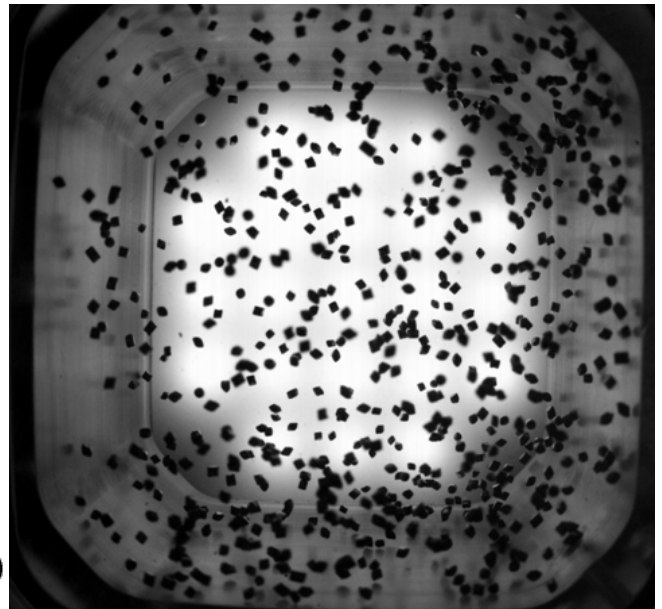
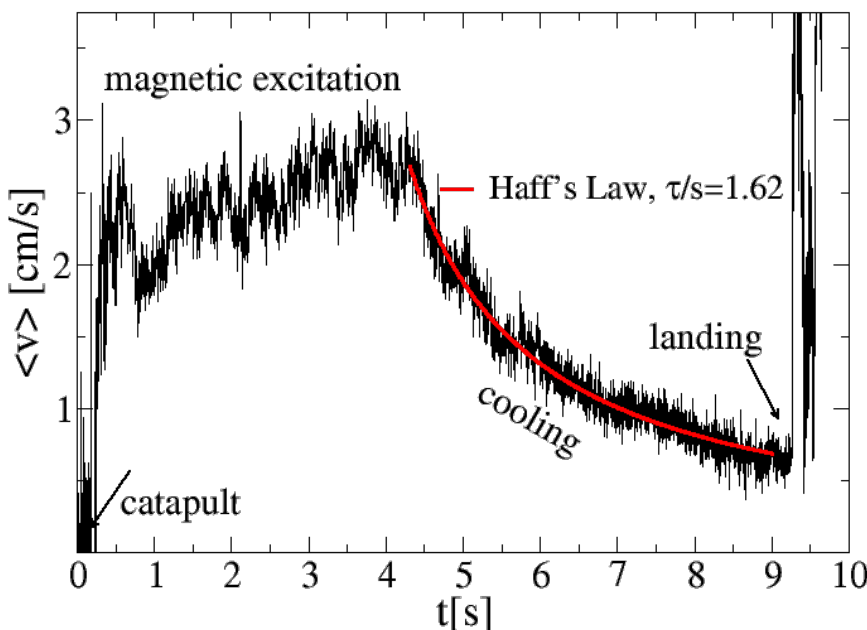


## Dynamics of Granular Matter under Microgravity

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To investigate the dynamics of granular matter, experiments can be performed in two dimensions with some agitation such as vibration or air levitation. In three dimension, however, agitated systems are often not homogeneous enough to allow for straightforward comparison with theory. Hence, it is justified to perform experiments under microgravity.

In order to achieve homogeneous driving of a granular gas in three dimensions, excitation with magnets is applied to alloy particles with high paramagnetic susceptibility. Conditions during a parabolic flight allow the agitation above the level of g-jitter and the determination of the velocity distribution which is found to be broader than a comparable Maxwell distribution. On the catapult in the drop tower, the available time under microgravity can be used to demonstrate the homogeneous cooling of a granular gas according to Haff.

