

P11 Shock Propagation and Deflection due to Clouds of Inert and Reactive Particles

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Abstract:

In this paper we present results from numerical simulations of shock propagation and deflection through clouds of particles. We look at both inert and reactive particles, and discuss different tube and cloud configurations suggested to obtain particle heating to temperatures above ignition in the case of aluminum particles. We use the numerical method Smoothed Particle Hydrodynamics (SPH), which has recently been extended to include a multi-phase description. The number of published experimental works on shock interactions with inert and reactive particle clouds is rather sparse, but results obtained are compared to experimental data, where available. We find our results to be in acceptable agreement with published data, and the method to be a promising one for more complex studies.

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