

The 24th International Spin Symposium

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EDM in Small Rings

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We will present a new design of highly specialized small storage rings for low energy polarized electron beams. The new design is based on the transparent spin methodology that cancels the spin precession due to the magnetic dipole moment at any energy while allowing for spin precession induced by the fundamental physics of interest to accumulate. The buildup of the vertical component of beam polarization can be measured using standard Mott polarimetry that is optimal at low electron energy. These rings can be used to measure the permanent electric dipole moment of the electron, relevant to CP violation and matter-antimatter asymmetry in the universe, and to search for dark energy and ultra-light dark matter.

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