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**Impact of High-Z Coatings on the Ablation Pressure of Laser Driven Targets.** ANDREW MOSTOVYCH, Enterprise Sciences, Inc., JAECHUL OH, ANDREW SCHMITT, JAMES WEAVER, US Naval Research Laboratory — Recent hydrodynamic experiments [1] with planar high-Z coated targets at the Naval Research Laboratory and spherical implosion experiments with high-Z coated shell targets [2] at the Omega facility all show significant improvement in target stability as a result of the high-Z coatings. For better understanding of the hydrodynamic processes it is important to know the changes in ablation pressure as a result of the high-Z layers. Using the Nike Laser, we have conducted new experiments to measure the change in shock speed of planar CH targets that are irradiated with and without the presence of a 200 Ang. gold high-Z coating. The evolution of shock propagation inside the targets is diagnosed with VISAR probing while average shock velocities are also measured by shock breakout detection from the stepped rear surface of the targets. We find that the high-Z layers produce a time dependent ablation pressure which is detected via the observation of non-steady shocks in the targets. Experimental results and comparisons to hydrodynamic simulations will be presented. Work supported by U. S. Department of Energy.

[1] S.P. Obenschain et al., Phys. Plasmas 9, 2234 (2002).

[2] A.N. Mostovych et al., APS Abstracts DPPFO3002M, (2005).

Andrew Mostovych  
Enterprise Sciences, Inc.

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