

Abstract Submitted
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aCORN Electrostatic mirror upgrade, design and operation¹

MD HASSAN, Tulane University, ACORN COLLABORATION — The electron-antineutrino angular correlation (a) in the neutron beta decay is being measured by the aCORN experiment. aCORN is aiming to measure a to a relative accuracy of 1% using a novel technique where electrons and protons from the neutron decay are detected in coincidence. The momenta of the particles are selected in such a way that two groups of protons are formed based on the proton time-of-flight. An electrostatic mirror reflects all protons towards the proton detector and preaccelerates them for collimation. In the last aCORN run the largest source of systematic correction was due to transverse electric fields in the mirror. For the next phase of aCORN, we upgraded the electrostatic mirror. The design and operation of the upgraded electrostatic mirror will be presented.

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