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Title:	Development of a Simple Model of `Hot-Spot' Initiation in Heterogeneous Solid Explosives
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Abstract

Previously we numerically studied `hot-spot' formation in an explosive material as a result of shock induced pore collapse via microscale one-dimensional hydrocde simulations. Following this work, a simple model of the shock compaction process, leading to the formation and subsequent ignition of `hot-spots', has been developed for use in macroscale simulations of shock initiation problems of interest. The simple model is presented, where `hot-spots' are formed as a result of elastic-plastic and viscous stresses generated in the solid explosive during pore collapse. Results from the model are compared with corresponding results from the hydrocode simulations to illustrate the range of validity of the model. The model is also used to help analyse data obtained from single and double shock initiation experiments on the HMX-based explosive EDC37.

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