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Long pulse gas-filled halfraums on OMEGA for high growth-factor ablative Rayleigh-Taylor experiments ALEXIS CASNER, G. HUSER, B. VILLETTE, M. VANDENBOOMGAERDE, D. GALMICHE, S. LIBERATORE, F. PHILIPPE, L. MASSE, CEA-DAM ILE DE FRANCE, BP 12, BRUYERES LE CHATEL, F-91190, FRANCE TEAM — Mitigation of Rayleigh-Taylor instabilities growth is crucial to enhance the performance of LMJ and NIF ignition targets. We recently develop on OMEGA a long-pulse platform in order to experimentally prove two mechanisms invoked for RTI stabilization, i.e the graded-doped ablator [1] and the new laminated ablator concept [2]. We used gas-filled halfraums (1 atm neopentane) and stack up to 20 drive beams along 3 cones to create a 7 ns long radiation drive. The new E-IDI-300 phase plates were associated with 1D SSD and halfraum energetics was validated along P5/P8 axis for backscattering measurements along 2 cones. We will also present the first face-on radiographies for modulated CH(Ge) samples and compare them with FCI2 hydrocodes simulations. Foil thickness optimization based on these simulations allows us to anticipate growth factors up to 500 in optical depth and the experimental emulator designs for [1,2] will be presented.
[1] S.W. Haan *et al.*, Phys. Plasmas **12**, 056316 (2005).
[2] L. Masse., Phys. Rev. Lett. 98, 245001 (2007). DPP07 invited talk.

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