

Abstract Submitted
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Shock Physics Simulation Using a Hybrid Particle-Element Method ERIC FAHRENTHOLD, University of Texas — Some important shock physics applications have motivated the development of numerical methods based on mixed particle-finite element formulations. Although pure continuum and pure particle based methods are well suited for use in many shock physics problems, their underlying kinematic schemes limit their utility in selected applications. An example is hypervelocity impact simulation, which requires both accurate modeling of strength effects and general descriptions of contact-impact dynamics for all structures and material fragments. In recent research the hybrid particle-element method of Shivarama and Fahrenthold (*Int. J. for Num. Methods in Eng.*, 2004, Vol. 59, pp. 737-753) has been extended and validated in simulations of one and three dimensional shock physics problems.

Eric Fahrenthold
University of Texas

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