

Abstract Submitted
for the DPP09 Meeting of
The American Physical Society

Hosing in Laser Channeling in Fast Ignition G. LI, R. YAN, C. REN, V.N. GONCHAROV, Laboratory for Laser Energetics, U. of Rochester, J. TONGE, W.B. MORI, UCLA — Laser channeling aims to reduce the energy loss of an ignition pulse in the mm-scale underdense plasma of fast ignition targets. Previous full-scale particle-in-cell (PIC) simulations in 2D identified laser and channel hosing as an important instability that causes channel-bifurcation and limits channeling speed [1]. Hosing in 3D has also been observed in recent PIC simulations, which show that hosing grows slower in 3D than in 2D. Laser hosing in this long wavelength regime is through coupling with the ion acoustic waves. A variational analysis of hosing in 2D and 3D will also be presented. This work was supported by the U.S. Department of Energy under Cooperative Agreement Nos. DE-FC52-92SF19460, DE-FC02-04ER54789, and DE-FG02-06ER54879.

[1] G. Li et al., Phys. Rev. Lett. 100, 125002(2008).

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Date submitted: 21 Jul 2009

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