

Abstract Submitted
for the MAR07 Meeting of
The American Physical Society

A critical length scale in jammed granular media WOUTER ELLENBROEK, Leiden University, ELLAK SOMFAI, Oxford University, MARTIN VAN HECKE, WIM VAN SAARLOOS, Leiden University — Granular media consist of macroscopic, athermal particles that “jam” into a solid-like state when subjected to a confining pressure. Recent studies of this jamming transition in systems of frictionless particles have shown, quite remarkably, that the jamming point has many features of a critical point, exhibiting power law scalings of various quantities nearby. We study the linear response of these jammed systems to a localized mechanical perturbation. The response fluctuates over a length scale that diverges at the jamming transition, providing a direct numerical observation of a critical length scale in jammed granular media.

Wouter Ellenbroek
Leiden University

Date submitted: 20 Nov 2006

Electronic form version 1.4