

Abstract Submitted
for the DNP20 Meeting of
The American Physical Society

Beta Spectrum Module: A Detector for Directly Measuring Beta Shape Factors¹ T. RULAND, J.C. BLACKMON, Louisiana State University, M.T. FEBBRARO, B.C. RASCO, K.P. RYKACZEWSKI, Oak Ridge National Laboratory, MTAS COLLABORATION — Previous measurements of beta decay have generally depended upon gamma detection with modest efficiency. This has resulted in a bias in estimates of the energy released towards betas and antineutrinos at the expense of gamma rays, with implications for reactor decay heat. The measured spectrum of antineutrinos at higher energies also disagrees with the predicted flux. We have developed a Beta Spectrum Module (BSM) for direct measurement of the beta shape factors to alleviate these anomalies in the reactor antineutrino spectrum.

¹Supported by the US DOE Office of Nuclear Physics

Thomas Ruland
Louisiana State University

Date submitted: 29 Jun 2020

Electronic form version 1.4