

Abstract Submitted  
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**Photoionization of Isonuclear Sequences** GAGAN B. PRADHAN, JOBIN JOSE, VOJISLAV RADOJEVIC<sup>1</sup>, PRANAWA C. DESHMUKH, Indian Institute of Technology - Madras, STEVEN T. MANSON, Georgia State University — Calculations of the photoionization of the 2s subshell of Ar, Ar<sup>+6</sup> and Ar<sup>+8</sup>, and Mg, Mg<sub>+2</sub> and Mg<sup>+8</sup> have been carried out using the relativistic-random-phase approximation with relaxation (RRPA-R). Based upon calculations omitting relaxation, it has been assumed that inner-shell cross sections are essentially unaltered, as a function of photon energy, by the removal of outer shell electrons [1,2]. The present results show that, when relaxation is considered, the removal of an outer shell electron can indeed affect an inner-shell main line (ionization without simultaneous excitation) cross section. This effect is particularly strong in the Ar isonuclear sequence where the relaxation of the 3p orbitals affects the Ar results compared to Ar<sup>+6</sup>. This work was supported by DST (India), DOE and NASA. [1] R. F. Reilman and S. T. Manson, *Ap. J. Supp.* **40**, 815 (1979) and reference therein. [2] G. Nasreen, S. T. Manson and P. C. Deshmukh, *Phys. Rev. A* **40**, 6091 (1989).

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