

Strong ground motion simulation of the 2000 Tottori-ken Seibu earthquake using the hybrid simulation technique

Takaaki Ikeda[1], Katsuhiko Kamae[2], Shigeru Miwa[1], Kojiro Irikura[3]

[1] Tech. Res. Inst., TOBISHIMA Corp., [2] Reaserch Reactor Institute, Kyoto Univ., [3] Disas. Prev. Res. Inst., Kyoto Univ.

<http://www.tobishima.co.jp>

We simulated broadband strong ground motions during the 2000 Tottori-Ken Seibu earthquake using the hybrid simulation technique. The long period motions are simulated using the 1-D wave-number integration method. The short period motions were calculated using the stochastic Green's function method by Kamae et al. (1991) in which small event motion calculated with the stochastic simulation method by Boore(1983) are summed. Broadband strong ground motion was made by added long period motion and short period motion in a time domain. Source model was used the best source model that was modeled by the forward modeling using the empirical Green's function method [IKEDA et al. (2001)]. Broadband strong ground motions were simulated for the K-Net and KiK-Net observation sites surrounding the source area. The synthesis waves were able to reproduce duration time and amplitude of an acceleration and velocity. As a result, the availability of hybrid simulation technique for broadband strong motion calculation was confirmed.

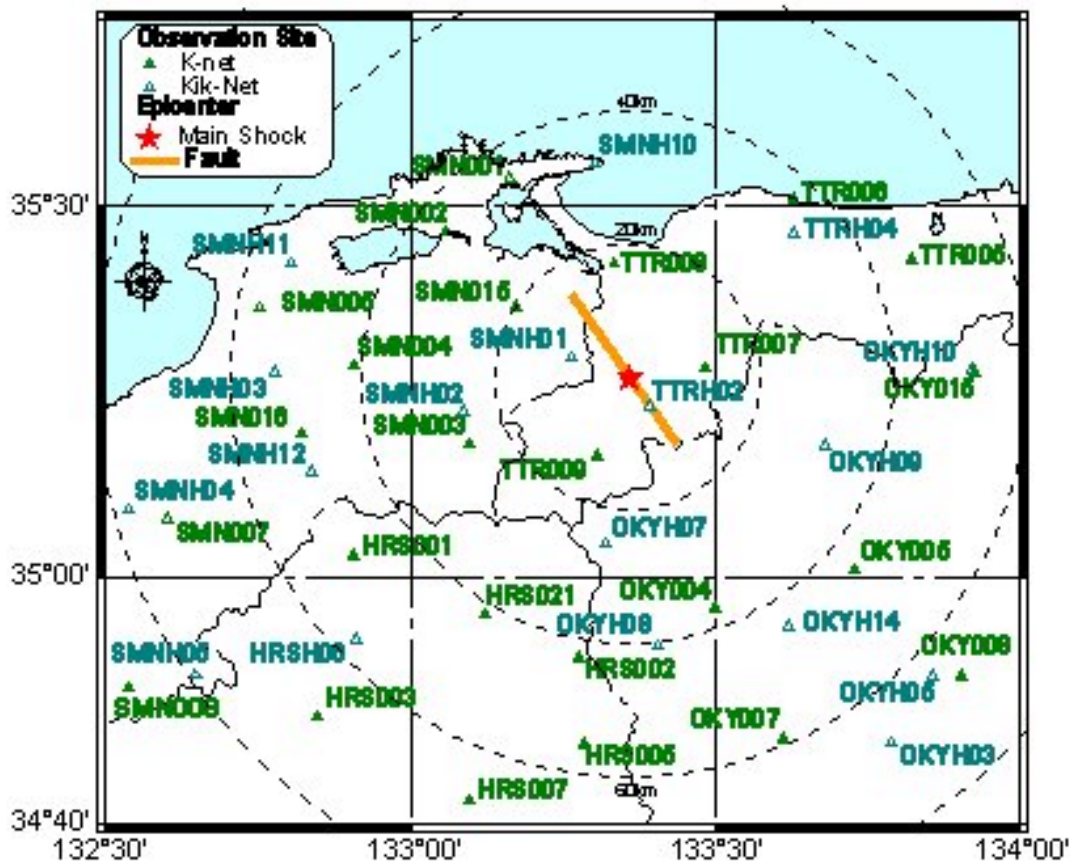


図 1 波形合成地点

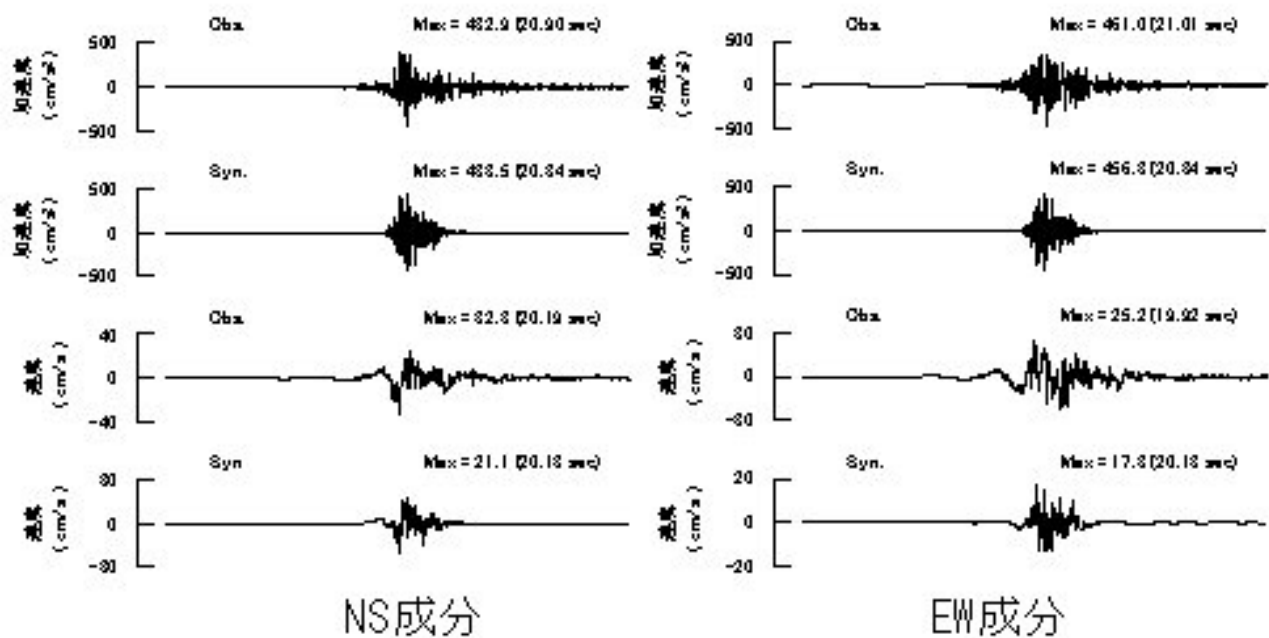


図 2 TTR009における観測波形と合成波形の比較