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An Overview of the Nab Experiment and the Results from Magnetic Field Mapping[1] ELIZABETH SCOTT, National Institute of Standards and Technology, THE NAB EXPERIMENT COLLABORATION — The Nab experiment aims to measure the neutron beta decay electron-neutrino correlation coefficient "a" and the Fierz interference term "b". Measurement of "a" to a relative uncertainty of 10^{-3} provides a determination of λ, the ratio of axial to vector coupling constant, at roughly the same precision level as the vector coupling determined from the superallowed decays. A measurement of "b" with an uncertainty of 3×10^{-3} would provide a sensitive test of physics beyond the Standard Model. In Nab, the parameter "a" is extracted from the electron energy and proton time of flight (TOF) using an asymmetric magnetic spectrometer and two large-area highly pixelated Si detectors. To reach the goal of 10^{-3} relative uncertainty in "a", Nab requires understanding of its possible systematic effects via a detailedmapping and analytic expansion of the magnetic field. My talk focuses onthe results of the initial mapping and the suggested path forward.

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Elizabeth Scott
National Institute of Standards and Technology/ University of Maryland, College Park

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