

40th International Workshop on High Energy Density Physics with Intense Ion and Laser Beams

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Direct-Drive Inertial confinement fusion studies for LMJ at CEA

Monday, January 27, 2020 11:00 AM (30 minutes)

We will begin the presentation by a description of the state of the LMJ completion (numbers of bundles installed or operational, diagnostics completed, etc.).

Then, we will present a review of our recent activities regarding direct-drive implosion and preparation of Inertial Confinement Fusion on the Laser MégaJoule Facility.

Various aspects will be addressed such as the sensitivity of the self-ignition threshold of direct-drive ICF targets to numerous physical phenomena such as heat conduction at the hot spot edge or stopping power modelling. A study on the characterization of fuel using secondary fusion products will be also shown. Finally we will address the first direct-drive gas-filled capsule implosions done recently on LMJ that have produced the first neutrons on LMJ coming from D+D thermonuclear fusion. This will be supplemented by pre-and post-shot 3D TROLL-code results.

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