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Development of High Precision Polarimeter for the charged particle EDM Experiment

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The **JEDI** (Jülich Electric Dipole moment Investigations) collaboration performs a set of experiments at the COSY storage ring in Jülich, within the R&D phase to search for the Electric Dipole Moments (EDM) of charged particles.
A measurement of proton and deuteron EDMs is a sensitive probe of yet unknown CP violation.
The method of charged particle EDM search will exploit stored polarized beams and observe a minuscule rotation of the polarization axis as a function of time due to the interaction of a finite EDM with large electric fields.
The key challenge is the provision of a sensitive and efficient method to determine the tiny change of the beam polarization.
The elastic scattering of the polarized beam particles off target with highest analyzing power will provide the polarimetry reaction.

The current status of a dedicated high precision polarimeter concepts will be overviewed.
To fulfill specifications, a fast, dense, high resolution (energy and time), and the radioactive hard novel scintillating material
is chosen.
The LYSO crystals are supposed to be the best candidate for this type of detector system.
Also, we have designed a new kind of LYSO coupled to the Silicon PM, very compact modular system, which is under intensive tests right now.
In this contribution, results from last experiments with the deuteron and proton (polarized and unpolarized) beams of five different energies up to 300 MeV will be presented.

Primary author: KESHELASHVILI, Irakli (Forschungszentrum Jülich Gmbh Central Institute of Engineering Electronics and Analytics ZEA-2 - Electronic Systems)

Co-authors: Dr MCHEDLISHVILI, David (HEPI, TSU);   Mr MUELLER, Fabian (Forschungszentrum Juelich Gmbh)

Presenter: KESHELASHVILI, Irakli (Forschungszentrum Jülich Gmbh Central Institute of Engineering Electronics and Analytics ZEA-2 - Electronic Systems)

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