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Hohlraum T_e Inferred from Au L-Shell Emission S.P. REGAN, R. EPSTEIN, D.D. MEYERHOFER, T.C. SANGSTER, Laboratory for Laser Energetics, U. of Rochester, M.J. MAY, M.B. SCHNEIDER, M.A. BARRIOS, J.D. MOODY, K.L. BAKER, L. BERZAK HOPKINS, G.V. BROWN, D. CALLAHAN, T. DOEPPNER, K.B. FOURNIER, D.E. HINKEL, O.S. JONES, R. KAUFFMAN, S. KHAN, J.D. KILKENNY, O.L. LANDEN, D.A. LIEDAHL, S.R. NAGEL, J.S. ROSS, V.A. SMALYUK, LLNL — Laser-ablation plasmas created at the inner wall of the hohlraum (Au bubble) and at the laser entrance hole (LEH) radiate L-shell emission from Ne-like to Co-like charge states of Au. A 1-D spatially resolved and time-integrated spectrum in the 6- to 16-keV range with $E/\mathrm{d}E = 100$ to 300 is recorded along the axis of the hohlraum. The Au L-shell spectral line shapes of the $2p_{3/2} - 3s$, $2p_{3/2} - 3d_{5/2}$, and $2p_{1/2} - 3d_{3/2}$ transitions are analyzed using an atomic physics code to infer the T_e of the radiating plasma. Preliminary results indicate the Au LEH plasma of a near-vacuum hohlraum has an inferred T_e of 5 to 6 keV, while a gas-filled hohlraum has a significantly lower T_e. A comparison of the Au L-shell spectra and the T_e sensitivity will be presented, along with the plan to measure the L-shell emission from the Au bubble. This material is based upon work supported by the Department Of Energy National Nuclear Security Administration under Award Number DE-NA0001944. Part of this work was performed under the auspices of the U.S. Department of Energy by LLNL under Contract DE-AC52-07NA27344.

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