Abstract Submitted
for the 4CF06 Meeting of
The American Physical Society

Velocity measurements of hohlraum-driven beryllium "flyer" plates T. TIERNEY, J. COBBLE, N. HOFFMAN, B. DEVOLDER, Los Alamos National Laboratory — In indirectly-driven fusion experiments, energy-coupling between a laser-driven cylindrical hohlraum and the fuel-containing ablator material governs the maximum attainable yield. In the case of the National Ignition Facility, a class of capsules uses copper-doped beryllium ablators containing deuterium-tritium fuel to absorb in excess of 100 kJ of soft x-rays and would hypothetically achieve fusion ignition. In these experiments, planar 0.9% copper-doped beryllium slabs are mounted on one axial end of a 1.6-mm diameter, 1.2-mm long cylindrical hohlraum. The hohlraum is driven with ∼4 kJ of laser energy to radiation temperatures near 150 eV with a 6-ns drive. Bulk hydrodynamic motion of the slab, induced by radiative drive, is measured using side-on x-ray imaging. The slabs' velocities provide estimates of the time-integrated energy received by the beryllium. We present the experimental design and initial results.

T. Tierney
Los Alamos National Laboratory

Date submitted: 21 Sep 2006 Electronic form version 1.4