

Abstract Submitted  
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**Fill Tube Dynamics in Inertial Confinement Fusion Implosions with High Density Carbon Ablators** KEVIN BAKER, CLIFF THOMAS, TOM DITTRICH, CHRIS WEBER, TOD WOODS, CHRIS MAUCHE, DAN CASEY, SHAHAB KHAN, MATTHIAS HOHENBERGER, BRIAN SPEARS, CHARLES YEAMANS, JOHN MOODY, ALASTAIR MOORE, NATHAN MEEZAN, BENJAMIN BACHMANN, ROBIN BENEDETTI, NIKO IZUMO, TAMMY MA, SABRINA NAGEL, ART PAK, Lawrence Livermore Natl Lab — High density carbon, HDC, ablator experiments performed on the National Ignition Facility typically have a feature seen in the hotspot x-ray self-emission which correlates with the position of the capsule's fill tube. This presentation focuses on one such shot which used an undoped HDC ablator with a 50/50 deuterium/tritium fill. This combination produced experimental hotspot images in which the limb brightening of the hotspot images could be seen in conjunction with the fill tube feature penetrating to the center of the hotspot and the indentation in the capsule about the fill tube. These experimental images will be presented along with analysis of the motion of the fill tube feature relative to the time-dependent hotspot diameter. Comparison to computer simulations and in particular what these simulations imply with regard to the level of m-band required in the codes to more accurately reproduce the time-dependent experimental images will also be presented. This work was performed under the auspices of the U.S. Department of Energy by Lawrence Livermore National Laboratory under Contract DE-AC52-07NA27344.

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