



Contribution ID: 57

Type: **Talk**

hpDIRC Detector Development for the ePIC Experiment at the Electron-Ion Collider

Thursday, September 18, 2025 2:05 PM (20 minutes)

The high-performance DIRC (hpDIRC) detector for the ePIC experiment at the future Electron-Ion Collider (EIC) has progressed into an advanced development stage, transitioning from simulation-driven design to component validation and integration testing. The baseline design, optimized through detailed and test-beam-validated Geant4 simulations, features a novel 3-layer spherical lens, small pixel sensors, and fast readout. It plans to leverage repurposed BaBar DIRC radiator bars. Construction of a modular hpDIRC prototype is nearing completion, with validation underway at the Cosmic Ray Telescope (CRT) facility at Stony Brook University. These efforts include the reuse and quality assurance of legacy DIRC components and the gradual replacement of interim hardware with ePIC-specific systems. The project is on track toward a full Technical Design Report (TDR) by late 2026. This talk will present the current status of the hpDIRC development, the integration, and reuse strategy for key optical components, and performance studies from ongoing CRT-based testing.

Author: Dr KALICY, Greg (CUA)

Presenter: Dr KALICY, Greg (CUA)

Session Classification: R&D on Cherenkov light imaging systems for future experiments

Track Classification: R&D on Cherenkov light imaging systems for future experiments