Turkey-Japan Joint Project on Modeling of Geological Structures for Strong Ground Motion Simulations due to Crustal Earthquakes in Eskisehir Basin, Turkey, by Using Seismic Interferometry Method

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Understanding the seismic hazard of specific area, depends on the regional 2D/3D underground structure on wave propagation. In the frame of the bilateral project between Turkey and Japan, we aim at observing ground motion parameters, crustal activities, underground structures, and improvement of seismic hazard maps. The seismic interferometry method (SIM) is one of the tools to investigate the surface-wave propagation. The method goals to obtain green's function (GF) by using ambient noise data. Cross-correlations (CC) between the two pairs of stations' continuous records, reveal GF and provide group and phase velocities of surface waves. We analyze one-year vertical component broadband data from 8 stations deployed and affiliated with ANANET (Eskisehir Anadolu University Local Seismic Network). Interstation distances between the designated stations are in the range of ~23-139 km. After getting the CC functions, group velocity dispersion curves will be obtained for selected correlation paths in particular to address the azimuthal dependence of the velocity field. Averaging the dispersion curves, in other saying analyzing the group velocities and waveforms typical of these observations, we attempt to estimate the S-wave velocity structure model inside the Eskisehir basin. This study is supported by the Joint Research Project under the Bilateral Program of the Japan Society for the Promotion of Science (JSPS) and The Scientific and Technological Research Council of Turkey (TUBITAK) under Grant TUBITAK 116Y524.

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