A comparison of site amplifications estimated by using a surface rock site and an underground one as a reference site

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Site amplifications were analyzed for Tangshan area using the strong motion data that were obtained by nine stations from thirteen events. First we used an underground rock site station (-822m) as reference site to separate the source, propagation path and local site effect simultaneously by means of a linear inversion method.Compared with the result that used a surface rock site as a reference site, we found that surface rock sites have their own site response. Finally, we applied a new method, Genetic Algorithms, which is a non-reference-site method, to estimate the absolute site effect. The results between the absolute site effect and relative site effect (reference site is the underground station, -822m) agreed very well for the most of the cases.