

Abstract Submitted  
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**Progress on Neutrino-Proton Neutral-Current Scattering in MicroBooNE**<sup>1</sup> STEPHEN PATE, Physics Department, New Mexico State University, MICROBOONE COLLABORATION — The MicroBooNE Experiment at the Fermi National Accelerator Laboratory, an 89-ton active mass liquid argon time projection chamber, affords a unique opportunity to observe low- $Q^2$  neutral-current neutrino-proton scattering events. Neutral-current neutrino-proton scattering at  $Q^2 < 1 \text{ GeV}^2$  is dominated by the proton's axial form factor, which can be written as a combination of contributions from the up, down, and strange quarks:  $G_A(Q^2) = \frac{1}{2}[-G_A^u(Q^2) + G_A^d(Q^2) + G_A^s(Q^2)]$ . The contribution from up and down quarks has been established in past charged-current measurements. The contribution from strange quarks at low  $Q^2$  remains unmeasured; this is of great interest since the strange quark contribution to the proton spin can be determined from the low- $Q^2$  behavior:  $\Delta S = G_A^s(Q^2 = 0)$ . MicroBooNE began operating in the Booster Neutrino Beam in October 2015. I will present the status in observing isolated proton tracks in the MicroBooNE detector as a signature for neutral-current neutrino-proton events. The sensitivity of the MicroBooNE experiment for measuring the strange quark contribution to the proton spin will be discussed.

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