

## Frictional Sliding of a Multislip System

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The brittle/ductile transition in rocks has an essential influence in determining the strain rate in lithospheric plates. With this motivation we attempt to study the micromechanics of an elastic medium with interfaces whose slip is governed by rate and state friction. As a preliminary analysis we study the linear stability of the steady-state slip of a finite number  $N$  of parallel interfaces caused by a constant velocity applied at one edge of the medium. We show that interfacial slip can occur with one or two different slip rates if the steady-state friction law displays a minimum as for dry friction. Our results suggest that, when active slip on all  $N$  interfaces is unstable, the medium will select a smaller number of interfaces which continue to slide, the others stopping.

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