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Searching for the Electric Dipole Moment of the Neutron, the Holy Grail of Precision Measurements

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The Electric Dipole Moment (EDM) of the neutron is a probe for the violations in the combined Charge-conjugate and Parity reversal symmetry (CP). Many new theories beyond the Standard Model, which aim to unify the fundamental forces and solve the problem of Baryon Asymmetry of the Universe, also predict sizable EDM just lurking around the corner for discovery. Experimental search for the neutron EDM, since Ramsey's initial attempt in the 1950s, has been making steady improvements in its sensitivity. However, so far no experiment has reported an EDM. In this talk, I will discuss the techniques and challenges of the current generation of EDM experiments.

Presenter: LIU, Chen-Yu (Indiana University)

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