



Background noise model development for seismic stations of KMA

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The background noise recorded at seismometer is exist at any seismic signal due to the natural phenomena of the medium which the signal passed through. Reducing the seismic noise is very important to improve the data quality in seismic studies. But, the most important aspect of reducing seismic noise is to find the appropriate place before installing the seismometer.

For this reason, NIMR(National Institution of Meteorological Researches) starts to develop a model of standard background noise for the broadband seismic stations of the KMA(Korea Meteorological Administration) using a continuous data set obtained from 13 broadband stations during the period of 2007 and 2008. We also developed the model using short period seismic data from 10 stations at the year of 2009. The method of McMara and Buland(2004) is applied to analyse background noise of Korean Peninsula.

The fact that borehole seismometer records show low noise level at frequency range greater than 1 Hz compared with that of records at the surface indicate that the cultural noise of inland Korean Peninsula should be considered to process the seismic data set. Reducing Double Frequency peak also should be regarded because the Korean Peninsula surrounded by the seas from eastern, western and southern part.

The development of KMA background model shows that the Peterson model(1993) is not applicable to fit the background noise signal generated from Korean Peninsula.