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Progress on Using the β Decay of Lithium-8 to Limit Tensor Currents in the Weak Interaction[1] M. T. BURKEY, Lawrence Livermore National Laboratory, University of Chicago, Argonne National Laboratory, A. T. GALLANT, N. D. SCIELZO, Lawrence Livermore National Laboratory, G. SAVARD, L. VARRIANO, Argonne National Laboratory, University of Chicago, J. A. CLARK, R. ORFORD, D. P. BURDETTE, Argonne National Laboratory, T. Y. HIRSH, Soreq NRC, Israel, G. H. SARGSYAN, K. D. LAUNEY, S. T. MARLEY, G. E. MORGAN, Louisiana State University, R. SEGEL, Northwestern University — Analysis of a high-statistics dataset of Lithium-8 beta decay kinematics collected with the Beta Decay Paul Trap (BPT) at ANL for the purpose of precisely measuring the beta-neutrino correlation coefficient ($a_{\beta\nu}$) to probe for Tensor currents in the weak interaction has been ongoing. Lithium-8 has an essentially-pure Gamow-Teller β decay to a broad Beryllium-8 excited state, that in turn breaks into two $\sim$1.5-MeV α particles. Both the energy and direction of the β and two α particles are collected at the BPT, making the kinematics of each decay overdetermined. We will present the current results from this experiment, which have already constrained the tensor contribution to below 1%. We will also discuss our progress to characterize the excitation-energy dependence of several recoil-order terms, which may further reduce our systematic errors. LLNL-ABS-812175

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