

Abstract Submitted
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A Molecular dynamics study of a Richtmyer-Meshkov instability¹ FRANK CHERNE, GUY DIMONTE, TIMOTHY GERMAN, VIRGINIE DUPONT, Los Alamos National Laboratory — We simulated a single-mode Richtmyer-Meshkov instability (RMI) using the SPaSM (Scalable Parallel Short-range Molecular-dynamics) code on the RoadRunner supercomputer and its Cerrillos counterpart. The simulations consisted of approximately 60 million atoms shocked along the $\langle 111 \rangle$ direction. The single crystal simulations had a sinusoidal groove with a wavelength of 257 nm. We conclude from the simulations that the RMI interfaces shows an inversion for most of the conditions we studied. For certain amplitudes and stresses, we observe the spike saturating. Simulations have been carried out at shock strengths both above and below the melt transition. A discussion of the spike and bubble characteristics will be discussed.

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