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Scanning the Si dopant level in DT-layered CH capsule implosions at the National Ignition Facility[1] TILO DOEPPNER, BENJAMIN BACHMANN, LAURA R. BENEDETTI, DEBBIE CALLAHAN, DANIEL CASEY, LAURENT DIVOL, DENISE E. HINKEL, OMAR HURRICANE, Lawrence Livermore Natl Lab, CHRISTINE KRAULAND, General Atomics, OTTO L. LANDEN, MICHAEL J. MACDONALD, LAURENT P. MASSE, ALASTAIR MOORE, JOSEPH E. RALPH, Lawrence Livermore Natl Lab, PETR L. VOLEGOV, Los Alamos Natl Lab, KLAUS WIDMANN, Lawrence Livermore Natl Lab — Across all ablator designs a reduction of the DT ice ρr compared to predictions from hydrodynamic simulations is observed. We hypothesize that this is due to mixing at the ablator ice interface caused by preheating from Au M-shell fluorescence emitted by the hohlraum wall. The project presented here tests this hypothesis by varying the Si dopant level in the preheat shielding layer between 0.8 and 4.2 atomic % with the goal of identifying an optimum Si dopant fraction that reduces the discrepancy between experiments and simulations. For this study a series of 0.9scale CH layered-DT capsule implosions (inner radius = 840 μm) was fielded in low gas-fill (0.6 mg/cc) hohlraums. A diagnostic-rich configuration was implemented to identify and study diagnostic signatures of ablator-ice mix. The results of this project are important to improve stability at the ablator ice interface in future implosion designs.

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