

Contribution submission to the conference Bonn 2020

Pellet target development for an EDM measurements at COSY — ●OTARI JAVAKHISHVILI for the JEDI-Collaboration — Forschungszentrum Jülich GmbH

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 polarimeter. Targets are mounted on stepper linear actuators and dedicated hardware and software are used to control target movements. Target control system is EPICS based, it can access accelerator and detector data and use them as a feedback for automatic target movement or finding proper target position in beam. The system is controlled by user friendly GUI. Also it has software and hardware interlock systems. This system was successfully tested in last beam time. In addition, we are working on a special target system, which will allow to oscillate pellet through the beam. Frequency and speed of oscillation must be variable to achieve desired effective target density. Monitoring system must be developed, including precise triggering, track reconstruction and data synchronization units, this allow us to synchronize data of target with other systems in 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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