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**Developing implosion shape characterization experiments for the metal graded Pushered Single Shell implosions using the Advanced Radiographic Capability**[1] D. A. MARTINEZ, E. L. DEWALD, S. MACLAREN, C. YOUNG, R. TIPTON, D. D. HO, J. E. PINO, D. H. KALANTAR, S. JOHNSON, Lawrence Livermore Natl Lab, S. VONHOF, General Atomics — The pushered single shell concept uses a spherical capsule with a metallic layer to compress a fusion fuel mixture to achieve ignition. While the high-Z pusher, located at the gas-shell interface traps core radiation losses, lowering ignition threshold, the pusher-fuel mix can cool the core and compromise ignition. This concept is being studied at the National Ignition Facility using a hohlraum driven with 192 laser beams [Dewald, et al. 2019]. The laser drive will be tuned to symmetrize the PSS implosion based on a series of in-flight radiography measurements with a high enough photon energy to probe the opaque shell. The backlighter scheme utilizes the Advanced Radiographic Capability (ARC) [J. M. Di Nicola, et al. 2015] to produce two x-ray point sources at different times using Au wires. The initial radiography test compares two possible configurations: one with a bare wire and one with the wire enclosed by a two-dimensional plastic parabolic structure designed to redirect and focus the low intensity wings of the ARC beamlets onto the wire [R Tommasini et. al., to be submitted].

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