

Abstract Submitted
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Properties of uniformly heated and sheared granular gases. A DSMC simulation. FRANCISCO VEGA REYES, Departamento de Fisica, Universidad de Extremadura, E-06071 Badajoz, Spain — We study a monodisperse hard sphere granular gas by means of the Direct Monte Carlo Simulation (DSMC) of the associated Enskog-Boltzmann equation. Due to the kinetic energy loss in the interparticle collisions, the granular temperature decays to the zero unless there is some kind of energy input. We consider two types of energy input. One, heating, process through which kinetic energy is added directly to the particles; and two, shearing of the granular gas. We focus particularly in the uniform steady states. Contrary to elastic hard sphere gases, in granular gases the steady uniform shear state is possible (i.e., a constant linear velocity profile with steady uniform density and temperature). This state is a reference point in the study of granular gases. We analyse the relevant magnitudes (like stress tensor) in the different energy input cases, as a function of the inelasticity.

Francisco Vega Reyes
Departamento de Fisica, Universidad de Extremadura, E-06071 Badajoz, Spain

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