Abstract Submitted
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Experimental Investigation of X-ray Sources for Use in X-ray Thomson Scattering[1] E.C. HARDING, T. AO, J.E. BAILEY, S.B. HANSEN, A.B. SEFKOW, M.P. DESJARLAIS, R.W. LEMKE, L.P. MIX, D.B. SINARS, I.C. SMITH, Sandia National Labs, G. GREGORI, U. of Oxford — X-ray Thomson Scattering (XRTS) measurements demand high-brightness x-ray probes due to the small scattering cross-sections of most materials. Using the Z-Beamlet laser we investigated several x-ray sources, and endeavored to determine the conditions of the emitting plasma so that we may optimize the x-ray production. The relative line intensities from measured spectra, as well as HYDRA simulations, were used to diagnose the temperature and density of the plasma. Future XRTS experiments on Z will require the use of a foam target in order to create a spatially resolvable scattering signal. In preparation for these experiments several undriven foam scattering experiments were conducted. These results as well as plans for the upcoming Z experiment will be presented.

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E.C. Harding
Sandia National Labs

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