

The 142nd HENPIC seminar by Prof. Wangmei Zha 查王妹 (University of Science and Technology of China), June 16, 2021, Wednesday, 10:30 am (UTC+8)

Talk title: Coherent Photoproduction in Relativistic Heavy-ion Collisions

Speaker: Prof. Wangmei Zha, USTC

Abstract:

The coherent photon-nucleus and photon-photon interactions has been studied in detail at RHIC and LHC to probe the gluon distribution in nucleus and to test QED via relativistic heavy-ion collisions. These kind of interactions are traditionally thought to only exist in ultra-peripheral collisions, where there is no hadronic interactions. Recently, a significant excess of J/ψ yield and dielectron production at very low transverse momentum ($p_T < 0.3$ GeV/c) was observed by the ALICE and STAR collaborations in peripheral A+A collisions, which points to evidence of coherent photoproduction in violent hadronic interactions. The survival of photoproduced J/ψ and electron pair in hadronic heavy-ion collisions merits experimental and theoretical investigations, which are currently rare on the market. Furthermore, the additional source from coherent photoproduction could serve as a novel probe to study the properties of quark-gluon plasma. In this presentation, I will report our recent studies on coherent photoproduction in relativistic heavy-ion collisions and discuss the feasibility of exploring the properties of quark-gluon plasma with the coherent photon induced products.

About the speaker:

Wangmei Zha is currently an associate professor at USTC. His research interest lies in the data analysis and phenomenological models about coherent photoproduction in relativistic heavy-ion collisions and in the future EIC. He joined STAR collaboration since 2012 and led the coherent J/ψ measurements in STAR. He served as the convener of STAR light flavor physics working group during 2018 and 2020, and won the RHIC&AGS merit award in 2019.

Presenter: Prof. ZHA, Wangmei