

Abstract Submitted  
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**Z-pinch X-ray spectra obtained with a polarization splitting crystal**<sup>1</sup> R. PRESURA, M.S. WALLACE, University of Nevada, Reno, N.R. PEREIRA, Ecopulse, Inc. — Anisotropy in a plasma may cause polarization of the spectral lines emitted. For example, the X-rays emitted by Z-pinch plasmas may be polarized if electron beams are present. To detect the polarization, we developed an X-ray spectropolarimeter using a single polarization-splitting crystal. Reflections on intersecting internal planes of the crystal select lines with mutually orthogonal linear polarization. The (10-10) internal planes of a quartz crystal can be used to split several lines of the Al K-shell spectrum according to polarization. We applied this technique to several types of Al wire arrays (cylindrical, conical, and X-pinches), expected to produce increasing beam contributions to the electron population. Peculiarities of the instrument set-up and of the spectra analysis will be presented.

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