

Abstract Submitted  
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**3-D electron temperature and x-ray emission tomography of the ICF hotspot at the National Ignition Facility**<sup>1</sup> KA WAI WONG, BENJAMIN BACHMANN, Lawrence Livermore Natl Lab — A 3-D reconstruction of x-ray emission distribution of the inertial confinement fusion (ICF) hotspot can help to characterize and compare the thermophysical states of stagnated fusion plasmas. We apply and test the iterative algorithm, Algebraic Reconstruction Technique (ART), to reconstruct the 3-D x-ray distribution of the ICF hotspot from very limited number of two-dimensional x-ray projection images. Furthermore, we infer the 3-D hotspot electron temperature distribution by using the x-ray reconstructions from different x-ray energy channels ranging from 20 to 30 keV, where the ablator becomes optically thin. We will present our x-ray brightness and electron temperature reconstructions and compare results using two versus three lines-of-sight with synthetic and experimental data. Release Number LLNL-ABS-815375

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