

Asymmetrically driven implosion experiment on the Laser MegaJoule

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We report on the results of the first implosion experiments performed on the Laser MegaJoule (LMJ) facility. Their main purpose was to provide a test of 2D simulations in the case of strongly perturbed hydrodynamics induced by large polar asymmetries of incident radiative flux on a capsule, while preserving azimuthal symmetry.

In these experiments, one quad of LMJ is focused axially on a gold shield inside a hohlraum. The shield effectively divides the hohlraum in two compartments, and a capsule placed in the second compartment is indirectly driven by the x-ray flux generated in the first one. The subsequent asymmetric implosion is backlit by an x-ray source generated by another quad of LMJ and imaged with an x-ray microscope coupled to a framing camera. Time-gated x-ray radiographs of the imploding capsule and diode array measurements of the hohlraum x-ray emission are found to be in good agreement with FCI2 radiative hydrodynamics simulations.