



## **Repeating glacial Earthquakes, interacting sticky-spots, and subglacial conditions**

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Sticky-spots, regions of high basal friction, exert fundamental control on the behavior of glaciers and ice sheets. Seismic energy released during stick-slip behavior associated with sticky-spots provides a window into the subglacial environment. Using observations from recent seismograph deployments in Antarctica, we report on a new family of repeating magnitude 2 glacial-earthquakes that originate from a glacier within the Transantarctic Mountains. Complex behavior of this family suggests that it is generated by slip across two closely spaced sticky-spots. A simple two slider-block model can reproduce the observed complexity. However, the range of model parameters that can reproduce the observed behavior is limited. In particular, simulations are sensitive to basal shear stress. Since observations of stick-slip behavior are wide-spread in the subglacial environment, detailed analysis of sticky-spot interactions are likely to prove useful for remotely deciphering subglacial conditions.