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Hodoscope for spectrometer optics calibration in APEX dark matter search NEIL GOECKNER-WALD, TYSON PRICE, Carnegie Mellon University, BOGDAN WOJTSEKHOWSKI, Thomas Jefferson National Accelerator Facility — The A' Experiment (APEX) to be conducted in Hall A of Jefferson Lab (JLab) is a high sensitivity search for a proposed dark matter A' boson. To improve sensitivity APEX will make use of a new High Resolution Spectrometer (HRS) calibration method using a scintillating fiber (SciFi) hodoscope. A prototype SciFi hodoscope is developed to evaluate and improve the characteristics of the hodoscope design. The use of an active detector to calibrate the HRS is expected to allow for direct spectrometer calibration at any momentum setting without the use of special beam energies and improve scattering angle resolution by approximately 30%.

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