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Do tidal stresses trigger large earthquakes early? BRADEN BRINKMAN, MICHAEL LEBLANC, University of Illinois at Urbana-Champaign, JONATHAN UHL, None, YEHUDA BEN-ZION, University of Southern California, KARIN DAHMEN, University of Illinois at Urbana-Champaign — The effect of tidal or other periodic stresses on the timing of large earthquakes is a hotly debated topic in geophysics and rock-friction or granular physics communities. I discuss a simple probabilistic model which captures the main qualitative features of several rock-friction or granular experiments and may resolve some outstanding discrepancies between different experimental results. With sufficiently accurate measurements, quantitative predictions for real experiments are possible, including the number of measured events needed to detect correlations between periodic stresses and large slip events for given amplitudes and frequencies.

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