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Design of an Omega Experiment to Diagnose Ablator Burn-through with d-3He Proton Yield and Spectra N.D. DELAMATER, D.C. WILSON, E.L. LINDMAN, N.M. HOFFMAN, G.A. KYRALA, Los Alamos National Lab, F.H. SEGUIN, J. FRANJE, R.D. PETRASSO, C.K. LI, M.I.T., P.A. AMENDT, B. SPEARS, Lawrence Livermore National Lab — Design calculations are presented for proposed Omega experiments to diagnose ablator burn-through using d-3He proton spectra. These experiments use "symergy" capsules which are sensitive to both drive asymmetry and strength. These experiments will help develop the "symergy" capsule for use as a burn-through diagnostic for future application to NIF experiments. We are considering scanning through a range of shell thicknesses of 20-50 micron using Ge-doped GDP plastic shells in capsules of outside diameter 560 micron and filled with up to 60 atm D2-3He. Expected neutron yields are up to 1e9 and proton yields up to 1e7, using a 1 ns laser pulse in an Omega scale hohlraum. This should give measurable proton spectra and ion temperature measurements. We are also planning on using these experiments to measure drive asymmetry from pole-hot to equator-hot by varying the laser pointing and observing the response in both x-ray imaging and d-3He protons and DD neutrons. Preliminary 2-D computational results will be presented.

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