

Abstract Submitted  
for the DPP17 Meeting of  
The American Physical Society

**Calibration of a Multipurpose Bragg-Crystal Spectrometer.**<sup>1</sup>

NICHOLAS AYBAR, Univ of California - San Diego, ED MARLEY, JIM EMIG, MARILYN SCHNEIDER, Lawrence Livermore National Laboratory — X-ray spectroscopy is an important diagnostic tool in understanding key parameters in high energy density science. The radiative properties of material in ICF implosions carries important information about the temperature and density of the generated plasma. To obtain absolute measurements of x-ray flux, a measurement of the energy-dependent response of the diagnostic is necessary. The calibration of a multipurpose Bragg-crystal spectrometer (MSPEC) is presented. This spectrometer was designed at Lawrence Livermore National Lab and utilizes a variety of elliptical geometries to record x-ray spectra in the 1.0 - 9.0 keV range. A laboratory x-ray source is measured at two symmetric locations: the MSPEC and a Si detector. The resolved spectrum from the MSPEC is recorded onto a CCD and compared to the signal recorded with the Si detector to give the energy dependent response of the MSPEC. The response of different crystals (PET, KAP, CsAP) and different elliptical geometries is measured and discussed.

<sup>1</sup>This work was performed under the auspices of the U.S. Department of Energy by Lawrence Livermore National Laboratory under Contract DE-AC52-07NA27344.

Nicholas Aybar  
Univ of California - San Diego

Date submitted: 13 Jul 2017

Electronic form version 1.4