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Searching for Tensor Currents in the Weak Interaction Using ^{8}Li β Decay[1] M.T. BURKEY, G. SAVARD, University of Chicago, Argonne National Laboratory, R.E. SEGEL, Northwestern University, J.A. CLARK, J. KLIMES, Argonne National Laboratory, N.D. SCIELZO, A.T. GALLANT, K. KOLOS, S.W. PADGETT, B.S. WANG, Lawrence Livermore National Laboratory, T. HIRSH, Soreq NRC, Yavne 81800, Israel, R. ORFORD, McGill University, E. HECKMAIER, University of California, Irvine, J. PIERCE, L. VARRIANO, University of Chicago, D. BURDETTE, University of Notre Dame, S.T. MARLEY, G. MORGAN, Louisiana State University, K.S. SHARMA, University of Manitoba — Precision beta-neutrino correlation measurements are often used as a broadband test for New Physics by limiting interaction contributions other than the vector-axial vector structure the Standard Model requires. We present the results of a pure Gamow-Teller $\beta-\nu$ correlation coefficient ($a_{\beta\nu}$) measurement via the beta decay of ^{8}Li, which is sensitive to tensor currents. This data set was taken at Argonne National Lab with the Beta decay Paul Trap (BPT) and surpasses the statistics of our previous limit-defining ^{8}Li experiment by an order of magnitude. With the analysis nearing its conclusion, we intend to push the low energy limit of $a_{\beta\nu}$s relative uncertainty into the 0.1 percent range.

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