Abstract Submitted
for the DAMOP06 Meeting of
The American Physical Society

K-shell photoionization of Li-like carbon ions: experiment, theory and comparison with time-reversed photorecombination A. MÜLLER, S. SCHIPPERS, Justus-Liebig-Universität Giessen, R.A. PHANEUF, S.W.J. SCULLY, A. AGUILAR, E.D. EMMONS, M.F. GHARAIBEH, University of Nevado, Reno, J.D. BOZEK, A.S. SCHLACHTER, LBNL, G. HINOJOSA, C. CISNEROS, Centro de Ciencias Físicas, UNAM, B.M. MCLAUGHLIN, QUB and ITAMP — Absolute cross-sections for the K-shell photoionization of Li-like $C^{3+}(1s^2\,2s\ ^2S)$ ions were measured by employing the ion-photon merged-beams technique at the Advanced Light Source. The energy ranges 299.8–300.15 eV, 303.29–303.58 eV and 335.61–337.57 eV of the $[1s\,(2s\,2p)^3P]^2P$, $[1s\,(2s\,2p)^1P]^2P$ and $[(1s\,2s)^3S\ 3p]^2P$ resonances, respectively, were covered using resolving powers of up to 6000. The width of the $[1s\,(2s\,2p)^1P]^2P$ resonance was measured to be 27 ± 5 meV and compares favourably with a theoretical result of 25.5 meV obtained from the R-Matrix method. The present photoionization results are compared with the outcome of the photorecombination measurements by employing the principle of detailed balance. The agreement between both experimental approaches is within the experimental uncertainties. Further details will be presented at the meeting.

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Date submitted: 31 Jan 2006 Electronic form version 1.4