# An approximate expression of slip rate time function for near-fault strong ground motion simulation, II

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Nakamura and Miyatake(2000) proposed an approximate expression of slip rate time function using dynamic rupture model. In the present paper, it is applied to strong ground motion simulation. The following three fault rupture processes are considered, and the waveforms generated from these cases are compared with those calculated by using dynamic rupture model.

(a) 5km x 2km single strike slip fault with 10MPa stress drop. The rupture is assumed to propagate circularly with speed of 80% shear wave velocity. (b) 8km x 6km single asperity is located in 10km x 20km strike slip fault. Stress drop is 10MPa in asperity part, and 0MPa in another part. (c) 10km x 10km fault. The rupture starts from the deepest corner of the fault, and propagate circularly. The uppermost depth is assumed to be 2km in all cases. The speed of rupture propagation is assumed to be 0.8 times shearwave velocity.

The waveforms are calculated by 3D finite difference method with staggered grids.

The earthquake source is modeled in double couple force in the kinematic model with the approximate slip rate time function. On the other hand, in dynamic model the earthquake rupture is modeled by stress release process controlled by fault constitutive law. We assumed slip weakening frictin law(Dc of 20cm). The waveforms generated from the approximate expression are very similar to those from dynamic source.