

"Fluidization of fault gouge"-A method to identify the sufficient criteria of seismic slip-

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Fault gouge is fluidized only when a fault slips at seismically high velocity. Rate of fracturing of solid grains is expected to be very high when it is governed by friction, and very low in the case of collisional fracturing dominant in fluidization. On the other hands, relative velocity between grains is very slow in the friction regime, and very fast in the fluidization regime. Because the frequency that the fractured counter parts are identifiable under microscope depends on the fracturing rate and the relative velocity, then it will be nearly zero in the fluidization regime and amount to a finite value in the friction regime. This method is testified to be valid through the preliminary measurement for several samples. Then this method is useful to assess active faults to be surely seismic.