Contribution ID: **28** Type: **not specified**

The simulation of DIRC detector at the Electron-ion collider in China

Thursday, 7 September 2023 11:00 (20 minutes)

The Electron-ion collider in China (EicC) is a proposed future electron-ion collider with a high luminosity above 2.0 × 10e33 cm−2·s−1 and center-of-mass energy ranging from 15 to 20 GeV. To meet its PID requirement in the barrel region, a focusing DIRC detector is proposed, which consists of fused silica radiators, MCP-PMT photosensor array, and fast-timing readout electronics. In order to study and optimize its performance, we conducted a GEANT4 simulation including various optical transmission and focus systems, readout electronics, and image reconstruction algorithm. The simulation results demonstrate a high angular resolution of ~ 1mrad and time resolution <100ps, achieving the 3σ Pion/Kaon separation in the momentum range of 1~6GeV/c.

Primary authors: Dr LI, Xin (Institute of Modern Physics, Chinese Academy of Sciences); Prof. ZHAO, Yuxiao (Institute of Modern Physics, Chinese Academy of Sciences); Prof. LIANG, Yutie (Institute of Modern Physics, Chinese Academy of Sciences)

Presenter: Dr LI, Xin (Institute of Modern Physics, Chinese Academy of Sciences)

Session Classification: F1