Investigation of Dynamic Behavior in 1D Non-uniform Granular System

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Abstract: We present a non-uniform granular system in one-dimensional case, whose granularity distribution has the fractal characteristic. The particles are subject to inelastic mutual collisions and obey Langevin equation between collisions. By Monte Carlo simulation we study the dynamic actions of the system. Far from the equilibrium, i.e., $\tau \gg \tau_c$, the results of simulation indicate that the inhomogeneity of the system and the inelasticity of the particles have great influences on the dynamic properties of the system, and correspondingly the influence of the inhomogeneity is more significant.

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