Stony Brook University

Krishna Kumar, Professor
Department of Physics & Astronomy
Stony Brook University
Stony Brook, NY 11794-3800
(631) 632-8119
krishna.kumar@stonybrook.edu

December 2, 2015

Timothy Hallman
Associate Director, Office of Science
Division of Nuclear Physics
Department of Energy

Dear Dr. Hallman:

Enclosed is a document that contains the "Report on Aluminum and Inelastic Backgrounds", as a response to one of the recommendations of the Science Review Report of MOLLER. As prescribed, we have reviewed these backgrounds. The document describes in detail how we plan to use auxiliary measurements from the MOLLER apparatus itself to constrain background asymmetries and enable robust corrections with systematic uncertainties that are significantly smaller than the proposed statistical uncertainty on the primary asymmetry measurement of interest.

We have presented the strategy in detail at a teleconference on November 24, 2015 to four theorists with expertise on the relevant physics namely Bill Donnelly (MIT), Chuck Horowitz (Indiana), Wally Melnitchouk (JLab) and Michael Ramsey-Musolf (ACFI, UMass, Amherst). Constructive feedback was provided that has since been incorporated into the final version of the document. The theorists were generally in agreement with the strategy proposed to measure and constrain these background corrections and with the systematic uncertainties on the corrections that were presented. They have agreed to provide written comments within two weeks that will be collated into an auxiliary document that we propose to share with your office in about three weeks.

The MOLLER collaboration enthusiastically looks forward to working with you to map out the next concrete steps to develop the project.

Sincerely Yours,

Krishna Kumar
Professor of Physics
MOLLER Point of Contact