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ATHENA MPGD Tracking Detectors for the Electron-Ion Collider

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The future Electron-Ion Collider (EIC) at Brookhaven National Laboratory (BNL) will collide polarized electrons with polarized proton/ions. This unique environment imposes stringent requirements on the tracking system needed for the measurement of the scattered electron and charged particles produced in the collisions. A Totally Hermetic Electron-Nucleus Apparatus (ATHENA) detector has been proposed as a potential day one EIC detector. The ATHENA tracking system implements a hybrid of silicon and Micro-Pattern Gaseous Detector (MPGD) technologies. The MPGDs positioned at larger radii compliment the silicon-based tracking and vertexing detectors to provide an optimized and cost effective tracking system. This presentation will focus on the MPGD technology choices for the ATHENA detector, their performance, and an overview of the ongoing R&D.

Collaboration

ATHENA Collaboration

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