



LAWRENCE
LIVERMORE
NATIONAL
LABORATORY

Time resolved radiographs and fuel density of the stagnation phase of Inertial Confinement Fusion implosions - NSA report

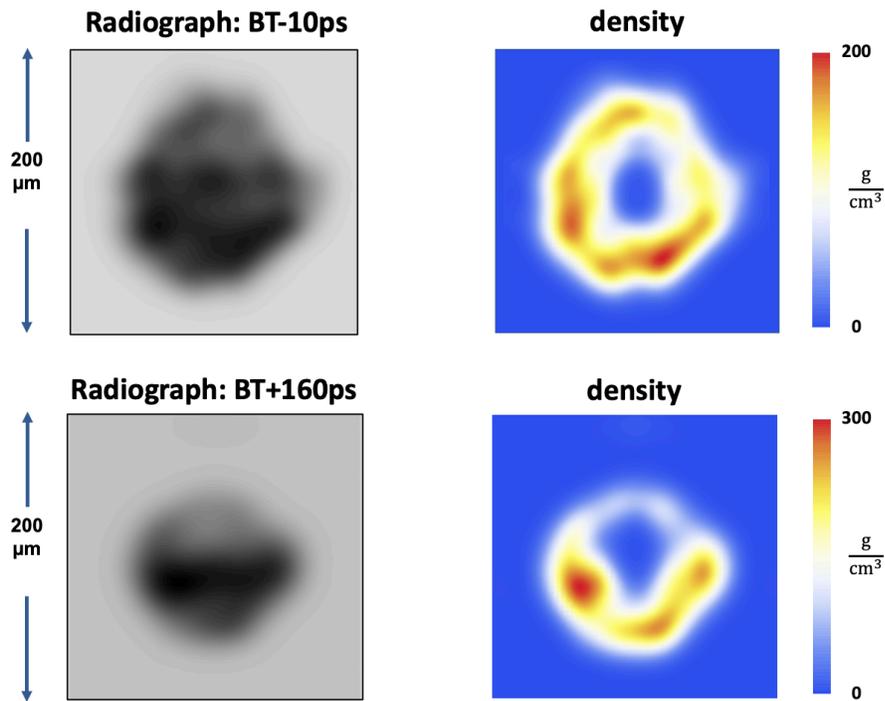
R. Tommasini

June 22, 2020

Disclaimer

This document was prepared as an account of work sponsored by an agency of the United States government. Neither the United States government nor Lawrence Livermore National Security, LLC, nor any of their employees makes any warranty, expressed or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights. Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States government or Lawrence Livermore National Security, LLC. The views and opinions of authors expressed herein do not necessarily state or reflect those of the United States government or Lawrence Livermore National Security, LLC, and shall not be used for advertising or product endorsement purposes.

This work performed under the auspices of the U.S. Department of Energy by Lawrence Livermore National Laboratory under Contract DE-AC52-07NA27344.



Left: Compton radiographs of a 3-shock HDC THD layered implosion recorded 10ps before and 160ps after bang-time (BT) at the NIF, using >50keV point projection backlighters generated by irradiating a 25μm-diameter Au wire with 30ps-long ARC pulses. Right: Reconstructed density distributions of fuel and remaining ablator showing significant 3D structure and top-down asymmetry.

Tommasini, R., Landen, O. L., Hopkins, L. B., Hatchett, S. P., Kalantar, D. H., Hsing, W. W., et al. (2020). "Time resolved fuel density profiles of the stagnation phase of indirect-drive Inertial Confinement implosions." Manuscript submitted for publication.