

Abstract Submitted
for the SES16 Meeting of
The American Physical Society

Simulations and Fitting Methods in the Nab Experiment WEN-
JIANG FAN, Univ of Virginia, NAB COLLABORATION — The Nab collabora-
tion at the Spallation Neutron Source (SNS) aims to measure the electron-neutrino
correlation parameter a with a relative uncertainty of about 10^{-3} , and the Fierz
interference term b with absolute uncertainty of 3×10^{-3} . Nab will use a novel
time-of-flight magnetic field spectrometer to guide the charged decay products to
two segmented Si detectors. In the Nab experiment, a is determined by combined
precise determinations of the electron energy and the proton time-of-flight. In this
talk, we will present a fitting method to analyze a , as well as specific techniques
developed to increase the simulation speed while keeping the required precision in
the Geant 4 simulation.

Wenjiang fan
Univ of Virginia

Date submitted: 07 Oct 2016

Electronic form version 1.4