- A. B. Zylstra et al., Beryllium implosion experiments at high case-to-capsule ratio on the National Ignition Facility
- S. A. Yi et al., Quantifying design trade-offs of beryllium targets on NIF
- S. MacLaren et al., Relationship between symmetry and laser pulse shape in low-fill hohlraums at the National Ignition Facility
- G. Kyrala et al., Imaging and spectroscopy of copper dopant migration of indirectly driven Beryllium capsule implosion on the National Ignition Facility
- M. J. MacDonald et al., Spatially resolved x-ray fluorescence spectroscopy of beryllium capsule implosions on the NIF

Abstract Submitted
for the DPP17 Meeting of
The American Physical Society

Spatially resolved x-ray fluorescence spectroscopy of beryllium capsule implosions at the NIF[1] M. J. MACDONALD, University of California, Berkeley, D. T. BISHEL, Lawrence Livermore National Laboratory, A. M. SAUNDERS, University of California, Berkeley, H. A. SCOTT, Lawrence Livermore National Laboratory, G. KYRALA, J. KLINE, Los Alamos National Laboratory, S. MACLAREN, D. B. THORN, Lawrence Livermore National Laboratory, S. A. YI, A. B. ZYLSTRA, Los Alamos National Laboratory, R. W. FALCONE, University of California, Berkeley, T. DOEPPNER, Lawrence Livermore National Laboratory — Beryllium ablators used in indirectly driven inertial confinement fusion implosions are doped with copper to prevent preheat of the cryogenic hydrogen fuel. Here, we present analysis of spatially resolved copper K-α fluorescence spectra from the beryllium ablator layer. It has been shown that K-α fluorescence spectroscopy can be used to measure plasma conditions of partially ionized dopants in high energy density systems [1]. In these experiments, K-shell vacancies in the copper dopant are created by the hotspot emission at stagnation, resulting in K-shell fluorescence at bang time. Spatially resolved copper K-α emission spectra are compared to atomic kinetics and radiation code simulations to infer density and temperature profiles. [1] M. J. MacDonald et al, J. Appl. Phys. 120, 125901 (2016).

[1]This work was supported by the US DOE under grant No. DE-NA0001859, under the auspices of the US DOE by Lawrence Livermore National Laboratory under Contract No. DE-AC52-07NA27344, and by Los Alamos National Laboratory under contract DE-AC52-06NA52396.

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Date submitted: 14 Jul 2017 Electronic form version 1.4