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### **NIF Convergent Ablator Performance Measurements**

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Measuring ablator performance around the time of peak implosion velocity is critical to assessing the progress towards ignition in inertial confinement fusion capsules. A back-lit radiography technique has been implemented on the National Ignition Facility to determine a suite of time-resolved ablator parameters from a series of gated x-ray images. Measurements on implosions driven by laser energies up to 1.4 MJ indicate that the velocity of the Ge-doped CH ablator is lower and the remaining mass is comparable to or higher than that given by integrated 2D simulations. The lower velocities and delayed radius versus time ablator trajectories are consistent with the later-than-expected x-ray peak emission times seen on these and other shots. Distinctly improved performance is observed when Ge was replaced with Si as the CH dopant. This work was performed in collaboration with the National Ignition Campaign Team. The work was performed under the auspices of the U.S. Department of Energy by Lawrence Livermore National Laboratory under Contract DE-AC52-07NA27344.