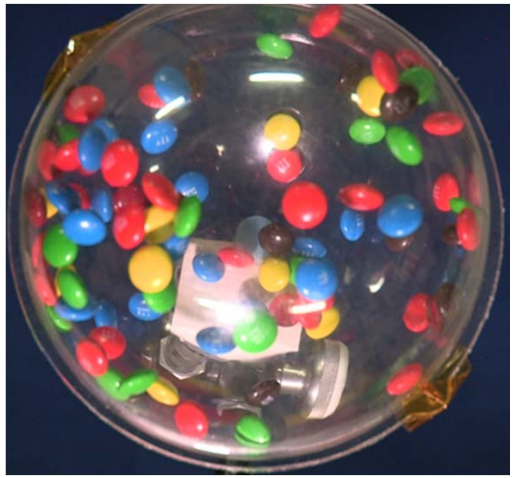
Physikalisches Kolloquium

Universität Konstanz

Di 02.07.19
15:15 Uhr
14:45 Uhr, Kaffee/Tee
R 513

Prof. Dr. Matthias Sperl
DLR / Universität zu Köln



Granular Matter in Space

Granular materials are second only to water in their importance in industry. Despite their apparent simplicity, granular materials are remarkably challenging for both theory and experiment: The energy loss experienced at collisions breaks time-reversal symmetry, makes theoretical calculations much more involved, and allows for emerging effects such as cooling and cluster formation. Energy loss also motivates experiments in microgravity where homogeneous ideal states of granular matter become accessible. Results shall be presented for the regimes of granular gases without sedimentation, granular fluids in homogeneously driven states, as well as granular packings in the absence of pressure gradients. In addition to laboratory experiments, also utilized are the microgravity platforms parabolic flight, drop tower, sounding rocket, and the International Space Station.