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INPP Seminar | Searching for Physics Beyond the Standard Model with Lepton Dipole Moments, Oct. 8

October 1, 2019

Categories: Events

Tags: Institute of Nuclear and Particle Physics, Martin Hoferichter, NPP Seminar, physics and astronomy events

The Institute of Nuclear and Particle Physics (INPP) presents [Martin Hoferichter](#) of University of Washington, on “Searching for Physics Beyond the Standard Model with Lepton Dipole Moments”, on Tuesday, Oct. 8, at 4 p.m. in Edwards Accelerator Lab, Roger W. Finlay Conference Room.



Martin Hoferichter

Abstract: The longstanding discrepancy between measurement and Standard Model prediction for the anomalous magnetic moment $(g-2)/2$ of the muon, as well as the recently emerging tension in the electron $g-2$, could be considered indications that physics beyond the Standard Model is lurking in lepton dipole moments. To decide this issue conclusively, both improved measurements and theoretical predictions are required. In view of the expected improvement by a factor of 4 at the Fermilab muon $g-2$ experiment, this presents a challenge to theory, with current uncertainties almost exclusively dominated by hadronic corrections to about equal parts from hadronic vacuum polarization (HVP) and hadronic light-by-light scattering (HLbL).

In the talk, I will give an overview of the present status of the magnetic dipole moments, possible connections with electric dipole moments, as well as recent progress in improving both HVP and HLbL based on dispersion relations.