

Earthquake generation cycles at transcurrent plate boundaries

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Incorporating the slip- and time-dependent constitutive relation into a viscoelastic stress function, we constructed a physical model of earthquake cycles at transcurrent plate boundaries. Through numerical simulations with this model, we examined the stress accumulation and release process during the earthquake generation cycle and obtained the following results. The process strongly depends on the constitutive parameters, especially the restoration rate of fault strength. In the case of a complex fault system, consisting of several seismogenic fault segments, interaction between these segments becomes essential..