

Precision Hadron Physics at MESA

Friday, June 14, 2019 10:10 AM (35 minutes)

At Johannes Gutenberg University of Mainz, the new electron accelerator MESA (Mainz Energy-Recovering Superconducting Accelerator) for a new generation of fixed-target experiments, is currently under construction. In this talk we report on the status and the science case of MAGIX, which will be operated as an internal target experiment during the energy-recovery operation mode of MESA. The detector will consist of two high-resolution spectrometers.

Key experiments to be performed at MAGIX range from the measurement of electromagnetic form factors of the nucleon (proton radius puzzle) and of light nuclei to searches for low-mass particles of the dark sector. Furthermore, we also discuss the possibilities for a beam dump experiment at MESA, which opens the avenue for competitive searches for light dark matter particles.

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Session Classification: Plenary Session 1

Track Classification: Facilities and future projects