



## **Study of the rate-state friction law modifications in application to the experimental data.**

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It's known that the rate-state friction law could be used to reproduce the seismic activity generated by tectonic fault sliding. The authors previously showed that the spring-block system with two-parametric friction law exhibits various types of chaotic motion. In the same time, the results of numerical experiments showed that used variant of the friction law did not allow to describe correctly some modes of the block movements. To solve this problem, several modifications of the friction law were considered, and numerical modeling of the spring-block system with modified friction law was conducted. By varying the model parameters, the various slip patterns were obtained, which were different from the patterns obtained using the "general" two-parametric friction law. The numerical results were compared with measurements of the slider-block movements in laboratory experiments; the comparisons were conducted for several variants of the friction law modifications. The modifications allowing to achieve the best matching with the experimental measurements for the different slip modes were found. The application of the modified friction law to real tectonic faults will allow to describe the seismic activity variations more adequately.