

Abstract Submitted
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Numerical Simulation of Shock/Detonation-Deformable-Particle Interaction with Constrained Interface Reinitialization¹ JU ZHANG, Florida Institute of Technology, THOMAS JACKSON, SIVARAMAKRISHNAN BALACHANDAR, University of Florida — We will develop a computational model built upon our verified and validated in-house SDT code to provide improved description of the multiphase blast wave dynamics where solid particles are considered deformable and can even undergo phase transitions. Our SDT computational framework includes a reactive compressible flow solver with sophisticated material interface tracking capability and realistic equation of state (EOS) such as Mie-Gruneisen EOS for multiphase flow modeling. The behavior of diffuse interface models by Shukla *et al.* (2010) and Tiwari *et al.* (2013) at different shock impedance ratio will be first examined and characterized. The recent constrained interface reinitialization by Shukla (2014) will then be developed to examine if conservation property can be improved.

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Ju Zhang
Florida Institute of Technology

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