Abstract Submitted
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Determining hot spot motion using a multi line-of-sight nToF analysis[1] ROBERT HATARIK, RYAN NORA, BRIAN SPEARS, MARK ECKART, EDWARD HARTOUNI, GARY GRIM, ALASTAIR MOORE, DAVID SCHLOSSBERG, Lawrence Livermore National Laboratory — An important diagnostic value of a shot at the National Ignition Facility (NIF) is the resultant center-of mass motion of the imploding capsule as it contributes to the efficiency of converting LASER energy into plasma temperature. In the past the projection of this velocity onto a line-of-sight (LOS) for a given detector was determined by using a temperature model to determine the mean nergy of the emitted neutrons. With the addition of a fourth neutron time-of-flight LOS at the NIF, it is possible to determine a hot spot vector and mean velocity of the emitted neutron distribution. This entails analyzing all four LOS simultaneously and has the advantage of not relying on a temperature model. Results from recent NIF shots comparing this method with the traditional method will be presented.

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