismic Events Around Underground Nuclear Test Site in the Democratic People's Republic of Korea

Recently, the detection of two small seismic events that have occurred close to sites where North Korea carried out underground nuclear weapons tests was reported in the literature. A seismic event, considered to be a small earthquake of magnitude 1.5, occurred on 12 May 2010 close to the site of the 25 May 2009 underground nuclear test (UNT) in North Korea. Another seismic event of magnitude 2.1 occurred on 11 September 2016, correlated to the 9 September 2016 UNT, and was reported as an aftershock of the UNT. We examine additional possible small seismic events around the North Korean test site using seismic data from stations in southern Korea and northeastern China, including IMS seismic arrays, GSN stations and regional network stations. We assess the best method to classify small explosions from earthquakes in the region based on time, location, source depth and spectral amplitude ratios of regional P and S waves from those seismic events. We will discuss issues raised by the capability of various seismic monitoring networks to detect such tiny explosions and earthquakes, and the best discriminant to classify various source types in the region.

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Session Classification: P2.1 Characterization of Treaty-Relevant Events

Track Classification: Theme 2. Monitoring events and Nuclear Test Sites: T2.1 Characterization of Treaty-Relevant Events