

## Contribution submission to the conference Dresden 2020

**Simulation of a Prototype Proton EDM Storage Ring** —  
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The matter-antimatter asymmetry might be understood by investigating the EDM (Electric Dipole Moment) of elementary charged particles. A permanent EDM of a subatomic particle violates time reversal and parity symmetry at the same time and would be a strong indication for physics beyond the Standard Model. The JEDI-Collaboration (Jülich Electric Dipole moment Investigations) in Jülich is preparing a direct EDM measurement for protons and deuterons: first at the storage ring COSY (COoler SYnchrotron) and later at a dedicated storage ring. The prototype proton EDM storage ring is an intermediate step before building the final storage ring to demonstrate sufficient beam lifetime and spin coherence time in a pure electrostatic ring as well as in storage ring with combined electric and magnetic bending elements. In order to study the effect of E-B-detectors on the orbit and the spin motion the software library Bmad is used. First results of optics and spin simulations towards the prototype ring will be discussed.

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