

Abstract Submitted  
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**Measuring the phase diagram of granular media** J-F. METAYER, MPI for Dynamics and Self-Organization, D.J. SUNTRUP III, C. RADIN, H.L. SWINNEY, University of Texas, M. SCHROETER, MPI for Dynamics and Self-Organization — The jamming transition in granular media has been the subject of several studies in the last years. However, an experimental observation of phase diagram of granular media in three dimensions is still lacking. The goal of this study is to obtain such a diagram as a function of the shear stress, the packing fraction,  $\phi$ , and the pressure in a granular bed. Shear stress is obtained by measuring the force,  $F$ , needed to pull-up a paddle immersed in a granular bed as a function of its packing fraction and the depth of immersion. We find that the value of this force is strongly depending the packing fraction: for low packing fraction ( $\phi < 0.59$ )  $F$  is constant while it increases strongly with  $\phi$  for higher packing fraction.

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