Contribution ID: **4** Type: **not specified**

Development of a Dedicated Precision Polarimeter for Charged Particle EDM searches at COSY

Tuesday, 24 September 2019 11:40 (20 minutes)

The international JEDI (Jülich Electric Dipole moment Investigation) collaboration is preparing a first-ever direct measurement of the deuteron Electric Dipole Moment (EDM), using the COSY storage ring at Forschungszentrum Jülich (Germany).
A new polarimeter is required to detect the very slow and minuscule polarization change with time: starting in 2016, we have designed, built and commissioned a new modular type storage ring EDM polarimeter based on LYSO inorganic scintillator crystals. The polarimeter concept exploits LYSO modules (3x3x8 cm3), individually coupled to modern large area SiPM arrays which are operating at low voltage.
The detector system and its vacuum system have radial symmetry and a thin exit window, making the polarimeter very efficient for online up-down and left-right asymmetry measurements.
After several tests at the external COSY beam, we have recently installed the complete system in the COSY ring for use with internal beams. We are planning to commission the detector at various polarized beam conditions together with the WASA polarimeter. After that, it will be employed as the polarimeter for JEDI and possibly other users.
In this talk, I will summarize the achievements of our group and discuss the latest results.

Summary

Primary authors: KESHELASHVILI, Irakli (Forschungszentrum Juelich GmbH); Dr MUELLER, Fabian (Forschungszentrum Juelich); Dr MCHEDLISHVILI, David (SMART|EDM Lab, HEPI Tbilisi State University); Mr JAVAKHISHVILI, Otari (Forschungszentrum Juelich, Agricultural University of Georgia); Mr SHERGELASHVILI, Dito (Tbilisi State University)

Presenter: KESHELASHVILI, Irakli (Forschungszentrum Juelich GmbH)

Session Classification: Polarimetry

Track Classification: Polarimetry