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Analysis of nonlinear stimulated Raman scattering for NIF hohlraum with Diamond ablators LIN YIN, BRIAN ALBRIGHT, Los Alamos National Laboratory, RICHARD BERGER, Lawrence Livermore National Laboratory, BEN BERGEN, KEVIN BOWERS, Los Alamos National Laboratory — New capsule designs with Diamond ablators have recently been considered for NIF experiments. The new designs with diamond capsule require much shorter laser pulses ($\sim$ 12ns) and more mass is ablated from Diamond capsule, resulting in higher electron temperature T_e and density n_e at peak laser power and leading to different hohlraum plasma conditions (i.e., different $k\lambda_D$ values where k is the wave number of the electron plasma waves and λ_D is the Debye length). Multi-speckled VPIC simulations at mm-scale size are used to assess the stimulated Raman scatter (SRS) risk of new diamond-ablator designs on the NIF by modeling SRS in the hohlraum using plasma conditions from the Hydra simulations. We will present VPIC results of SRS reflectivity, hot electron energy and flux from regions with various $k\lambda_D$ values, and SRS spectra that peak at wavelengths below 600 nm.

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