Title:	Understanding Granular System Dynamics using Molecular Dynamic Simulation Techniques
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Abstract:	This thesis aims to understand the dynamics of granular systems using molecular dy- namic simulation techniques. Granular systems are collections of particles with sizes rang- ing from a few micrometers to a few centimeters, and they interact via dissipative mecha- nisms such as inelastic collisions and frictional forces. The first part of this study focuses on the decay of kinetic energy, the velocity distribution of grains, and the density and ve- locity fields as a function of friction coefficient for unperturbed systems. In the second part, the systems are perturbed by applying homogeneous and inhomogeneous driving, and their steady-state properties are analyzed using analytical tools. Through this investiga- tion, a deeper understanding of the dynamics of granular systems is gained, which can have applications in fields such as materials science, engineering, and geophysics.
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