



IGPP Virtual Seminar Series

Jenny Suckale

Department of Geophysics, Stanford University

To slide or to flow: Studying extremes in different natural systems sheds light on common physical processes

Date: Tuesday, April 21, 2020

Time: 12:30 pm - 1:45 pm, Pacific Time

Host: Tianze Liu

Register to attend:

https://ucsd.zoom.us/meeting/register/tJwrc-yhpj4pGNbYO8t_i8uc6-Epw2rAIX2W



How fast can ice sheets disintegrate? When do induced earthquakes pose unacceptable risk? Why do volcanoes erupt? The common denominator of what at first glance might seem like disparate systems is that deformation can occur either through distributed flow or through localized sliding. The dynamic interactions between multiple solid and fluid phases – such as ice and meltwater, rock and wastewater, magmatic mush and gas – give rise to drastic nonlinearities that govern abrupt change. In this talk, I leverage insights from different natural systems to contribute to our fundamental understanding of the physical processes that govern the onset and evolution of extreme events. We approach this task through mathematical models, customized for the problem at hand and carefully validated against observational data from a broad spectrum of scales. I focus specifically on why it is beneficial to study these problems within a common model framework.