

Abstract Submitted
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Clustering instability in a freely falling granular jet¹ MATTHIAS MOBIUS, Leiden Institute of Physics — This talk is on a clustering instability of a freely falling granular jet composed of 100 micron glass spheres. The granular flow out of a circular nozzle starts out spatially uniform and then, further downstream, breaks up into well defined clusters. An optical method is used that measures inhomogeneities in the flow in order to quantify the growth of the clusters. The role of air is investigated in this phenomenon by changing the ambient air pressure down to $1/5000^{th}$ atm. Clustering is observed down to the lowest pressure and the presence of air leads to larger drops but does not initiate the drop formation. The analysis shows that the drop size is set by fluctuations on the order of the size of the particles at the nozzle.

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