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# Design of a Prototype EDM Storage Ring

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This contribution summarizes the efforts in the frame of the CPEDM consortium to design a prototype EDM (Electric Dipole Moment) storage ring, with predominantly electric bending.
Operated at proton beam energies between 30 and 50 MeV, the main purpose of this ring will be to carry out R&D work related to a final 233 MeV frozen-spin proton EDM ring. After demonstrating satisfactory beam lifetime and spin coherence time in the electrostatic ring, clockwise and counter-clockwise beam operation, beam spin control, beam-based element alignment, and methods for reducing systematic errors in EDM measurements will be investigated. At these reduced proton beam energies, the (weak) superimposed magnetic field required to freeze the proton spins can be provided by powering the iron-free (hysteresis-free) "cosine-theta" coils built into the ring design. This will allow the development of EDM measurement techniques and permit the first direct precision measurement of the proton EDM.

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