

Abstract Submitted
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Few Body Quantum Dynamics of high-Z Ions studied at the Future Relativistic HESR Storage Ring SIEGBERT HAGMANN, THOMAS STOEHLKER, YURI LITVINOV, CHRISTOPHOR KOZHUHAROV, PIERRE-MICHEL HILLENBRAND, MICHAEL LESTINSKY, GSI Darmstadt, DIETER SCHNEIDER, Lawrence Livermore National Laboratory, KURT STIEBING, Inst. Fuer Kernphysik Univ. Frankfurt, GSI DARMSTADT TEAM, INST F. KERNPHYSIK UNIV FRANKFURT TEAM, HELMHOLTZ INSTITUT JENA TEAM, PHYSIKAL. INSTITUT UNIV. JENA TEAM, LAWRENCE LIVERMORE NATIONAL LABORATORY TEAM — At the FAIR facility for antiprotons and ion research the high energy storage ring HESR, originally conceived for experiments using antiprotons, will be configured to also provide highly-charged heavy ions up to beam energies corresponding to $\gamma=5$. This opens a wealth of opportunities for in-ring atomic physics experiments on few- body quantum dynamics ranging from e.g. dynamics of various e^+e^- pair creation processes to quasi-photoionisation of inner shells of the highest-Z ions. We will discuss various in-ring spectrometers permitting characterization of the pertaining fundamental processes in a kinematically complete fashion.

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