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High-energy-coupling experiments on NIF toward high-adiabat ignition using HDC capsules in rugby hohlraum* Y. PING, V. SMALYUK, P. AMENDT, S. KHAN, N. LEMOS, E. HARTOUNI, K. BAKER, D. HO, O. JONES, J. LINDL, A. NIKROO, M. STADERMANN, D. STROZZI, R. TIPTON, R. NORA, Lawrence Livermore Natl Lab, N. KABADI, B. LAHMANN, R. PETRASSO, MIT — Following the successful NIF experiment demonstrating ˜30% energy coupling to an aluminum capsule in a rugby-shaped gold hohlraum with a reverse ramp laser drive (Ping, Smalyuk, Amendt, et al. Nature Physics 2019), a series of NIF shots are being carried out using 3mm-diameter HDC capsules and 2-shock pulse shape to determine whether the high coupling can be maintained for a single-shell ignition design. The first energy walkup shot at 1.1MJ showed low backscatter and hot spot symmetry in good agreement with simulations. Results from subsequent experiments will be presented and the prospect on high-adiabat ignition enabled by high energy coupling (˜500kJ) will be discussed. * This work was performed under the auspices of the US DOE by LLNL under contract number DEAC52- 07NA27344.

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