

Abstract Submitted
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Photoionization of Ions of the Cerium Isonuclear Sequence in the Energy Range of 4d Excitations M. HABIBI, D.A. ESTEVES, R.A. PHANEUF, University of Nevada, Reno, A. AGUILAR, A.L.D. KILCOYNE, Advanced Light Source, LBNL, C. CISNEROS, UNAM, Cuernavaca, Mexico — Absolute measurements of photoionization cross sections for Ce^{q+} ions ($1 \leq q \leq 9$) were performed in the photon energy range 105 – 150 eV by merging beams of ions and monochromatized synchrotron radiation at the Advanced Light Source. Cross sections were measured for both single and double photoionization of Ce^+ , Ce^{2+} and Ce^{3+} . The photon energy resolution was 0.1 eV. The cross sections for initial charge states ($1 \leq q \leq 9$) are dominated by extremely broad resonance features due to 4d excitation-autoionization in this energy range, while that for Fe^{9+} is characterized by narrow resonances. The reactant ion beams comprised unknown admixtures of ions in their ground state and in long-lived metastable states, complicating their detailed interpretation. Research supported by the Division of Chemical Sciences, Geosciences and Biosciences of the U.S. Department of Energy.

Ronald Phaneuf
University of Nevada, Reno

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