

## Seismogenic fault in subduction zone and analogue experiment

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The ancient seismogenic fault in the Shimanto accretionary complex, inshore extension of the Nankai subduction zone is characterized by alternately formation of pseudotachylyte and vein mineral precipitation with fluid flow, and such a fault rock occurred limited area along the strike. The occurrence indicates the cementation of the fault rock during inter-seismic slip. It can be consider that the fluid flow causes heterogenous cementation with vein mineralization along the seismogenic fault, and the area of locally locked area may increase with time. This time dependence ability of local locked area satisfies the condition for the asperity to happen the stick-slip.

The stick-slip due to the mineral precipitation is recognized by the analogue experiment as follow; the shear surface is full of hot saturated solution with alum ( $\text{AlK}(\text{SO}_4)_2 \cdot 2\text{H}_2\text{O}$ ), and chilled slider is used. The solbility of alum changes steeply against temperature, and the precipitation is happened at bottom of the slider. The stick-slip was appeared in this experiment under the conditon of sturated hot saturated solution with alum 70C in temperature, chilled slider 0C in temperature shear stress 160kPa, and slip velocity of 10mm/s.