

Cyclic mechanism of the seismogenic fault in the Shimanto accretionary complex, Shikoku, SW Japan

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The seismic fault rock is found in the Shimanto accretionary complex, southwest Japan, onshore extension of the present Nankai subduction zone where great inter-plate earthquakes occur repeatedly. The rock records the cyclic mechanism of stick slip faulting. The fault breccia was cementated by vein minerals, precipitated from fluid flow, makes the fault strong enough to arise the rocks to be seismically faulting. Subsequent seismic brecciation yields the conduit for fluid flow. The seismic cycle in the accretionary prism is thus controlled by the rock-fluid interaction along the fault zone.