

Neutron EDM searches

Friday 14 April 2023 15:00 (30 minutes)

Despite being electrically neutral, the neutron can exhibit an electric dipole moment if its center of charge offsets from its center of mass. The resulting static electric dipole moment (EDM) probes new CP-violating physics at energy scales well beyond those reached directly at high-energy colliders. The latest experimental limit on the nEDM, reported by the PSI group, is $(0.0 \pm 1.1_{\text{stat}} \pm 0.2_{\text{sys}}) \times 10^{-26}$ e.cm [PRL124, 081803 (2020)]; this was achieved using an NMR measurement on polarized ultracold neutrons with a frequency precision of < 2 ppb. In this talk, I will report on the progress of ongoing efforts to continue pushing the nEDM sensitivity over the next decade.

Presenter: Prof. LIU, Chen-Yu (University of Illinois)