

## The 134th HENPIC seminar by Yuan-Sheng Zhao 赵渊晟 (Fudan University), Feb. 24, 2021, Wednesday, 10:30 am (UTC+8)

Talk title: Deep-learning-assisted chiral magnetic effect search in heavy-ion collisions

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Speaker: Yuan-Sheng Zhao, Fudan University

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Abstract:

Although multiple observables are proposed, the search of chiral magnetic effect (CME) in heavy-ion collisions suffers difficulties because of the large background effects. Instead of proposing new observables, we employ the deep learning method to assist the CME search from data, which is simulated using a multiphase transition model. A modified convolutional neural network (CNN) is properly trained to identify the typical pattern of CME in the final hadronic distributions. Such pattern is robust against collision energy, centrality, and also what is thought to be the most relevant background, the elliptic flow. Tests for isobaric collisions on the deep learning method shows nice transportability to other collision systems.

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Self-introduction:

Yuan-Sheng Zhao, currently studying as a PhD student at Fudan University, where he also got his B.S. He works on physics of heavy-ion collisions. Recently he is focusing on the application of deep-learning method to the heavy-ion collision (HIC) system.

**Presenter:** Mr ZHAO, Yuan-Sheng (Fudan University)