

Challenges and opportunities in future searches for the electric dipole moment of the neutron

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The existence of a nonzero permanent electric dipole moment of the neutron would reveal a new source of CP violation and might shed light on the origin of the matter/antimatter asymmetry of the Universe. The sensitivity of future experiments using intense sources of neutrons will probe new physics well beyond the TeV scale.

A discovery of an nEDM or a further improved limit will markedly and persistently shape future models of particle physics beyond the current standard model.

In my talk I will report on the status of groups from around the world all passionately competing to improve the current experimental sensitivity of 1.1×10^{-26} ecm [C. Abel et al., PRL124(2020)081803] to at least 1×10^{-27} ecm within the next decade.

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