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Doubly Excited Resonances in the Photoionization Spectrum of Li^+: experiment and theory S.W.J. SCULLY, E.D. EMMONS, M.F. GHARAIBEH, R.A. PHANEUF, University of Nevado, Reno, D. LEITNER, A.S. SCHLACHTER, LBNL, A. MÜLLER, S. SCHIPPERS, Justus-Liebig-Universität Giessen, R. PÜTTNER, Freie Universität Berlin, M.S. LUBELL, City College of New York, I. ÁLVAREZ, C. CISNEROS, Centro de Ciencias Físicas, UNAM, C.P. BALLANCE, Rollins College, B.M. MCLAUGHLIN, QUB and ITAMP — Absolute cross-section measurements for resonant double photoexcitation of Li^+ ions followed by subsequent autoionization have been performed in the photon energy range from 148 eV, just below the (2s2p, $_2(0,1)_2^+$) resonance to 198 eV (the region of the double ionization threshold) at high resolution. The measurements have been made using the photon-ion merged-beam endstation at the Advanced Light Source, Lawrence Berkeley National Laboratory. The absolute cross section measurements when compared with theoretical results from the R-matrix plus pseudo-state (RMPS) method show excellent agreement. Comparisons made between theory and experiment for the Auger resonance energies, autoionization linewidth (Γ) and the Fano line profile index q for several members of the principal (2snp, $_2(0,1)_n^+$) and (3snp, $_3(1,1)_n^+$) Rydberg series found in the photoionization spectra for the $^1P^o$ symmetry show suitable accord. Further details will be presented at the meeting.

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