

Contribution submission to the conference Mainz 2022

Pellet target development for an EDM measurements at COSY — ●OTARI JAVAKHISHVILI for the JEDI-Collaboration —
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The JEDI (Jülich Electric Dipole moment Investigation) collaboration in Jülich is conducting a set of experiments at COSY, aiming to develop precise equipment and experimental techniques to measure the EDMs of charged particles. One of the key elements of these experiments is the new modular JEDI polarimeter with a special target system. In the current configuration, horizontal and vertical block targets are used in the polarimeter. Targets are mounted on stepper linear actuators and dedicated hardware and software are used to control target movements. The target control system is EPICS based, it can access accelerator and detector data and use them as feedback for automatic target movement or finding proper target position in the beam. The system is controlled by a user-friendly GUI. Also, it has software and hardware interlock systems. This system was successfully tested in the last beamtime. In addition, we are working on a special target system, which will allow to oscillate pellet through the beam. The frequency and speed of oscillation must be variable to achieve the desired effective target density. The monitoring system must be developed, including precise triggering, track reconstruction, and data synchronization units, this allows us to synchronize data of target with other systems in the detector. In this talk achievements and experimental results will be summarized and ongoing activities towards dedicated ballistic pellet target development presented.

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