

Test of Time-Reversal Invariance at COSY (TRIC)

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At the Cooler Synchrotron COSY a novel (P-even, T-odd) null test of time-reversal invariance to an accuracy of 10^{-6} is planned as an internal target transmission experiment. The parity conserving time-reversal violating observable is the total cross-section asymmetry $A_{y,xz}$. This quantity is measured using a polarized proton beam with an energy of 135 MeV and an internal tensor polarized deuteron target from the PAX atomic beam source. The reaction rate shall be measured by means of a beam current transformer (BCT) or an integrated beam transformer (ICT). Thus, the cooler ring serves as ideal forward spectrometer, as a detector, and an accelerator.

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