

High Frequency Ground Motion Simulation of an Un-happened ShanChiao Fault in Northern Taiwan from an ETF-Based Site Correction Method for Stochastic Simulation

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Strong motion generation area (SMGA) was mentioned as an important source parameter for high frequency strong motion simulation (Kurahashi and Irikura, 2011) that was identified as different asperity distribution from traditional source inversion results. Meanwhile, high frequency strong motion simulation is very important in application of engineering seismology. Site correction method from Empirical Transfer Function (ETF, Wen et al., 2013) for stochastic finite fault simulation was applied in Northwestern Taiwan for 1999 ChiChi Taiwan earthquake as high frequency simulation. Except the traditional inverted asperity model was used, random asperity distribution ones were test from Huang et al. (2014). In this study, different construction method of random asperity models followed Japan's Recipe (Irikura et al., 2004; NIED, 2009) are constructed for the same event first to check near fault response for randomly SMGAs. ShanChiao fault is the most important fault system in northern Taiwan owing to it could probably generate earthquake directly hit the Capital urban area. Finally, this study will try to identify possible ground shaking level for Shanchiao Fault system. The simulation results could help to preliminary plan of disaster prevention issue or building design problems in the future.

Keywords: Stochastic Simulation, Empirical Transfer Function, SMGA, ShanChiao Fault