

Improving Dark Matter Searches by Measuring the Nucleon Axial Form Factor: perspectives from MicroBooNE

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The MicroBooNE neutrino experiment at Fermilab is constructing a liquid-argon time-projection chamber for the Booster Neutrino Beam to study neutrino oscillations and interactions with nucleons and nuclei, starting in 2014. We describe the experiment and focus on its unique abilities to measure cross sections at low values of Q^2 . In particular, the neutral-current elastic scattering cross section is especially interesting, as it is sensitive to the strange sea quark contribution to the angular-momentum of the nucleon, Δs . Implications for dark-matter searches are discussed.

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