

## The dynamic rupture process of the 2001 Geiyo earthquake

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We have constructed a dynamic rupture model of the 2001 Geiyo earthquake ( $M_w = 6.7$ ) that is consistent with the kinematic slip model inferred by Yagi and Kikuchi (2001).

In dynamic simulation, the finite difference method was used to construct a dynamic rupture model from the kinematic model. The kinematic parameters necessary for the dynamic analysis are the slip amount and the rupture start time of each subfault.

Firstly, the static stress drop distribution is calculated by using Okada's Green function. Next, we applied dynamic model to the earthquake. We used a fourth order staggered grid, finite difference scheme to the three dimensional equation of motion. Our scheme includes a free surface boundary condition at the top and in addition to absorbing boundary conditions at the remaining grid boundaries and the slip weakening model on the fault plane. In the process, the dynamic final slip distribution and fracture energy distribution were obtained. The maximum stress corresponding to the maximum slip reaches 40MPa and is located near the hypocenter. The maximum fracture energy of about  $4 \times 10^6 \text{J/m}^2$  is also located near the hypocenter.