Abstract Submitted
for the DAMOP05 Meeting of
The American Physical Society

Study of spin-orbit resolved angular distribution components of Xe 5p. O. HEMMERS, UNLV, R. GUILLEMIN, UNLV, D. ROLLES, LBNL, A. WOLSKA, UNLV, S.W. YU, LLNL, D.W. LINDLE, UNLV, S.T. MANSON, GSU — The role of relativistic effects and interchannel coupling for spin-orbit resolved mainlines has been described successfully with the relativistic random phase approximation (RRPA) for photoemission experiments within the dipole approximation. Nondipole photoemission experiments near the Xe 4p thresholds hold a new challenge for theory especially for the Xe 5p photolines. Angular distribution parameters β and $\xi = 3\delta + \gamma$ for the xenon $5p_{1/2}$ and $5p_{3/2}$ photoelectrons have been measured at the Advanced Light Source in the 80–220 eV photonenergy range. The results are compared with RRPA calculations [1] and experimental data [2]. Even though both experimental data sets agree well with theory for the dipole parameter β both sets of experimental results show a fairly large disagreement with RRPA calculations [1] for the nondipole results. More interestingly, both experimental data sets do not agree with each other. This shows that there are still open questions that need to be addressed by experimenters and theorists. [1] W.R. Johnson and K.T. Cheng, Phys. Rev. A **63**, 022504 (2001). [2] R. Sankari, S. Ricz, A. Kover, M. Jurvansuu, D. Varga, J. Nikkinen, T. Ricsoka, H. Aksela, and S. Aksela Phys. Rev. A **69**, 012707 (2004).

Oliver Hemmers
UNLV

Date submitted: 28 Jan 2005 Electronic form version 1.4