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Precursor experiments to search for permanent electric dipole moments (EDMs) of protons and deuterons at COSY

Friday, 14 October 2011 09:00 (35 minutes)

COSY with its polarized beams, including new hardware (like a low-beta section and a Siberian snake), and the available target and detector systems is very close to function not only as a test-bench for the ongoing EDM related investigations on polarimetry, spin coherence time, etc., but it could be also utilized as is for precursor experiments, providing a directly measured solid number (i.e., systematic errors under control) for the upper limit of the EDM of protons and/or deuterons. In order to pursue high precision EDM studies, eventually leading to a new dedicated machine at Juelich, a new collaboration called JEDI (Juelich Electric Dipole moment Investigations) is presently being set up. The talk will present a number of ideas that could be carried out at COSY in terms of such precursor experiments.

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