

## Possibility of characterizing earthquake sources by active fault data

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<http://unit.aist.go.jp/actfault/activef.html>

We examined the possibility of characterizing earthquake sources by geological data on active faults. This study includes 1) extracting characteristics of slip distribution of active faults and surface earthquake faults, 2) comparing the slip of surface ruptures with the slip inverted from strong ground motion data, and 3) assessing the effect of segment jog's geometry on rupture propagation. We examined surface earthquake faults associated with six large earthquakes, including the 1995 Kobe, 1999 Izmit and 1999 Chi-chi earthquakes and four active faults in Japan.

It has been made clear that the surface slips of examined faults show either unimodal or plateau or their composite distribution pattern. It is also ascertained that the slip distributions of the examined surface ruptures are consistent with the slips in the shallower part, which were inverted from strong ground motion data. Rupture processes of the 1992 Landers and the 1999 Izmit earthquakes show that the slowdown, intermission and termination of rupture propagation occurred at the segment jogs.

From these results, the segment of active fault can be regarded as a rupture unit or spatial unit of earthquake slips. Slip distribution of active faults and surface ruptures suggests that each individual segment basically has a single shallow asperity. We believe that clarifying segment structures of active faults will lead to constraining number and location of shallow asperities within scenario earthquake models. Segment jog's geometries are a useful indicator of rupture propagation process.