

The 130th HENPIC seminar by Dr. Xiao-Liang Xia 夏晓亮 (Fudan U.), Dec. 24, 2020, Thursday, 10:30 am (UTC+8)

Talk title: Spin polarization of hyperons and vector mesons in heavy-ion collisions

Speaker: Dr. Xiao-Liang Xia, Fudan University

Abstract:

The quark-gluon plasma (QGP) produced in heavy ion collisions has strong fluid vorticity. Such vorticity can lead to spin polarization of hyperons and spin alignment of vector mesons, which provide us an important tool to study the rotational properties of a QGP droplet. In this seminar, I will discuss some properties of the vorticity, through which we can understand the beam-energy dependence of the global Lambda polarization. Those properties also inspire us to further study the local Lambda polarization. However, some puzzles regarding the local Lambda polarization and the vector meson spin alignment still need to be resolved. I will talk about some theoretical efforts to resolve these puzzles, and finally present our new results about the vector meson spin alignment.

Self-introduction:

Xiao-Liang Xia obtained his Ph.D. under the supervision of Prof. Qun Wang from USTC in 2018, and is currently a post-doctor at Fudan University. His research focuses on vorticity, magnetic field, and spin polarization of hyperons and vector mesons in heavy-ion collisions.

Presenter: Dr XIA, Xiao-Liang (Fudan University)