عنوان مقاله:

Source Spectra of ۲۰۱۲ Ahar-Varzaghan Double Earthquakes, Northwestern Iran

محل انتشار:

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خلاصه مقاله:

three-component strong motion records from ۲۰۱۲ Ahar-Varzaghan double earthquakes (Mw=۶.۵, ۶.۳) are used to ۱۱۴ study the apparent source spectra of these two events. For this purpose, all the known effects of local site and travel path were deconvolved from the observed spectra. As of path effects (attenuation model), two models are considered: ۱) a model developed by the authors in an earlier study with the geometrical spreading form of R-۰.۹ at close distances, ۲) a model developed in this study in which the geometrical spreading has the more conventional form of R-۱ at close distances. These two models have very similar associated Q factors, as the Q factor is more affected by the rate of geometrical spreading at longer distances. It is observed that the inferred source spectrum (particularly Brune stress drop) depends strongly on the considered attenuation model. For the studied events, the apparent observed source spectra for vertical and horizontal components show overall similarity, with horizontal component having bigger scatter and higher fluctuations. The apparent source spectrum of the first event almost perfectly matches the well-known Brune model; whereas the second event is a fair match to the Brune model and is better represented by a double corner frequency model. Out of four double-corner frequency models of source spectra where evaluated here, only the recently developed generalized double-corner-frequency model can successfully .reproduce the observed ground motions; the other three lack flexibility in matching the high-frequency spectral level

کلمات کلیدی:

Ahar-Varzaghan earthquakes, Source spectra, Brune model, Kappa, northwestern Iran