

Abstract Submitted  
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**Granular drops** MATTHIAS MOBIUS, SIDNEY NAGEL, HEINRICH JAEGER, University of Chicago — In fluid dynamics the instability that leads to the breakup of a fluid column into droplets is well known. This so-called Rayleigh-Taylor instability is driven by the competition between gravity and surface tension. We report that a similar phenomenon can be observed for a column of small granules in free fall. The flow out of a circular nozzle starts out uniform and then, further downstream, starts to break up into well defined clusters. This is surprising since granular media do not possess any surface tension. The ambient gas enhances the formation of the drops, but we find clustering at pressures down to  $1/2000^{th}$  of an atmosphere. We investigate the drop formation as a function of pressure and nozzle diameter and discuss the origin of this phenomenon.

Matthias Mobius  
University of Chicago

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