

Abstract Submitted
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On the Development of a Modified Wedge Test for Shock-to-Detonation Transition in Explosives Using ORVIS MARCIA COOPER, WAYNE TROTT, Sandia National Laboratories — Experiments using a wedge-shaped explosive sample shocked with an attenuator-explosive booster are historically used to provide data for fitting an empirical relationship between the known input stress and shock-to-detonation run distance. Recent problems with plane wave lens availability and increased needs for characterizing novel explosive formulations have highlighted the need for a modernized approach to transitional wedge tests. We present our concept of a modified wedge test which uses a gas gun, and explosive wedge sample and the line-imaging ORVIS (optically recording velocity interferometer system) diagnostic. The ORVIS optical configuration is modified from the standard configuration to project the laser line onto the inclined surface of the explosive sample where the return light is collected with a streak camera. Initial data of shock breakout in inert and explosive samples is presented and discussed.

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