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Using view factor analysis to understand symmetry for NIF Indirect Drive¹ CLIFF THOMAS, MICHAEL EDWARDS, Lawrence Livermore National Lab — To achieve ignition, a NIF capsule requires a high degree of drive symmetry. In practice, this is obtained with the careful balance of several parameters (such as the number of laser cones, and/or the distribution of laser power between separate laser cones). Since the available parameter space is large, it can be difficult to optimize the symmetry using full-physics models. To motivate the further investigation of the available parameter space, and to provide greater insight on symmetry, this study considers a view factor description of radiation transport for indirect drive. Using this approach, the flux on the capsule can be understood as a function of laser pointing, laser spot size, cone balance, and hohlraum geometry (hohlraum length, capsule radius, and LEH size). As a result, avenues for tuning symmetry are explained, and suggestions are made to improve symmetry through the full laser drive.

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