Abstract Submitted
for the DAMOP09 Meeting of
The American Physical Society

Inner-shell photoionization of atomic chlorine near the $2p^{-1}$ edge: a Breit-Pauli R-matrix calculation Z. FELFLI, Clark Atlanta University, USA, N.C. DEB, Queen's University of Belfast, UK, S.T. MANSON, Georgia State university, USA, A. HIBBERT, Queen's University of Belfast, UK, A.Z. MSEZANE, Clark Atlanta University, USA — An R-matrix calculation which takes into account relativistic effects via the Breit-Pauli (BP) operator is performed for photoionization cross sections of atomic Cl near the 2p threshold. The wavefunctions are constructed with orbitals generated from a careful large scale configuration interaction (CI) calculation with relativistic corrections using the CIV3 code of Hibbert [1] and Glass and Hibbert [2]. The results are contrasted with the calculation of Martins [3], which uses a CI with relativistic corrections, and compared with the most recent measurements [4]. [1] A. Hibbert, *Comput. Phys. Commun.* **9,** 141 (1975) [2] R. Glass and A. Hibbert, *Comput. Phys. Commun.* **16,** 19 (1978) [3] M. Martins, J. Phys. B **34**, 1321 (2001) [4] D. Lindle *et al* (private communication) Research supported by U.S. DOE, Division of Chemical Sciences, NSF and CAU CFNM, NSF-CREST Program. Computing facilities at Queen's University of Belfast, UK and of DOE Office of Science, NERSC are appreciated.

Z. Felfli
Clark Atlanta University, USA

Date submitted: 23 Jan 2009 Electronic form version 1.4