

Abstract Submitted
for the DPP12 Meeting of
The American Physical Society

Symmetry in a 48 beams Direct Drive configuration STEPHANE LAFFITE, BENOIT CANAUD, VINCENT BRANDON, CEA, MAURO TEMPORAL, ESTIA — Symmetry is still one of the major issues of the Direct-Drive (DD) approach to Inertial Confinement Fusion (IOCF). We present here 2D calculations in a 48-beam DD configuration. The objective is to connect the end-of-implosion asymmetries to the laser intensity asymmetries. First, numerical simulations were performed in normal incidence with various applied low-mode asymmetries. Then, we studied the impact on implosion of intrinsic asymmetry for a typical 48-beam configuration. A correlation between fuel radius asymmetries and laser absorption asymmetries is demonstrated. Asymmetry of the laser energy absorption through the whole plasma is found to be a good metric to describe the impact of laser asymmetries on implosion. Also, we show similarities between 2D numerical results and 3D ray-tracing model from [M. Temporal et al, EPJD, 55, 139-145, 2009].

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Date submitted: 12 Jul 2012

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