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Fundamental symmetry tests with ultracold neutrons

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Ultracold neutrons (UCN) are neutrons with kinetic energies so low (less than 200–300 nano-eV) that they can be “bottled” with material surfaces or magnetic fields of a few Tesla. In this talk I will discuss the application of UCN to high-precision tests of the fundamental symmetries underlying the standard electroweak theory. I will highlight ongoing experiments and also provide a preview of future physics opportunities utilizing UCN in the Southeast, particularly those to be staged at the Spallation Neutron Source.