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**Time- and space-resolved Si emission measurements of the Z-pinch dynamic hohlraum**[1] GREGORY A. ROCHAU, J.E. BAILEY, K.J. PETERSON, G.S. DUNHAM, P.W. LAKE, S.A. SLUTZ, Sandia National Laboratories, J.J. MACFARLANE, Prism Computational Sciences, Y. MARON, Weizmann Institute of Physics — Simulations of the Z-pinch dynamic hohlraum predict a radiating shock in the 14mg/cc $CH_2$ foam that reaches $T_e > 600$eV with a peak hohlraum temperature of $T_r > 200$eV. To test these simulations, an advanced diagnostic technique has been developed that relies on the measurement of time- and space- resolved Si line emission in combination with 2-D collisional- radiative calculations to infer the conditions of the dynamic hohlraum interior. The line emission originates from Si atoms doped over the central 3 - 6mm height of the foam, and is recorded on an elliptical spectrometer with 1-D spatial resolution imaging through a slot aperture on the top of the dynamic hohlraum. The 2-D calculations assume a 2 or 3 region model of the Si-doped $CH_2$ foam conditions, and include non- local photo-pumping processes that are determined to have an important influence on the observed spectra. The time- and space-resolved conditions of the dynamic hohlraum interior inferred from this technique are presented and compared with 2-D rad-hydro simulations.

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Gregory A. Rochau
Sandia National Laboratories

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