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Magneto-Optical trapping developments for the ^{6}He β-$\overline{\nu}$ angular correlation experiment D.W. ZUMWALT, A. GARCIA, R. HONG, Y. BAGDASAROVA, D.W. STORM, H.E. SWANSON, F. WAUTERS, University of Washington, A. KNECHT, CERN, X. FLECHARD, E. LIENNARD, LPC, CAEN, France, O. NAVILIAT-CUNCIC, NSCL, Michigan State University, P. MUELLER, W. WILLIAMS, T. O'CONNOR, K. BAILEY, Argonne National Laboratory — In the search for beyond the Standard Model contributions of tensor currents in the weak interaction, our group is seeking to measure the β-$\overline{\nu}$ angular correlation in the decay of ^{6}He ($t_{1/2} \sim 807$ ms). We will measure the time of flight of recoil daughter ^{6}Li ions as they fall through an electric field to kinematically reconstruct the relative angle of the β and $\overline{\nu}$. This requires precise knowledge of the initial position of the decay, which we achieve by confining the ^{6}He atoms to a small region with a magneto-optical trap (MOT). To lower the detection of background decays from untrapped ^{6}He atoms, we perform a MOT-to-MOT transfer within $\sim$15 ms using a pulsed push beam through a conductance-limiting aperture tube to provide differential pumping between two MOT chambers. Transfer efficiencies exceeding 60% have been achieved. Recent results will be presented.

D.W. Zumwalt
University of Washington

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