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Polarized beam experiments with polarized internal storage cell targets at COSY

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The construction of the PAX installation was inspired by the idea to make a beam of polarized antiprotons available for future experiments with stored antiproton beams. A spin filtering experiment with internal polarized proton storage cell target was realized using the PAX low-beta installation at COSY. The results of this measurement are in perfect agreement with the FILTEX experiment. Spin filtering is a viable method to produce a stored beam of polarized antiprotons. Another experiment which can be pursued using the PAX installation is the test of Time Reversal Invariance at COSY (TRIC). The goal of the TRIC experiment is to improve the present upper limit on violation of the T-odd P-even interaction by an order of magnitude using a genuine null observable available in a double polarized pd scattering. In this presentation the necessary steps in the accelerator setup for these type of internal storage cell target experiments will be discussed. This includes the particle optical requirements that need to be met and the necessary steps in the machine preparation as well as the requirements for storage, acceleration and polarimetry of polarized proton beams.

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