

Abstract Submitted
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Shearing granular media: from elasticity to compaction JEAN-FRANCOIS METAYER, MPI for Dynamics and Self-Organization, Bunsenstr. 10, 37073 Göttingen, ELIE WANDERSMAN, MARTIN VAN HECKE, University of Leiden, MATTHIAS SCHRÖTER, MPI for Dynamics and Self-Organization, Bunsenstr. 10, 37073 Göttingen — A granular system is able to behave like a solid (a sand pile for example) or like a liquid depending on the deformation imposed on the material. Using rheometry measurements we investigate the response of a granular bed to an imposed deformation or an imposed stress as a function of its packing fraction. We observed different regimes: elastic and plastic behaviors, flow regime and finally compaction. The dependence of these regimes on the packing fraction and on the pressure allows us to delineate the phase diagram of granular media.

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