

Abstract Submitted
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Photoionization of Cl -like K^{2+} and Ca^{3+} G.A. ALNA'WASHI, M. LU, M. HABIBI, D. ESTEVES, J. WANG, R.A. PHANEUF, University of Nevada, Reno, A.L.D. KILCOYNE, A. SCHLACHTER, ALS-LBNL, C. CISNEROS, UNAM-Cuernavaca, Mexico, B. MCLAUGHLIN, Queen's University, Belfast, U. K — Absolute photoionization cross-section measurements have been performed for K^{2+} and Ca^{3+} in the energy range from the ionization thresholds of their metastable state ($^2P_{1/2}^o$) and ground state ($^2P_{3/2}^o$) to the series limit of the dominant Rydberg series of resonances. The measurements were performed using the Ion-Photon Beam endstation on Beam line 10.0.1 of the Advanced Light Source (ALS) by merging an ion beam with a beam of synchrotron radiation from an undulator magnet. The data are compared to previous measurements for Cl -like Ar^+ [1]. Most of the resonances have been characterized by multiple Rydberg series of autoionizing states and assigned spectroscopically using quantum defect form of Rydberg formula. The measurements are compared with R-matrix calculations and with relativistic Hartree-Fock calculations of the energies and the oscillator strengths of the autoionizing transitions. [1]: A. M. Covington et al, Proc. XX11 ICPEAC, 48 (2001).

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