

Abstract Submitted  
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**Implementation of Laser Energy Deposition in FLASH<sup>1</sup>** A. DUBEY, S.M. COUCH, DOE/ASC/NNSA/FLASH Center, University of Chicago — FLASH is a highly capable, fully modular, extensible, and professionally managed code widely used for the simulations in astrophysics and other communities. Over the past year we have been adding capabilities to FLASH for use by the academic HEDP community. Laser energy deposition is one of key capabilities to be added in the process. In this work we present the algorithmic development for laser energy deposition and the results of verification tests. The path of lasers through matter is approximated as rays using the principles of geometric optics. We exploit the infrastructure for Lagrangian tracer particles already available in FLASH, treating rays logically as trajectories of independent particles. The required data structures are very similar and the nature of motion through the domain can be treated using the same infrastructure. We take the laser energy to be deposited via the inverse-bremsstrahlung process.

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