



Site corrections for strong ground motion stations by using peak ground accelerations in the Marmara region, NW Turkey.

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The 17 August 1999 ($M_w:7.4$) and the 12 November 1999 ($M_w:7.2$) earthquakes were very energetic and provided a wealth of strong ground motion data in the Marmara region in NW Turkey. The strong ground motion records used were provided by stations in operation and distributed by national and international data centers from different countries. These data were recorded by different types of accelerometers located on various ground conditions.

Difficulties of determining the site corrections of strong ground motion stations depends on various behaviours of soils when subjected to an earthquake. Generally, site effect is one of the important factors for predicting ground motion. The strong ground motion station sites have not been well classified in the Marmara region. However, those stations have clearly recorded the 17 August 1999 ($M_w:7.4$) and the 12 November 1999 ($M_w:7.2$) earthquakes and their major aftershocks in NW Turkey. In this study, site corrections of strong ground motion stations have been determined empirically by averaging the residuals between the observed and predicted values. The predicted values have been used for an attenuation relationship developed for the Marmara region. These results are reasonably well correlated with the known characteristics of surface geology of the study region. The results show that the soft soil and soil areas are the main site of high amplifications observed.