

Abstract Submitted
for the DPP00 Meeting of
The American Physical Society

Sorting Category: 5.5.0 (Experimental)

Initial Results of Neutron Imaging Using Bubble Detectors on OMEGA¹ R.K. FISHER, R.B. STEVENS, General Atomics, L. DISDIER, J.L. BOURGADE, A. FEDOTOFF, CEA, P.A. JAAN-IMAGI, U.R. LLE, R.A. LERCHE, T.C. SANGSTER, LLNL — Bubble detectors, which can detect neutrons with a spatial resolution of 5 to 50 μ , revolutionize the design of coded aperture imaging systems and are the most promising approach to imaging NIF target plasmas with 5 μ spatial resolution in the target plane. Using bubble detectors will significantly reduce the required system magnification, allowing the aperture to be outside the target chamber exclusion zone and still allow practical target-to-detector distances. Initial tests are being done on OMEGA using gel bubble detectors placed behind a neutron aperture installed by CEA. Bubbles created by neutron interactions in gel detectors last indefinitely, so that the detector provides a time-integrated record of the spatial distribution of the incident neutrons. The initial test results on OMEGA are very encouraging, and the prospects for high-resolution imaging of NIF targets using bubble detectors appear excellent.

¹Research performed at the National Laser Users Facility of the University of Rochester Laboratory for Laser Energetics and supported by U.S. DOE Grant DE-FG03-00SF22019 and Contract W-7405-ENG-48.

Prefer Oral Session
Prefer Poster Session

R.K. Fisher
fisherr@fusion.gat.com
General Atomics

Date submitted: July 12, 2000

Electronic form version 1.4