Colloquium

Department of Physics, Temple University

From yeV to PeV: Searching for the Neutron Electric Dipole Moment

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Abstract

Measurements of the neutron electric dipole moment (EDM) over the past sixty years have pushed its upper limit to ever lower levels. During that time, the absence of an observable EDM has limited numerous theories of new subatomic physics. At this point, the expectation is that charge conjugation and parity (CP) violation beyond the standard model, perhaps manifest in a neutron EDM, is required to explain the baryon asymmetry of the universe (much more matter than anti-matter). Particular beyond-the-standard-model theories, such as supersymmetry, tend to predict as much CP violation as current EDM limits allow. A new round of experiments is planned to provide neutron EDM sensitivities more than an order of magnitude below the current limit. I will describe the measurement and a couple of the interesting experimental challenges.

Monday, March 7, 2016 at 3:00pm
SERC, Room 116
Refreshments served at 2:45pm