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Explosion Identification Using Seismic and Infrasound Station Data

There are hundreds of mines and quarries within the Mongolia territories using blasts with varying yields and firing schemes. This mining-related explosion occupy a big part of the seismic catalogue issued by the IAG. To discriminate the earthquake and explosion is more difficult because the size and distances are different for all events. This study is designed to quantify Baganuur mining explosion using seismic and infrasound station data. The study uses ground truth coal mining explosion data in year 2016 which is obtained Baganuur mine company. In total 167 explosion data were used for this analysis. Using infrasound station data, we estimated minimum explosive level that detected infrasound stations. We also include seasonal variation in detectable level of explosive. For seismic acoustic data, we estimated relationship between mining explosions total explosive yields with peak amplitude, magnitude and Arias intensity. Waveform cross correlation technique used in order to find detection threshold level using master event of this Baganuur mining area.

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