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Deviation of β from 2.0 for the Kr and Xe $4s$ and $5s$ Photoelectrons at the $nd \rightarrow mp$ (n=3 for Kr, n=4 for Xe) Excitations[1] S. B. WHITFIELD, Dept. of Physics and Astronomy, University of Wisconin-Eau Claire, Eau Claire WI, 548702, R. WEHLITZ, University of Wisconsin, Synchrotron Radiation Center, Stoughton, WI 53589, P. C. DESHMUKH, Department of Physics, Indian Institute of Technology-Madras, Chennai 600036, India, S. T. MANSON, Department of Physics and Astronomy, Georgia State University, Atlanta, Georgia 30303 — In the absence of relativistic effects, the angular distributions, β, of s-subshell electrons in closed-shell atoms will be 2.0 independent of the energy of the ionizing photons. When relativistic effects are important, then deviations from this behavior can be expected and are generally more likely in the vicinity of Cooper minima, at high photon energies, or in the region of resonances [1]. We examine the latter case of the Kr $4s$ β values in the region of the $3d \rightarrow mp$ ($m \geq 5$) excitations and the Xe $5s$ β values in the region of the $4d \rightarrow mp$ ($m \geq 6$) excitations. We observe small but unmistakable variations of β from 2.0 at these resonances. To understand these results in more detail we have carried out relativistic random phase calculations (RRPA). Preliminary results clearly indicate deviations of β from 2.0 for these photolines, although the degree of variation is predicted to be larger than what is observed. We will present improved RRPA calculations as well relativistic multichannel quantum defect (RMQDT) calculations. [1] S. T. Manson and A. F. Starace, Rev. Mod. Phys. **54**, 389 (1982).

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