

Abstract Submitted
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Automated Hohlräum Inspection¹ RYAN ESPINOSA, California State University, Chico, MATTHEW QUINN, KURT BOEHM, General Atomics — Components for Inertial fusion energy (IFE) and high-energy density physics (HED) targets need to be manufactured to micron-level precision and require inspection for accuracy of machined features as well as verification of surface conditions. General Atomics, a provider of precision components and subassemblies for the IFE and HED community, has started to use robotics and automation to assist in some of the most repetitive and time-consuming assembly and metrology steps. Robotic cells are being developed in an effort to reduce the man-hours required to perform the inspections necessary to ensure delivery of precision machined parts to specifications. Inertial fusion utilizes hohlraums to encapsulate hydrogen isotopes that is to undergo fusion. Hohlraums are prone to manufacturing defects such as grain boundaries, delamination, fractures, etc. This project investigates the use of robotics and visual software to create 2D and 3D mapping of hohlraum surfaces to sufficiently identify these defects. The success of this project would considerably reduce the number of hours and processes needed in order to adequately inspect hohlraums for imperfections.

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