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Spectrometer Systems for TSR@ISOLDE

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The advent of HIE-ISOLDE with high-intensity radioactive beams at energies of ~10 MeV per nucleon and the transfer of the Test Storage Ring (TSR) from Heidelberg to ISOLDE will open up new opportunities for precision studies of exotic nuclei [1]. New spectrometer systems are being designed and developed to exploit these capabilities, including a silicon detector system to be used in-ring with gas-jet targets for lighter beam species and an external spectrometer for heavier beams that will be cooled and then extracted from the TSR. The external spectrometer, which will operate on the same principle as the HELIOS device at Argonne National Laboratory [2], is also intended for use with beams directly from HIE-ISOLDE before the TSR is installed. This presentation will provide an overview of these spectrometer systems and an update on their current status.

[1] M. Grieser et al., European Physical Journal Special Topics 207 (2012) 1.

[2] J.C. Lighthall et al., Nuclear Instruments & Methods in Physics Research A622 (2010) 97.

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