Abstract Submitted
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Design of the National Ignition Facility Imaging and Spectroscopy Snout (ISS)[1] CHRISTINE KRAULAND, General Atomics, J. HUCKINS, N. B. THOMPSON, D. B. THORN, M. J. AYERS, J. CELESTE, M. B. SCHNEIDER, Lawrence Livermore National Laboratory — Current diagnostic capabilities at the National Ignition Facility (NIF) preclude the ability to record simultaneous neutron images and x-ray spectra along a similar line of sight. To better understand both 3D asymmetries and hot-spot mix, it would be advantageous to acquire these data on every ICF experiment. We present the design of the new ISS diagnostic that supports data collection of neutron pinhole images, 1D spatially-resolved x-ray spectra and time-resolved x-ray pinhole images at both low (10X) and high (55X). This new instrument is specific to the polar port of the NIF chamber, and it supports standard snout appendages, such as wedge range filters and solid radiochemical collection diagnostics. The x-ray spectrometer is configured to concurrently image two orthogonal lines of sight with spectral channels from 7.5 to 11.5 keV. Selectable crystal configurations also provide the ability to field one of three narrower band, higher resolution channels in place of a broadband channel. Full design details and expected performance will be discussed.

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