

The 220th HENPIC seminar by Dr. Jiaxing Zhao, Dec. 19, 2024, Thursday, 10:30am (Beijing time)

Title: Heavy flavor production in high-energy proton-proton and heavy-ion collisions in EPOS4 framework

Abstract:

Quantitative studies of the properties of hot QCD matter —QGP— are a central goal of ultrarelativistic heavy-ion collisions. In addition, proton-proton collisions also show the evidence for the formation of a small QGP droplet, although the corresponding system size is no larger than a few cubic femtometers. Quantitative studies require suitable probes that can be observed in the final state and still carry information about the hot and dense phases. A promising probe in this respect is the heavy flavor, as it is produced at an early stage of the collisions and participates in the full evolution. Using the recently developed EPOS4 event generator, we study the production of various heavy flavor mesons in both proton-proton and heavy ion collisions at RHIC and LHC energies in a unified framework. In this talk, I will present the details of the EPOS4 framework for heavy-flavor production and show our results on transverse momentum spectra, yield ratio, nuclear modification factor, elliptic flow, etc.

About the speaker:

Jiaxing Zhao received his Ph.D. from Tsinghua University in 2020 under the supervision of Prof. Pengfei Zhuang, and did postdoctoral research at Tsinghua University (2020-2022), SUBATECH (France, 2022-2024) and then currently at HFHF and Johann Wolfgang Goethe University in Germany. His recent research focuses on open heavy flavor, quarkonium, and heavy flavor exotic states production in high-energy proton-proton and heavy-ion collisions.

Summary

Presenter: ZHAO, Jiaxing