

Estimation of Strong Ground Motion at Adapazari city during the Kocaeli, Turkey earthquake of 1999

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We estimated strong ground motions at one of the damaged area, Adapazari, during the Kocaeli, Turkey earthquake of 1999, based on 1D propagation theory considering non-linearity of surface geology. We synthesized the bedrock motion at downtown Adapazari using the empirical Green's function method. The NS ground motion that was not recorded during the mainshock at strong motion observation site, SKR, was estimated to be 1.2 times of EW component in terms of PGA and 1.7 times in terms of PGV. Estimated strong ground motions at damaged area are dominant in long period motion and the PGV are over 100 cm/sec. The primary reason of the large ground velocity is due to thick soft sediments and the location of asperity, forward directivity, and radiation pattern are the secondary effects.