

## Contribution submission to the conference Heidelberg 2015

**Systematic Error Investigation of the Spin Tune Analysis for an EDM Measurement at COSY** — ●FABIAN TRINKEL for the JEDI-Collaboration — Institut für Kernphysik, Forschungszentrum Jülich, Wilhelm-Johnen-Straße 52428 Jülich

So far there have been no direct Electric Dipole Moment (EDM) measurements for charged hadrons. The goal of the JEDI collaboration (Jülich Electric Dipole moment Investigations) is to measure the EDM of charged particles ( $p$ ,  $d$  and  ${}^3He$ ). A first step on the way for an EDM measurement is the investigation of systematic errors at the storage ring COSY (COoler SYnchrotron). One part for these studies examines the spin tune  $\nu_s$  of a horizontally polarized deuteron beam. The spin tune is defined as the number of spin rotations in the horizontal plane relative to the particle turns. To first approximation it is given by  $|\nu_s| \approx \gamma G$ , where  $\gamma$  is the Lorentz factor and  $G$  is the anomalous magnetic moment of the particle. The spin precession is observed using elastic deuteron carbon scattering. A measurement of the spin tune is performed for a polarized deuteron beam with a precision of  $10^{-10}$  at COSY. The measurement and possible systematic errors due to acceptance and polarization variation will be discussed.

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