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# Influence of fluid pore pressure on chaotic sliding of tectonic faults

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The problem of permeable rock pore pressure variation influence on tectonic fault sliding and generation of seismic events was studied in the scope of rate-and-state friction model with two-parametric friction law. The coupled problem of pore-elasticity and fault sliding governed by two-parametric rate-and-state equation was studied numerically. The main modes of the fault sliding were found, and transitions from one mode to another due to the fluid pore pressure change were observed. The conditions for transition from stable to chaotic sliding (considered as an analog of seismic event generations) were found. It was shown, that chaotic sliding has features of Poincare stability and can be characterized by finite values of correlation integral and embedding dimension, which depend on critical shear stresses. Change of the effective critical stresses by the pore pressure variation will result in change of the tectonic fault sliding mode and consequently change of the seismic regime.