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Earthquake Triggering Study at the Spring-Block Facility

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Based on analysis of dynamic events in the Earth crust, as well as experimental data obtained during the last years, which earnestly demonstrate that the crust earthquakes are rather the slip over existing surface of the fault than propagation of new crack in the brittle material, the special spring-block system was developed, manufactured, and tested for laboratory investigation of electromagnetic and mechanical triggering impacts on the fault area. Dimensions of test specimens are of 50x50x50 mm to 200x100x50 mm. Normal load is up to 50 kg. Drag force of electric drive is up to 100 kg, velocity of movement of running block is 0.010 to 500 mm/min. The system allows to study an influence of weak vibrations, dynamic impacts, heating, and electromagnetic actions as the separate and combined triggering factors on the granular layer simulating the fault zone. Preliminary experimental results of behaviour of seimic cycle under mechanical and electromagnetic actions are presented and discussed.