

Abstract Submitted
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Potential for Accelerator-Driven Fast Ignition B. GRANT LOGAN,
Lawrence Berkeley National Laboratory — Critical issues and ion beam requirements are explored for fast ignition using ion beams to provide fuel compression using indirect drive and to provide separate short pulse ignition heating using direct drive. Several ion species with different hohlraum geometries are considered for both accelerator-produced and laser-produced ion ignition beams. Ion-driven fast ignition targets are projected to have modestly higher gains than with conventional heavy-ion fusion, and may offer some other advantages for target fabrication and for use of advanced fuels. However, much more analysis and experiments are needed before conclusions can be drawn regarding the feasibility for meeting the ion beam transverse and longitudinal emittances, focal spots, pulse lengths, and target stand-off distances required for ion-driven fast ignition.

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