Contribution ID: **9** Type: **not specified**

High-resolution electron-ion collision spectroscopy of beryllium-like heavy ions in CRYRING@ESR

Wednesday, June 1, 2022 3:50 PM (5 minutes)

The feasibility of high-resolution electron-ion collision spectroscopy at CRYRING@ESR of few-electron highly-charged ions from the GSI chain of accelerators has been demonstrated in a previous beam time (E131) in March 2021. In particular, it was shown that the electron-energy spread at the CRYRING electron cooler is indeed as low as expected. Building on this success, our collaboration will propose new spectroscopic measurements with highly charged heavy ions that feature recombination resonances at energies below 10 eV. Examples for such ions are Be-like Sb47+, Xe50+, Sm58+, Ir73+, Au75+, and U88+. For kinematic reasons the experimental resolving power and, thus, the experimental accuracy are highest at such low electron-ion collision energies. The expected results will allow one to sensitively probe higher-order contributions to quantum-electrodynamical (QED) calculation of binding energies in strong fields.

Primary author: SCHIPPERS, Stefan (JLU Giessen)

Presenter: SCHIPPERS, Stefan (JLU Giessen)

Session Classification: Cryring@ESR