Abstract Submitted
for the DPP05 Meeting of
The American Physical Society

A Compact X-pinch X-ray source for Characterization of Inertial Confinement Fusion Capsules[1] FARHAT BEG, University of California, San Diego, RICH STEPHENS, General Atomics, San Diego, BRIAN DEBONO, DAVID HAAS, University of California, San Diego, SAM EDDINGER, HAIBO HAUNG, General Atomics, San Diego, GREG ANDREEV, University of California, San Diego — We present initial results from experiments performed to characterize Beryllium coated plastic capsules using a compact x-pinch pulser, which produces 80 kA current with a rise time of 40 ns. Various wire materials including tungsten, molybdenum and aluminum were used. X-pinch length and angle were varied to obtain maximum x-ray yield and photon energies. X-rays in 5-9 keV energy range were used for phase contrast radiography of ICF capsules. Results with plastic capsules (1 mm diameter, 20 micron thick wall) show a phase contrast effect at the edges of the capsule wall. The sharpness of the image reveals source size of less than 3 micron.

[1]This work is supported under GA contract NRG8686

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Date submitted: 27 Jul 2005 Electronic form version 1.4