



ID:

Type: **Poster**

location of North Korean nuclear tests using IMS data: how do different techniques compare?

Here we apply three relative location techniques (double-difference, hierarchal clustering, and station corrections), to the six reported North Korean nuclear tests using IMS data. The aim of this study is to better understand how each technique performs with respect to the others, and to compare with independently published results, as well as the official North Korean nuclear test site map. A nuclear test site can be thought of as single, independent seismic event cluster with strong, highly-correlated P-waves, and relatively weak S-waves; whereas natural earthquake clusters often vary in mechanism and can be widely spatially distributed. Nuclear tests are often recorded at local, regional, and teleseismic stations, whereas most earthquake relative location studies are limited to local phases. Because of these differences and others, previous studies comparing relative earthquake location methods may not relate to relative nuclear test locations, further motivating this study. While the goal of this project is to understand how different relative location methods perform at North Korea's Punggye-ri test site, a future goal is to adapt the most suitable methods into a set of tools for the Australian NDC.

Primary author: DIMECH, Jesse-Lee (Geoscience Australia)

Presenter: DIMECH, Jesse-Lee (Geoscience Australia)

Track Classification: Theme 2. Events and Nuclear Test Sites