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Search for Light Dark Matter with the MESA Accelerator

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At the Institute for Nuclear Physics of the Johannes Gutenberg University in Mainz, the construction of the MESA facility has started. At its core there is a new superconducting energy-recovery linac which will provide intense electron beams for precision experiments in subnuclear physics. An important part of the MESA physics program consists of the search for a "dark sector" which is a candidate explanation for the longstanding dark matter problem. This talk will highlight the MESA dark sector program and in particular two experiments will be described. The first one is called MAGIX and it is a two-spectrometer set-up employing an internal gas-jet target installed on a recirculation arc of MESA. The second one is a beam-dump experiment for directly detecting dark matter particles. The experiments are in the R&D phase and the current status and future prospects will be presented.

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