

Abstract Submitted  
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**Stability Analysis of Laser Driven Radiative Shocks in High Energy Density Plasmas** ROBERT LUNSFORD, Research Support Instruments, J. MARTIN LAMING, JACOB GRUN, Naval Research Lab, CHARLES MANKA, SERGEI NIKITIN, GELU COMANESCU, R.S.I. — An experiment has been undertaken at the Naval Research Laboratory which looks to investigate the applicability of present analytic models to various multidimensional radiative instabilities within the interstellar medium. The primary focus at this juncture is the examination of a velocity dependant cooling instability thought to cause amplitude fluctuations within the overall shock propagation velocity. The PHAROS laser at NRL is utilized to create the relevant shock front by ablative deconstruction of an aluminized Mylar foil placed at the front of a tunnel within a PMMA block. This primary front launches secondary shocks into the walls of the tunnel and the pressure gradient created within the PMMA is recorded utilizing dark field shadowgraphy on a SIM-8 multi-channel high speed framing camera. It is a deviation from linearity in this secondary front which can be interpreted as a instability in the propagation velocity.

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