

01 Mach Stem Pressures: Comparison of Experimental with Empirical and MM-ALE Models

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Abstract:

At the 2012 MABS, Dr. Thomas Kisters presented a paper describing measurements of reflected air blast pressures in a Mach Stem, and above the triple point. In this manuscript, data comparisons are made with two empirical models and detailed Eulerian model simulations. Both types of models are shown to be somewhat lacking in wave arrival times, peak pressures and maximum impulses. A discussion of model differences and differences with the excellent repeated experimental results are presented. A focus is placed on impulse as impulse is often the most important characteristic of a shock wave for structural analyses.

Kisters, T. and J. Kuder, 2012, "Experimental Characterization of a Near-Field HOB-Detonation," Proceedings of the 22nd International MABS Symposium, Bourges, France.

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