



Contribution ID: 804 Contribution code: MOPC66

Type: **Poster Presentation**

Beam commissioning of the EIC with detector

Monday, 20 May 2024 16:00 (2 hours)

The high-luminosity, 10^{33} – 10^{34} cm⁻²s⁻¹ (e-p), Electron-Ion Collider is presently being developed at Brookhaven National Laboratory in partnership with the Jefferson Laboratory. Beam commissioning is planned right after the installation is complete and after passing all necessary reviews, including the Accelerator Readiness Reviews. Initially, the detector performance testing and commissioning, conducted without a beam utilizing cosmic radiation, will occur in the assembly hall area of IP-6. Subsequently, after demonstrating beam collisions at low electron and proton beam intensities and fine-tuning the lattice and beam parameters, the detector will be integrated into the collider for beam commissioning. Our focus encompasses commissioning sequences, optimization of collimators in response to background conditions, and machine parameter adjustments to achieve optimal luminosity and polarization, all aimed at optimizing the detector's performance in response to the beam.

Footnotes

Funding Agency

Paper preparation format

LaTeX

Region represented

North America

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Session Classification: Monday Poster Session

Track Classification: MC1: Colliders and other Particle and Nuclear and Physics Accelerators:
MC1.A19 Electron-Hadron Colliders