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## Infrasound Detection and Location of Sources in and around the Korean Peninsula

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Infrasound event catalogs that span long durations are useful in identifying repeating sources from a common location, which can provide ground truth for studying the time varying nature of the atmosphere as well as quantifying event characteristics. We focus on producing a regional infrasound bulletin for the Korean peninsula region for 1999 to 2021. We use data from six South Korean infrasound arrays that are cooperatively operated by SMU and KIGAM. The detection procedure uses an adaptive F-detector (Arrowsmith et al., 2008) that inputs arrival time and backazimuth into the Bayesian Infrasonic Source Location (Modrak et al., 2010) procedure. The bulletin consists of 16,417 events over 22 years with repeated events from many locations and with source types that include shallow-depth earthquakes, limestone mines and quarries. We show that the majority of these events occur during working hours and days, suggesting a human cause. Installations of additional infrasound arrays in South Korea and the IMS infrasound arrays in Russia and Japan increase the number of infrasound events while improving location accuracy. Events that have associated signals at a large number of arrays are reviewed and evaluated to assess their quality. Infrasound amplitudes from the events are normalized for propagation effects to estimate source size. Ray tracing using the G2S atmospheric model generally correctly predicts the arrivals when strong stratospheric winds exist. Local weather data which captures small-scale variations in the wind velocity can, in some cases, explain observations that are not predicted by the G2S model.