

Abstract Submitted  
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**Laser plasma interaction in rugby-shaped hohlraums** P.-E. MASSON-LABORDE, F. PHILIPPE, V. TASSIN, M.-C. MONTEIL, P. GAUTHIER, A. CASNER, S. DEPIERREUX, P. SEYTOR, D. TEYCHENNE, P. LOISEAU, P. FREYMERIE, CEA DAM DIF — Rugby shaped-hohlraum has proven to give high performance compared to a classical similar-diameter cylinder hohlraum. Due to this performance, this hohlraum has been chosen as baseline ignition target for the Laser MegaJoule (LMJ). Many experiments have therefore been performed during the last years on the Omega laser facility in order to study in details the rugby hohlraum. In this talk, we will discuss the interpretation of these experiments from the point of view of the laser plasma instability problem. Experimental comparisons have been done between rugby, cylinder and elliptical shape rugby hohlraums and we will discuss how the geometry differences will affect the evolution of laser plasma instabilities (LPI). The efficiency of laser smoothing techniques on these instabilities will also be discussed as well as gas filling effect. The experimental results will be compared with FCI2 hydro-radiative calculations and linear postprocessing with Piranah. Experimental Raman and Brillouin spectrum, from which we can infer the location of the parametric instabilities, will be compared to simulated ones, and will give the possibility to compare LPI between the different hohlraum geometries.

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