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Measurement of Electric Dipole Moments of Charged Particles at Storage Rings — ●VOLKER HEJNY for the JEDI-Collaboration — Institut für Kernphysik, Forschungszentrum Jülich, Germany

Electric Dipole Moments (EDM) of elementary particles are considered to be one of the most powerful tools to investigate CP violation beyond the Standard Model and to find an explanation for the dominance of matter over antimatter in our universe. Up to now experiments concentrated on neutral systems (neutrons, atoms, molecules). Storage rings offer the possibility to measure EDMs of charged particles by observing the influence of the EDM on the spin motion.

The Cooler Synchrotron COSY at the Forschungszentrum Jülich provides polarized protons and deuterons up to a momentum of 3.7 GeV/c and, thus, is an ideal starting point for such an experimental program. The JEDI (Jülich Electric Dipole moment Investigations) Collaboration has been formed to exploit the COSY facility to demonstrate the feasibility of such a measurement and to perform all the necessary R&D towards the design of a dedicated storage ring.

In this talk, the current status of the project will be presented and recent achievements together with the future plans will be discussed.

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