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MODEL EXPERIMENT AND NUMERICAL SIMULATION OF SURFACE EARTHQUAKE FAULT INDUCED BY LATERAL STRIKE SLIP

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This paper presents the models experiment and the numerical simulations of a surface earthquake fault which is induced by the lateral strike slip of the bedrock mass. These studies are made to observe and reproduce the evolution of the fault within soft layers. In the model experiments, the successive bifurcation processes are observed, and they lead to large variability of the faults. The numerical simulation uses a stochastic finite element method which estimates the variability of the fault behavior. Such a stochastic analysis method is a promising tool, since it is able to account for the bifurcation processes and the variability.

Key Words: surface earthquake fault, active fault, bifurcation, strain localization

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