

The 219th HENPIC seminar by Yuxiang Zhao (赵宇翔), IMP, Nov. 21-2024, Thursday 10:30 am (Beijing time)

Title:

Electron-Ion Collider in China

Abstract:

Studying the origin of nucleon spin and mass in Quantum Chromodynamics (QCD) is essential for understanding the fundamental constituents of visible matter and the underlying strong force that governs their interactions. The Electron-ion collider in China (EicC) has been proposed to carry out dedicated research to explore these open questions. The EicC will feature highly polarized electrons (with a polarization of $\sim 80\%$) colliding with protons (with a polarization of $\sim 70\%$) at the variable center of mass energies ranging from 15 to 20 GeV and a luminosity of $(2-4) \times 10^{33} \text{ cm}^{-2} \text{ s}^{-1}$. Polarized deuterons and Helium-3, as well as unpolarized ion beams from Carbon to Uranium, will also be available. The conceptual design report of EicC will be released soon.

In this talk, I will present a few highlighted physics at EicC, particularly focusing on the complementarity between EIC@BNL and EicC, together with the detector conceptual design for the EicC spectrometer. In the end, I will briefly discuss a proposal about China Hyperon-Nuclear Spectrometer (CHNS) at HIAF, which paves the way both for physics and detectors towards EicC.

Brief introduction about the speaker:

Yuxiang Zhao (赵宇翔) is a physicist at the Quark Matter Research Center of Institute of Modern Physics. He is mainly working on the nucleon spin structure via lepton scatterings as well as hadronization via $e+e$ -collisions. Before joining IMP in 2019, he worked on the JLab experiments in the US and the COMPASS experiment at CERN.

Summary

Presenter: Prof. ZHAO, Yuxiang