

Abstract Submitted
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A Strength Model For Materials With Phase Change ERIC HARSTAD, QIUHAI ZUO, FRANCIS ADDESSIO, Los Alamos National Laboratory — A material strength model has been developed for the deviatoric stress of Zr. The model takes into account different material properties for each phase and evolves separate yield surfaces for each phase. The strength model is coupled with a free energy approach for the equation of state that is applicable to high-pressure applications. The material model has been implemented into a three-dimensional Lagrangian finite-element code. Simulations of an explosively-formed projectile using the model are compared with existing material models that do not consider phase changes.

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