

Test of Time-Reversal Invariance at COSY (TRIC)

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At the Cooler Synchrotron COSY a novel (P-even, T-odd) true null test of time-reversal invariance is planned as an internal target transmission experiment, which is not sensitive to final state interactions. The parity conserving time-reversal violating observable, the total cross-section asymmetry $A_{y,xz}$, will be measured to an accuracy of 10^{-6} . This quantity is determined using a 135 MeV polarized proton beam and an internal tensor polarized deuteron target from the PAX atomic beam source. The reaction rate shall be measured by means of an integrated beam transformer (ICT). Thus, the cooler ring serves as ideal forward spectrometer, as a detector, and an accelerator.

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