

Abstract Submitted  
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**Creating a Precision Optical Depth Uniformity Tool for Inertial Confinement Fusion Targets** SAMUAL EDDINGER, HAIBO HUANG, RICHARD STEPHENS, ABBAS NIKROO, General Atomics, STEVE HAAN, Lawrence Livermore National Laboratory — NIF specifications require optical depth variation measurement accuracy to  $10^{-4}$  in less than one day. We constructed a system by use of a precision rotation encoded air bearing, high speed PMT tubes, optimized optics, microfocus x-ray sources and fast scintillators to meet this specification. Through interleaving data, we eliminated long term drift, allowing us to have no other error sources but shot noise. As a result, the measurement time to get to the required statistics is the limiting factor. Our recent work integrated a microfocus x-ray source with minimal anode to window distance to maximize the counts in the PMT, and increase the system resolution.

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