

## Some aspects of kinetic theory of granular gases

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Granular materials, such as gravel, sand or different types of powders, are ubiquitous in nature and widely used in industry. Rarified granular systems, where the volume of a solid phase is small as compared to the total volume, are termed as granular gases. The inelastic nature of interparticle collisions gives rise to a number of astonishing phenomena of granular gases, such as anomalous diffusion, ergodicity breaking, non-equipartition of mean kinetic energy. We demonstrate that for steep size distributions of particles the granular temperatures obey a universal power-law distribution, where the power exponent does not depend on the number of species in the system and the restitution coefficient. We present a kinetic model of aggregation and fragmentation, which allows to describe stationary size distribution of particles in Saturn's rings.

