

# Hadron PID in the EIC ePIC detector backward endcap

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The ePIC general purpose detector for the Electron-Ion Collider (EIC) will be constructed at the Brookhaven National Laboratory in the US by 2030. It will provide an almost hermetic coverage in tracking, electromagnetic and hadronic calorimetry, as well as particle identification (PID) in the pseudorapidity range between -3.5 and +3.5. In particular, the ePIC backward endcap will be equipped with a Ring Imaging Cherenkov (RICH) detector, covering angular acceptance  $-3.5 < \eta < -1.5$  and providing pion/kaon/proton PID with a positive kaon identification on a 3 sigma level up to  $\sim 7$  GeV/c.

By using fast Large Area Picosecond Photodetectors (LAPPDs) as a photosensor, ePIC backward RICH will also provide a high resolution timing reference measurement to the barrel and forward endcap Time of Flight PID subsystems.

Modeling results, including ring imaging and high resolution timing performance evaluation, as well as a selected set of physics simulations, including expected kaon sample purity estimates for semi-inclusive deep inelastic scattering (SIDIS) physics measurements, will be presented.

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