A Markov process of tectonic plates motions

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Abstract:
The model we propose can describe a movement of one plate on another being also relatively compatible with the elastic spring-slider model used in the study of some friction laws. It also deals with the stick-slip mechanism which has been associated to the mechanism of earthquakes. The model is rather universal to describe tectonic plate motions as also the friction between different material plates. The proposed model is stochastic model. The stochasticity of the model is described by the birth and the death of contact points of the plates. All diversities of plate interactions are presented by two parameters of the model, related to birth and death of the contacts. This is the joint work with E. Pechersky, G. Sadowski and Y. Suhov.