Abstract Submitted
for the DFD17 Meeting of
The American Physical Society

Measurement of the penetration of a falling droplet in wet granular medium ZHEHAN ZHONG, Tsinghua Univ, WILLIAM STEINHARDT, SHIMA PARSA, ELAD STOLOVICKI, SEAS, Harvard Univ, JIANKUN ZHUO, Tsinghua Univ, DAVID WEITZ, SEAS, Harvard Univ, QIANG YAO, Tsinghua Univ, THERMAL ENGINEERING, TSINGHUA UNIVERSITY TEAM, SEAS, HARVARD UNIVERSITY TEAM — We measure the penetration depth and pattern of the impact of a droplet on a pre-wetted granular pack of PMMA particles in 3D using high speed imaging and a scanning laser sheet. The index of refraction of the wetting fluid and the falling droplet are matched the particles so imaging in 3D is made possible. Using a high speed camera and scanning laser sheet, we are able to directly visualize the impact of the droplet, the speed and direction of the penetration and also the distribution of granular material. We have systematically varied the speed of the impact by changing the height of the droplet and find that the impact affect a limited depth of the packing of the granular material.

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Date submitted: 01 Aug 2017 Electronic form version 1.4