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MAPS Silicon Vertex Tracker and AC-LGAD Time-of-Flight Detectors for the Electron-Ion Collider

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The Electron-Ion Collider (EIC) is a new flagship facility that will be built at Brookhaven National Laboratory to study properties of nuclear matter and the strong interactions through electron-proton and electron-ion collisions. High efficiency, high resolution vertexing, tracking and particle identification in a wide kinematic range are critical to fulfill the requirements of the EIC physics program. In this talk, we will describe the design and development of the silicon vertex tracker based on the most advanced Monolithic Active Pixel Sensor (MAPS) technology as well as the Time-of-Flight detectors based on the recently developed AC-coupled Low Gain Avalanche Diode (AC-LGAD) technology.

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