Abstract Submitted
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Photoelectron angular distributions along Ar and Ca isonuclear sequences[1] GAGAN B. PRADHAN, JOBIN JOSE, VOJISLAV RADOJEVIC', PRANAWA C. DESHMUKH, IIT-Madras, STEVEN T. MANSON, Georgia State University — The dipole angular distribution asymmetry parameter, β, for photoelectrons resulting from 2p photoionization of members of the Ar and Ca isonuclear sequences (Ar, Ar^{6+}, Ar^{8+}, Ca, Ca^{2+}, Ca^{8+}) has been studied using the relativistic random phase approximation (RRPA) [1] over a broad range of photon energy. In the absence of relaxation, it known that inner shell cross sections are essentially unchanged, as a function of photon energy, on the removal of outer shell electrons [2]. The situation is found to be different for angular distributions; the β parameter is not constant, as a function of photon energy, when outer electrons are removed. However, with increasing photon energy, the β's arising from the varying stages of ionization become essentially constant. The reason for this behavior is traced to the dependence of β upon the Coulomb phase shifts which are not constant as a function of photon energy. At the higher energies, the Coulomb phase becomes less important, resulting in the β's coalescing. [1] W. R. Johnson and C. D. Lin, Phys. Rev. A **20**, 964(1979). [2] G. Nasreen, S. T. Manson and P. C. Deshmukh, Phys. Rev. A **40**, 6091(1989).

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