

Abstract Submitted
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The Nab/UCNB detection system for electron-proton coincidences in neutron decay LEAH BROUSSARD, Oak Ridge National Laboratory, NAB COLLABORATION, UCNB COLLABORATION — Angular correlations in neutron decay can be used in precise tests of the Standard Model and the search for new physics Beyond the Standard Model. The Nab experiment at the Spallation Neutron Source will determine the electron-neutrino correlation a and the Fierz interference term b . The UCNB experiment at the Los Alamos Neutron Science Center will measure the neutrino asymmetry B . Thin deadlayer, thick, highly segmented silicon detectors are used to detect the electrons and protons in coincidence in both experiments. A 24 channel prototype detection system based on these silicon detectors has been developed which meets experimental requirements of ~ 3 keV FWHM energy resolution, rise times of ~ 50 ns, and energy thresholds below 10 keV. An overview of the requirements on the detection system for precision correlation measurements, results from characterization of the prototype system, and an update on development of the fully instrumented detection system will be presented.

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