

Abstract Submitted
for the GEC08 Meeting of
The American Physical Society

Electron-photon coincidence experiment in full scattering angle range LUKASZ KLOSOWSKI, MARIUSZ PIWINSKI, DARIUSZ DZICZEK, KATARZYNA PLESKACZ, STANISLAW CHWIROT, Nicolaus Copernicus University, Institute of Physics, Grudziadzka 5/7, 87-100 Torun, Poland — Electron impact coherence parameters (EICP) have been measured with coincidence technique for various collisional systems since 1970s. Large discrepancies occurring in various theoretical predictions could not be resolved because of lack of experimental data for large scattering angles. Experiments that provide data for the largest scattering angles have not been carried out for seemingly simple reason – finite dimensions of electron beam sources and energy analyzers. Such measurements are possible if electron trajectories are suitably modified by magnetic field (Rev. Sci. Instrum. 67 (1996) 2372). It has been also shown recently that the magnetic angle changer (MAC) could be used in EICP measurements (Meas. Sci. Technol. 18 (2007) 3801, J. Phys. B: At. Mol. Opt. Phys. 41 (2008) 055202). The principles of MAC operation and the design of the device used in coincidence experiment are presented together with new experimental data on EICPs for 100 eV e-He 2^1P_1 impact excitation for full scattering angle range.

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Date submitted: 10 Jun 2008

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