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Anisotropic Thermal Conductivity and Elasticity of RDX Using Impulsive Stimulated Thermal Scattering JOHN LAZARZ, SHAWN MCGRANE, ROMAIN PERRIOT, CINDY BOLME, KYLE RAMOS, Los Alamos National Laboratory — Anisotropy of single crystals plays an integral role in meso-scale dynamic behavior of materials. Specifically in energetic materials, the anisotropy of thermal conductivity and elasticity is important in hot spot generation under dynamic compression, leading to deflagration and detonation. High-precision measurements of these anisotropic parameters are needed to validate predictive models of these materials during low-strain rate ($\tilde{}10^{-3}$) scenarios. We are investigating the anisotropic thermal diffusivity of single crystal orthorhombic 1,3,5- trinitroperhydro-1,3,5-triazine (RDX) as a function of pressure using impulsive stimulated thermal scattering (ISTS). We will present results of the experimentally determined thermal diffusivity and its comparison with the anisotropic values predicted by atomistic simulations.

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