

Abstract Submitted  
for the MAR12 Meeting of  
The American Physical Society

**Jamming, Yielding and Rheology of Weakly Vibrated Granular Media** GEERT WORTEL, JOSHUA DIJKSMAN, University of Leiden, OLIVIER DAUCHOT, CEA-Saclay, MARTIN VAN HECKE, University of Leiden, GRANULAR AND DISORDERED MEDIA TEAM, GROUPE INSTABILITÉS ET TURBULENCE TEAM — We establish that the rheological curve of dry granular media is non-monotonic, both in the presence and absence of external mechanical agitations. In the absence of vibrations, the nonmonotonic flow curve governs the yielding behavior of granular media. In the presence of weak vibrations, the nonmonotonic flow curves govern a hysteretic transition between slow but steady and fast, inertial flows. For large agitations, the transition becomes non-hysteretic. We probe the fluctuations near the point where the 1st order transition becomes of 2nd order.

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Date submitted: 05 Dec 2011

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