

Investigation of crustal structures using autocorrelation of ambient seismic noises

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Ground conditions in fracture zones around faults may be weak, affecting adversely the stability of ground including slopes and tunnels of high-speed railroad and expressway. Media with unidentified faults may experience sliding or collapse after construction. Seismic exploration methods may be useful to identify hidden faults beneath surface, in the construction sites. However, artificial seismic sources used in seismic exploration (dynamite blasting, heavy object falling, seismic vibration) may produce considerable noises. It is often difficult to conduct such active source studies in high population regions. Ambient noise autocorrelation method may be useful to image geological subsurface structures in the sense. The method has been verified by previous studies. In this study, we propose to use the ambient noise autocorrelation method for investigation of geological structures in the crust of the Korean Peninsula, which has not been made in the Korean Peninsula.