

Abstract Submitted
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Scattering Corrections in Neutron β -decay Angular Correlation Measurements ROBERT PATTIE, North Carolina State University, UCNA COLLABORATION — Measurements of angular correlations in neutron β -decay, such as the electron momentum-neutron spin correlation A , require precise knowledge of the energy and momentum of the emitted electron and or proton. However, accurate determination of these observables is often limited by our understanding of scattering from materials before detection. Over the past decade, the UCNA experiment has developed a PENELOPE-based Monte Carlo simulation to estimate this systematic effect on the measured β asymmetry A . Other experiments, proposed and active, will measure angular correlations using similar detection methods. We will discuss our results as well as the general implications of these simulations as they apply to other detector geometries and electric/magnetic field profiles.

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