

How the minuscule contributes to the big picture: the neutron electric dipole moment

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A permanent electric dipole moment (EDM) of a fundamental particle violates both parity (P) and time reversal symmetry (T) and therefore combined charge and parity reversal symmetry (CP). It is a very promising place to search for physics beyond the Standard Model. One reason for this is that the Standard Model background is so small. Supersymmetric theories, for example, are already constrained by existing EDM limits. In the five decade history of these experiments numerous models have been ruled out. Searches for hadronic sector electric dipole moments are particularly sensitive to CP-violation that might contribute to generation of a matter/anti-matter asymmetry at the electroweak symmetry breaking transition. The presentation will introduce the measurement principle and major current and planned efforts to reduce the present nEDM limit of $1e-26$ ecm with a special focus on the TRIUMF project.

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