Contribution ID: **74** Type: **poster**

Update on the detection system for forward emitted XUV photons from relativistic ion beams

Monday, 19 September 2016 18:00 (2 hours)

Highly charged heavy ions provide a unique possibility to test atomic structure calculations. We would like to study effects of electron-electron correlations in Be-like krypton via a laser spectroscopy measurement of the fine-structure transition from the metastable 3P0 state. For this purpose the ions are stored at β=0.69 in the Experimental Storage Ring (ESR) where the transition to the 3P1 state is excited by an anticollinear laser beam, followed by the almost immediate decay to the ground state by emission of λ=17 nm XUV photons.
To collect the forward emitted photons the Institut für Kernphysik in Münster developed a system for in-vacuum detection of XUV photons in the wavelength range from <10 nm up to about 250 nm. Therefore a cathode plate with a slit for the ions is moved into the beam. XUV photons hitting the plate produce mostly low energetic secondary electrons. These electrons are guided electromagnetically onto an in-vacuum MCP detector. In a test beam time at the ESR with 12C3+, the 2s1/2 −> 2p1/2 transition at λ0≈155 nm was investigated using the XUV detection system. First results and conclusions with regard to the upcoming experiment will be presented. This work is supported by BMBF under contract number 05P12PMFAE.

Collaboration

SPARC

Primary author: WINZEN, Daniel (Institut für Kernphysik, WWU Münster)

Co-authors: Mr BUß, Axel (Westfälische-Wilhelms-Universität); Mr EGELKAMP, Christian (Westfälische Wilhelm-Universität Münster); Prof. WEINHEIMER, Christian (Institut für Kernphysik, University of Münster); Mr KIEFER, Daniel (PhD Student); Dr WINTERS, Danyal (GSI, Darmstadt); Mr WANG, Hanbing (Institute of Modern Physics Chinese Academy of Sciences); Mr ORTJOHANN, Hans-Werner (Institut für Kernphysik, Uni Münster); Mr ULLMANN, Johannes (TU Darmstadt, IKP); Mr VOLLBRECHT, Jonas (Westfälische Wilhelms-Universität Münster); EIDAM, Lewin (GSI Darmstadt / TU Darmstadt); Mr LÖSER, Markus (Helmholtz-Zentrum Dresden-Rossendorf); Dr SIEBOLD, Mathias (Helmholtz-Zentrum Dresden-Rossendorf); Dr BUSSMANN, Michael (Helmholtz-Zentrum Dresden - Rossendorf); Dr SANCHEZ ALARCON, Rodolfo Marcelo (GSI, Darmstadt); Mr KLAMMES, Sebastian (TU Darmstadt); KÜHL, Thomas (GSI, Darmstadt); STÖHLKER, Thomas (GSI, Darmstadt); Prof. WALTHER, Thomas (TU Darmstadt); Dr HANNEN, Volker (Institut für Kernphysik, Uni Münster); Prof. NOERTERSHAEUSER, Wilfried (TU Darmstadt); Prof. MA, Xinwen (Institute of Modern Physics, Chinese Academy of Sciences); Mr HUANG, Zhongkui (Institute of Modern Physics, Chinese Academy of Sciences;)

Presenter: WINZEN, Daniel (Institut für Kernphysik, WWU Münster)

Session Classification: Poster Session and Coffee