

## Contribution submission to the conference Darmstadt 2016

**Spin simulations for the final EDM storage ring** —  
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A hint for physics beyond the Standard Model would be a non-vanishing electric dipole moment (EDM) of subatomic particles. The JEDI (Jülich Electric Dipole moment Investigations) collaboration has the goal to investigate the existence of a permanent EDM of deuterons with a precision up to  $10^{-29}$  ecm level. This experiment requires the construction of a dedicated storage ring. A permanent EDM would lead to a torque of the spin motion in the vertical direction which leads to a vertical polarization build-up.

The program COSY Infinity is used for spin tracking simulations investigating options for a final EDM storage ring lattice design. Furthermore the impact of gradient fields on the spin motion in an EDM storage ring has to be taken into account. In this talk first results of spin tracking simulations and estimates for the effect of gradient fields are presented.

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