

Abstract Submitted  
for the DPP14 Meeting of  
The American Physical Society

**Antipodal neutron time of flight (nToF) detectors more than double their diagnostic value<sup>1</sup>** JOSEPH KILKENNY, General Atomics, JAMES KNAUER, LLE, JOSEPH CAGGIANO, MARK ECKART, ROBERT HATARIK, DAVID MUNRO, DANIEL SAYRE, BRIAN SPEARS, LLNL — Moments of the neutron-velocity distribution give unique insights to the quality of an inertial confinement fusion (ICF) implosion. The three, 20m distance nToF detectors on the NIF are being augmented by adding an antipodal detector to each of them. Antipodal pairs of detectors increase the sampling of imploded DT ice but also allow an accurate measurement of the areal density of the odd modes of the compressed ice from the un-scattered yield ratio, and with the two measurements distinguishing center of mass drift velocity from the thermodynamic ion temperature.

<sup>1</sup>NNSA Contract Number DE-AC52-07NA27344.

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Date submitted: 11 Jul 2014

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