

Abstract Submitted
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The Electric Field in the Neutron Decay Region of the Nab Experiment¹ HUANGXING LI, Institute for Nuclear and Particle Physics, University of Virginia, NAB COLLABORATION — The Nab collaboration will determine two parameters in free neutron beta decay: (a) the electron-antineutrino correlation coefficient a to $|\delta a/a| \leq 10^{-3}$ and (b) the Fierz interference term b to $|\delta b| \leq 3 \times 10^{-3}$. Part (a) will be done with a measurement of the two-dimensional electron energy and proton time-of-flight spectrum in the neutron beta decay. We will discuss the requirements for the electric field in the neutron decay region to achieve the desired experimental uncertainty. We will present our solution: an electrode system made from materials with low work function variations, and its characterization with a Kelvin probe.

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Huangxing Li
Institute for Nuclear and Particle Physics, University of Virginia

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