Abstract Submitted
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Constructing the Fermilab E-906 Spectrometer to Investigate Proton Anti-Quark Asymmetry[1] MANDI CROWDER, Abilene Christian University, E-906 COLLABORATION — Fermilab E-906 is a fixed target experiment that has a primary goal of extracting the sea anti-quark structure of the proton. For E-906, Abilene Christian University (ACU) is responsible for the design and construction of the downstream hodoscopes that will form a primary part of the event trigger. The detector design is based on the E-866/NuSea spectrometer, which determined the proton's excess of anti-down quarks relative to anti-up quarks over an extended kinematic range. The improvements over E-866/NuSea include replacing the scintillators and light guides to ensure better efficiency. E-906 will also add double-ended read-out on the three farthest downstream hodoscopes to provide better timing and trigger efficiency. The required 224 photomultiplier tubes (PMTs) will be tested to find their approximate operating voltages and maximum counting rates. The method to find the operating voltage used the Compton edge of Cesium-137 found with a Multi-Channel Analyzer (MCA) to compare all of the PMTs. All other testing procedures, results, and design plans will be presented.

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