

Abstract Submitted
for the SES16 Meeting of
The American Physical Society

Systematic Uncertainties of the Fierz Interference Term in the Free Neutron Beta Decay of the Nab Experiment HUANGXING LI, University of Virginia, NAB COLLABORATION — The Nab experiment is under construction at the SNS, with the goal to measure two parameters in free neutron beta decay: (a) the electron-antineutrino correlation a to a precision of $\delta a/a = 10^{-3}$ and (b) the Fierz interference term b to $\delta b = 3 \times 10^{-3}$. The Fierz interference term b will be extracted from a measurement of the neutron beta decay spectrum. These results will be used to determine the ratio of nucleon axial-vector coupling to vector coupling up to a precision of 0.03%, and thus test the unitarity of CKM matrix, as well as to search for beyond the Standard Model Physics through S,T interactions. We will present simulations required for a thorough analysis of the systematic uncertainties in the Fierz term measurement.

Huangxing Li
University of Virginia

Date submitted: 07 Oct 2016

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