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**Image and Radiation Power Analysis Techniques for Determining Electron temperature, Liner Areal Density, and Radiated Energy in MagLIF Experiments** MATTHEW EVANS, Univ of Rochester, PATRICK KNAPP, MATTHEW GOMEZ, STEPHANIE HANSEN, RYAN MCBRIDE, L. ARMON MACPHERSON, Sandia National Laboratories, PIERRE GOURDAIN, Univ of Rochester — We describe techniques developed to analyze filtered Time Integrated Pinhole Camera (TIPC) images to determine the axially resolved electron temperature and liner areal density at stagnation in MagLIF experiments conducted on the Z machine at Sandia National Laboratories. X-ray power detectors are analyzed to determine the absolute radiated energy. The TIPC images are co-registered using intensity based similarities. This technique is shown to provide accurate registration without the use of fiducial markings. A filtered 6-channel PCD array was used to record the radiated power at photon energies >1 keV. A model for the x-ray emission is used with the data set to perform Bayesian parameter estimation to simultaneously determine the electron temperature, liner areal density and x-ray yield with uncertainties via $\chi^2$ minimization.

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