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Experimental Perspective on Electron-Proton Scattering at the Electron-Ion Collider LAURA HAVENER, Massachusetts Institute of Technology — The Electron Ion Collider is a proposed accelerator designed to study the quark and gluon substructures of nucleons and nuclei. Initial theoretical development of the collider kinematics for elastic electron-proton collisions has been accomplished, but actual experimental setups need to be considered. A major difficulty lies in experimentally differentiating elastic from inelastic scattering. This distinction is clearly defined in theoretical calculations but the difference becomes blurred in reality. ROOT Data Analysis Framework was used to determine how to effectively separate these collisions by investigating the decay of the hadronic state from inelastic scattering into a proton and a pion. Then the locations of the scattered products from both collisions were analyzed with respect to the already proposed experimental setups for the EIC.

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