

Abstract Submitted
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Using view factor analysis to guide multi-parameter hohlraum optimization for NIC¹ CLIFF THOMAS, JOHN EDWARDS, Lawrence Livermore National Lab — To achieve ignition, a NIC capsule requires a high degree of x-ray drive uniformity. In theory, this is achieved by the careful balance of several parameters including laser power, the distribution of laser power in each laser cone, the hohlraum geometry, the case-capsule ratio, laser pointing and focal spot size. Since the parameter space is large, it is difficult to explore using full-physics models. To circumvent this difficulty, this study considers view factors - a rapid vehicle for exploring the available parameter space - to identify sub-regions for more detailed analysis. Combining view factors with a global optimization routine, the NIC parameter space is thoroughly explored, and ‘symmetry islands’ are found. These islands are explained, and the balance between energy efficiency and drive symmetry is discussed.

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