

Site Effect Study in the Ankara Region During the Moderate Bala Earthquake Series

Mustafa K Koçkar

Earthquake Engineering Implementation and Research Center, Gazi University, Ankara, Turkey (mkoçkar@gazi.edu.tr)

This research analyzes the strong ground motion data from the Bala earthquake series in 2007 and 2008 in the Ankara region considering the effect of soil conditions on ground shaking. Initially, shear wave velocity profiles of the strong ground motion stations were evaluated to define site classifications for each station in and around Ankara. Strong motion data collected during the moderate Bala earthquake series (M_w range 5.7 to 4.8) were used to develop event-specific attenuation relationships for peak ground acceleration and spectral acceleration at various periods and different site conditions. Site amplification factors were derived from the regression results from the event-specific attenuation relationships for the Bala earthquake series. Finally, the response spectra from the recording stations were used to develop site amplification factors for each site class to understand the variability of the site response in the Ankara region.