

Source modeling and strong ground motion simulation of the 2004 Mid Niigata prefecture earthquake, Part 1 Source modeling

Katsuhiro Kamae[1]; Takaaki Ikeda[2]; Shigeru Miwa[2]

[1] KURRI; [2] Tech. Res. Inst., TOBISHIMA Corp.

A preliminary source model composed of asperities for the 2004 Mid Niigata Prefecture earthquake (MJMA=6.8) was estimated by the empirical Green's function method. The source parameters for two asperities (Asp-1 and Asp-2) located on the fault plane were determined from the comparisons of the synthesized broad-band ground motions with the observed ones. Asp-1 is located near the hypocenter to generate near source strong ground motions at NIG019 and NIG020. Asp-2 is located in south direction of Asp-1 to generate high frequency ground motions with large acceleration amplitude at NIG021 and NIG022. Furthermore, we pointed out the need of nonlinear analysis of the sedimentary soils to reproduce the observed ground motions at NIG019. This performance is shown in Part-2.