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Monitoring Seismic Velocity Changes Using Ambient Seismic Noise

Seismic ambient seismic noise cross-correlations are now being used to detect temporal (seasonal and prior to strong earthquake etcâ) variations of seismic velocity. The purpose of our work is to monitor velocity changes based on cross-correlation technique. Second purpose is to improve our seismic data quality. It is based on three years data archive of seismic real-time telemetered network of Ulaanbaatar. This network has been built in 2013 and data set consists of 16 broadband seismometers placed on Ulaanbaatar area at interdistances ranging from 30 to 50 km. Several studies using Impulse response or Greenâs function from cross correlation of seismic ambient noise to monitor temporal velocity changes that the small perturbations within a volcanic edifice prior to eruptions. This method has been providing good results in Earthâs interior. In this work, We prepared the data archive removed instrument response, whitening spectra and bandpass filtering from 0.1 to 8 Hz . The reason why we have chosen filtering band is due to which frequency band is the highest noise level. We have been using complete software package for computing and monitoring relative velocity variations using ambient seismic noise (MSNoise). Finally we have been improving quality control of seismic data.

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