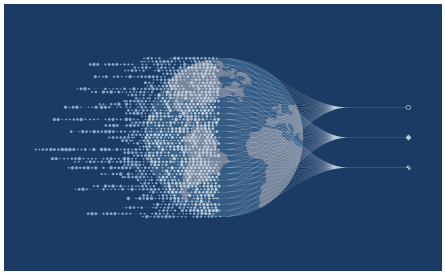

ID: **P3.5-392** Type: **E-poster**

the seismicity around the DPRK test site

The Punggye-ri nuclear test site in North Korea, historically not seismically active, has likely experienced significant stress changes from the six nuclear tests, particularly the largest in 2017. These stress changes have facilitated the triggering of seismicity in the surrounding area long after the tests. Using multi-channel correlation detectors (Gibbons, 2012) at the IMS seismic arrays KSRS (South Korea) and USRK (Russia), we detect seismicity down to magnitudes < 2 close to the test site. Continuous data from KSRS (since 2006) and USRK (since 2008) allow us to construct a detailed timeline of seismic events, for which we analyse their signal characteristics and compare with the six nuclear tests. A subset of these events, precisely located in published studies, serves as a reference for our correlation analysis and clustering, which identifies five main clusters. Linking these clusters to the published locations allows us to infer the regional distribution of seismicity and its connection to stress changes induced by nuclear testing. This work enhances understanding of how large underground nuclear explosions can alter stress regimes and induce seismic activity, even years after testing, providing valuable insights into the long-term effects on the crust around nuclear test sites.

E-mail

ben@norsar.no

In-person or online preference

Primary author: Dr DANDO, Ben (NORSAR)

Co-authors: Dr KOHLER, Andreas (NORSAR); Dr DICHIARANTE, Anna Maria (NORSAR); Dr GOERTZ-ALLMANN, Bettina (NORSAR); OYE, Volker (NORSAR)

Presenter: Dr DANDO, Ben (NORSAR)

Session Classification: P3.5 Analysis of Seismic, Hydroacoustic and Infrasound Monitoring Data

Track Classification: Theme 3. Monitoring and On-Site Inspection Technologies and Techniques: T3.5 Analysis of Seismic, Hydroacoustic and Infrasound Monitoring Data