

Simulations of Strong Ground Motions Near Large-Scale Crustal Earthquakes (Part 2: Case for the 1999 Chi-Chi, Taiwan, Earthquake)

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Following (Part 1), the 2001 Chi-Chi earthquake (Mw 7.6) were simulated using characteristic fault models. The longer and shorter period ground motions were computed by the wavenumber integration method (Hisada and Bielak, 2003) and the stochastic source model (Hisada, 2008), respectively. Consequently, it was found that the slip functions were much more complex than the simple pseudo-dynamic models (such as Nakamura and Miyatake). The fling step at a station near the surface fault was very sensible whether the station was near the surface asperity or not. Therefore, the surface fault and its location have to be carefully modeled. In addition, the simple asperity model for the near faulting surface overestimated the short-period strong ground motions at the stations close the asperity.