



Contribution ID: 64

Type: **Parallel Contribution**

The ELISe electron rare isotope scattering experiment - status and perspectives

Tuesday, 11 October 2011 15:20 (25 minutes)

Haik Simon for the ELISe collaboration

At the New Experimental Storage Ring (NESR) at the FAIR facility an intersecting electron ion ring (eA collider, [1]) will allow scattering electrons with an energy of 125-500 MeV off exotic nuclei. The eA collider will enable for the first time to perform elastic, inelastic and quasielastic electron scattering off shortlived radioactive isotopes [2]. Charge distributions, transition form factors in giant resonance or electrofission experiments and spectral functions can be measured with a clean electromagnetic probe. The collider kinematics has the advantage that it will be possible to detect electrons and target like ejectile in coincidence. One of the most challenging aspects in this context is the design of a high-resolution electron spectrometer [3,4] with large acceptance adapted to the specific demands of an in-ring experiment. The impact of the worked out newest design options on the physics programme of the ELISe experiment will be discussed.

[1] NUSTAR/ELISe - Baseline Technical Report (2006)

[2] The electron-ion scattering experiment ELISe at the International Facility for Antiproton and Ion Research (FAIR)-A conceptual design study

Nucl. Inst. Meth. A637 (2011) 60-76

[doi:10.1016/j.nima.2010.12.246]

[3] A novel spectrometer for studying exotic nuclei with the electron/ion collider ELISe

Nucl. Inst. Meth. A640 (2011) 123-132

[doi:10.1016/j.nima.2011.02.025]

[4] Constant gap spectrometer design for the Electron/Ion Collider ELISe

To be published, Nucl. Inst. Meth. A

Primary author: Dr SIMON, Haik (GSI Helmholtzzentrum für Schwerionenforschung GmbH)

Presenter: Dr SIMON, Haik (GSI Helmholtzzentrum für Schwerionenforschung GmbH)

Session Classification: Future Facilities and detectors I

Track Classification: Future facilities and Detectors