Rupture process parameters based on fault branching model and application to new active fault GIS database of Japan

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We propose hypothetical methods to predict the directivity of future rupture propagation and segmentation of fault systems based on geometric criteria such as branching features of active fault traces and dip-slip distribution along the fault traces. This model matches well with recent earthquakes of the 1930 Kita-Izu earthquake, 1979 Imperial Valley earthquake, 1990 Luzon earthquake, 1992 Landers earthquake, 1995 Hyogo-nanbu earthquake, 1995 northern Sakhalin earthquake and 1999 Hector-Mine earthquake. Following high demand on detailed information for active faults, we compiled completely new active faults map of Japan with a scale of 1:25,000 and digitized to GIS database. This digital fault map may provide with useful information to geoscientists and engineers for their purposes.