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Recent improvements in opacity measurements on the National Ignition Facility[1] RF HEETER, YP OPACHICH, RA LONDON, CA IGLESIAS, LLNL, TS PERRY, HM JOHNS, ES DODD, NS KRASHENINNIKOVA, CJ FONTES, JP COLGAN, TA CARDENAS, TH DAY, I USOV, D VODNIK, TJ URBATSCH, MR DOUGLAS, ME SHERRILL, LANL, RS CRAXTON, A SHARMA, LLE, E DUTRA, J HEINMILLER, M WALLACE, NNSS, H HUANG, K SEQUOIA, GA, JE BAILEY, SNL — X-ray opacities of hot dense matter are essential to radiation-hydrodynamic models of stars, other astrophysical objects, inertial confinement fusion, and other high-energy-density experiments. Opacity experiments on the National Ignition Facility (NIF) seek to replicate and extend results from the Sandia Z facility, which often diverge from theory. Promising initial measurements on NIF at temperatures ˜150 eV and electron densities ˜$7x10^{21}/cm^3$ also revealed areas for improvement. Improvements in backlighting, spatial resolution and signal uniformity, and reduction of backgrounds will be summarized. Recent data from Al:Mg samples will be presented in this context.

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