ID: **O2.3-340** Type: **Oral**

The Korean Infrasound Bulletin: Detection, Association and Event Location

Tuesday, June 20, 2023 1:30 PM (15 minutes)

Long term infrasound event bulletins are useful for identifying repeating sources from a common location, quantifying source characteristics and studying the time-varying nature of the atmosphere. We produce a regional infrasound bulletin in the Korean peninsula region for the time period from 1999 to 2021. We use data from six infrasound arrays in South Korea, cooperatively operated by Southern Methodist University and Korea Institute of Geoscience and Mineral Resources, and from two International Monitoring System infrasound stations in Russia and Japan. The detection procedure uses an adaptive F-detector that inputs arrival time and back azimuth into the Bayesian Infrasonic Source Location procedure. The bulletin consists of 34 218 events spanning over 23 years and produces locations indicative of repeated events from many different source types, including shallow-depth earthquakes, explosions from limestone mines and quarry operations. Most events occur during working hours and days, suggesting a human cause. We quantified the false association using the perturbed detection time simulation and reviewed the events with many associated arrays. The ray tracing using the Ground-to-Space atmospheric model generally predicts the infrasound arrivals when strong stratospheric wind exists, while local weather data can contribute to explaining the propagation path effects to arrays in some cases.

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Promotional text

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Oral preference format

pre-recorded video

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