

Abstract Submitted
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Modeling experimental plasma diagnostics in the FLASH code: Thomson scattering¹ KLAUS WEIDE, NORBERT FLOCKE, SCOTT FEISTER, PETROS TZEFERACOS, DONALD LAMB, Univ of Chicago — Spectral analysis of the Thomson scattering of laser light sent into a plasma provides an experimental method to quantify plasma properties in laser-driven plasma experiments. We have implemented such a synthetic Thomson scattering diagnostic unit in the FLASH code, to emulate the probe-laser propagation, scattering and spectral detection. User-defined laser rays propagate into the FLASH simulation region and experience scattering (change in direction and frequency) based on plasma parameters. After scattering, the rays propagate out of the interaction region and are spectrally characterized. The diagnostic unit can be used either during a physics simulation or in post-processing of simulation results. FLASH is publicly available at flash.uchicago.edu.

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