Simulation of Dynamic Rupture Propagation on a Bending Fault Using 3D Boundary Integral Equation Method

Hideo Aochi [1], Eiichi Fukuyama [2], Mitsuhiro Matsu'ura [3]

[1] Earth & Planet. Physics, Univ. of Tokyo, [2] NIED, [3] Dept. of Earth & Planetary Physics, Univ. of Tokyo

We simulated spontaneous rupture propagation on a bending fault, that is, a kinked, steep or smooth curved fault with various degree of its strike, using 3D Boundary Integral Equation Method (BIEM) proposed by Aochi et al.(1998, SSJ). In the case of smoothly curved fault, rupture propagates through the bending corner. On the other hand, it is strongly disturbed at the bending portion for a kinked or steeply curved fault. The difference is attributed by combination of radiation pattern of stress near the crack tip and fault strike. These results suggest that the fault shape should control the distribution of constitutive parameters such as shear strength and critical displacement which characterize the fault properties.

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