



Friction dynamical weakening in a randomly sheared granular bed

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article

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We investigate experimentally and numerically the response of a granular bed to a shearing stress under both stationary and irregular, that is stick-slip, dynamics. We observe that the granular friction law in the stick-slip regime changes drastically with respect to the stationary state, exhibiting a local minimum that is not present when the plate is driven at constant speed. We investigate the origin of this occurrence by analyzing the granular state variables, like coordination number, packing fraction, and shear velocity profile, in molecular dynamics simulations.

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