

Abstract Submitted  
for the DPP12 Meeting of  
The American Physical Society

**Resolving Microstructures in Z Pinches with Intensity Interferometry**<sup>1</sup> J.P. APRUZESE<sup>2</sup>, J.L. GIULIANI, J.W. THORNHILL, Naval Research Laboratory, Y. MARON, E. KROUPP, Weizmann Institute — Nearly 60 years ago, Hanbury Brown and Twiss<sup>3</sup> succeeded in measuring the 30 nanoradian angular diameter of Sirius using a new type of interferometry that exploited the interference of different photons emitted from opposite sides of the stellar disk. Its basis was the measurement of intensity correlations as a function of detector spacing, with no beam splitting or direct collection of phase information needed. Applied to Z pinches, X pinches, or laser-produced plasmas, this method could potentially yield spatial resolution well under one micron, using photon energies ranging from visible to x-ray. We consider the advantages, disadvantages, and possible complications in applying intensity interferometry to the pinch environment. Preliminary experimental designs are considered.

<sup>1</sup>Work supported by U. S. Department of Energy, National Nuclear Security Administration.

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<sup>3</sup>R. Hanbury Brown and R. Twiss, *Nature* 178, 1046 (1956).

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Date submitted: 24 Jul 2012

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