

Stress accumulation on the Atotugawa fault, central Japan

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Stress accumulation processes on the Atotsugawa strike-slip fault are discussed on the bases of 1) focal mechanisms of ultra-micro earthquakes along the fault, 2) spatial pattern of S-wave anisotropy, and 3) velocity structure around the fault. Paleoseismological observations show that a recurrence interval of large earthquake of the fault is about 2000 years and the latest activity was about 150 years ago. Our observational results are summarized as follows: 1) Directions of P-axes of the focal mechanism solutions indicates a large shear to normal stress. Stress fields are of strike-slip fault type around the bottom of the seismogenic layer and of reverse fault or other types in the shallower regions. 2) Directions of axes of the S-wave anisotropy indicate larger shear to normal stress ratios in regions near the fault than those away from the fault. 3) Prominent low-velocity regions are found below the seismogenic layer of the fault. All the results strongly indicate the stress accumulation process on the fault is governed by stable sliding below the seimogenic depths of the fault.