

Abstract Submitted
for the DPP11 Meeting of
The American Physical Society

Vlasov-Fokker-Planck simulations of magnetic field dynamics in inertial confinement fusion related scenarios ARCHIS JOGLEKAR, ALEC THOMAS, University of Michigan - Center for Ultrafast Optical Sciences — In the interaction of high power laser beams with solid density plasma, there are a number of magnetic field generating mechanisms which result in very strong fields. This paper presents 2D simulations of near critical density plasma using a fully implicit Vlasov-Fokker-Planck code, IMPACTA, which includes self-consistent magnetic fields as well as anisotropic electron pressure terms in the expansion of the distribution function. Magnetic field generation and advection by heat flows is studied, particularly in the context of multiple laser spot heating where reconnection of magnetic field lines may occur. This is relevant to the interior of a hohlraum, where heating by multiple laser beams occurs.

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Date submitted: 13 Jul 2011

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