

Is the Electron Round? TeV Beyond Standard Model tests on a Tabletop

Gerald Gabrielse

Northwestern University

January 30, 2019

4:00 p.m. - Wilson Hall, One West

The standard model of particle physics is both the great triumph and the great frustration of modern physics. It can make predictions accurate to 1 part in 10^{12} for the electron magnetic moment, while being unable to explain basic features of the universe. The standard model predicts that the electron charge is not quite round, i.e. it has an electric dipole moment, but that this moment is far too small to measure. Most other models, like supersymmetry models, predict an electric dipole moment that is within experimental reach. The Advanced Cold Molecule EDM (ACME) Collaboration has just reported a new measurement of the electron electric dipole moment that has a sensitivity increased by an order of magnitude.