Abstract Submitted
for the DPP17 Meeting of
The American Physical Society

Rugby and elliptical-shaped hohlraums experiments on the OMEGA laser facility. VERONIQUE TASSIN, MARIE-CHRISTINE MONTEIL, SYLVIE DEPIERREUX, PAUL-EDOUARD MASSON-LABORDE, FRANCK PHILIPPE, PATRICIA SEYTOR, PASCALE FREMERYE, BRUNO VILLETTE, CEA-DAM-DIF, F-91297 Arpajon, France — We are pursuing on the OMEGA laser facility indirect drive implosions experiments in gas-filled rugby-shaped hohlraums in preparation for implosion plateforms on LMJ. The question of the precise wall shape of rugby hohlraum has been addressed as part of future megajoule-scale ignition designs [1]. Calculations show that elliptical-shaped holhraum is more efficient than spherical-shaped hohlraum. There is less wall hydrodynamics and less absorption for the inner cone, provided a better control of time-dependent symmetry swings. In this context, we have conducted a series of experiments on the OMEGA laser facility. The goal of these experiments was therefore to characterize energetics with a complete set of laser-plasma interaction measurements and capsule implosion in gas-filled elliptical-shaped hohlraum with comparison with spherical-shaped hohlraum. Experiments results are discussed and compared to FCI2 radiation hydrodynamics simulations. [1] S. Laffite, Physics of Plasmas 17, 102704 (2010).

Veronique Tassin
CEA-DAM-DIF, F-91297 Arpajon, France

Date submitted: 12 Jul 2017 Electronic form version 1.4