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Development of a Position Sensitive Beta and Recoil Ion Detectors for the ^{6}He $\beta - \nu$ Angular Correlation Measurement RAN HONG, YELENA BAGDASAROVA, ALEJANDRO GARCIA, DEREK STORM, MATTHEW STERNBERG, ERIK SWANSON, FREDERIK WAUTERS, DAVID ZUMWALT, CENPA, University of Washington, KEVIN BAILEY, ARNAUD LEREDDE, PETER MUELLER, THOMAS O'CONNOR, Argonne National Laboratory, XAVIER FLÉCHARD, ETIENNE LIENNARD, Laboratoire de Physique Corpusculaire, ANDREAS KNECHT, Paul Scherrer Institute, OSCAR NAVILIAT-CUNCIC, NSCL, Michigan State University — In order to measure the $\beta - \nu$ angular correlation coefficient a and put more stringent limits on exotic tensor type weak currents, we constructed a system which detects β particles in coincidence with recoil ions from the β-decay of laser trapped ^{6}He atoms. The β particles are detected by a scintillator and a multi-wire proportional chamber (MWPC) with a capacitive charge division anode. The recoil ions are detected by a microchannel plate (MCP) with delay-line anodes. The coefficient a is extracted by fitting the coincidence data to GEANT4 based Monte Carlo simulations, which are also used to study systematic uncertainties related to the detector system. A new method of calibrating the MWPC using a cathode focusing effect will be presented. This work is supported by DOE, Office of Nuclear Physics, under contract nos. DE-AC02-06CH11357 and DE-FG02-97ER41020.

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