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Progress Towards a Measurement of the Neutrino Asymmetry in UCN Beta Decay at LANSCE SYED HASAN, University of Kentucky, FOR UCNB COLLABORATION — The UCNB experiment aims at a measurement of the neutrino asymmetry parameter B, the angular correlation between the neutron spin and the anti-neutrino momentum, in the decay of ultracold neutrons, through the detection of electron-proton coincidences. The UCN from the LANL source are polarized via transport through a 7-T field and then transported to a cylindrical decay trap situated within a 1-T superconducting solenoidal spectrometer. In order to measure electron-proton coincidences, the existing UCNA experiment is modified to include a windowless decay trap, and the UCNA detectors are replaced with thick, large area, highly segmented Si detectors. A proton accelerating potential of 20 kV is applied between the decay volume and the Si detectors, to permit the detection of the low-energy recoil protons. This talk will present results from tests of the accelerating potential system in the 1-T spectrometer magnetic field environment, and will report on the status of progress towards the detection of electron-proton coincidences from neutron decay in the spectrometer.

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