

Abstract Submitted
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Strongly-coupled plasmas formed from laser-heated solids¹ MARY LYON, Joint Quantum Institute, SCOTT BERGESON, GUS HART, Brigham Young University, MICHAEL MURILLO, New Mexico Consortium — We present an analysis of ion temperatures in laser-produced plasmas formed from solids with different initial lattice structures. We show that the equilibrium ion temperature is limited by a mismatch between the initial crystallographic configuration and the close-packed configuration of a strongly-coupled plasma, similar to experiments in ultracold neutral plasmas. We propose experiments to demonstrate and exploit this crystallographic heating in order to produce a strongly coupled plasma with a coupling parameter of several hundred.

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Mary Lyon
Joint Quantum Institute

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