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Development of LYSO detector modules for an EDM polarimeter at COSY — •Dito Shergelashvili for the JEDI-Collaboration — Ivane Javakhishvili Tbilisi State University, Chavchavadze ave. 1, Tbilisi 0128, Georgia

The JEDI collaboration (Jülich Electric Dipole moment Investigations) aims to measure the permanent electric dipole moments (EDMs) of charged hadrons (proton, deuteron) in storage rings, which offers the possibility to measure EDMs of charged particles by ob- serving the influence of the EDM on the spin motion. The Cooler Synchrotron COSY at the Forschungszentrum Juelich provides polarized protons and deuterons up to a momentum of 3.7 GeV/c and is thus an ideal machine for development and commissioning of the nec- essary technology. The essential point would observe a tiny change of beam polarization over an extended period of time.

For the EDM measurements, a dedicated high precision polarimeter is required. To fulfill specifications, a fast, dense, high resolution (energy and time), and the radioactive hard novel crystal scintillating material is required. For that purpose, several detector modules, built from different types of LYSO crystals and light sensors (PMTs and SiPM arrays), have been tested at COSY with a polarized deuteron (proton) beam with different energies from 100 MeV up to 270 MeV. In this talk, the preliminary results of these measurements and accumulated experience of the module development will be presented.

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