

Abstract Submitted
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Hohlraum Reactions as a NIF Diagnostic RICHARD KORZEKWA, ANNA HAYES, LANL — In Inertial Confinement Fusion (ICF), a capsule containing fuel, typically deuterium and tritium (D-T), is compressed using a pulse of energy. At the National Ignition Facility (NIF), experiments will attempt to achieve ignition using an indirect drive apparatus in which a D-T capsule is placed inside a high-Z hohlraum in order to produce x-rays. One of the primary concerns for ICF is mixing between capsule and fuel, for which there does not currently exist a diagnostic at NIF. With an understanding of the effects of mix on the shape of the neutron spectrum, we can use several different reactions expected to occur within the hohlraum along with radiochemistry to infer some aspects of the neutron spectrum and hence make measurements concerning the level of mix taking place within the capsule. In addition, we may be able to make similar measurements for temperature, $\langle \rho^*r \rangle$, or $\langle \rho^*r \rangle$ asymmetry.

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