

## **The 86th HENPIC seminar by Jie Zhao (赵杰), Purdue University, Dec. 12-2019, Thursday 10:30 am (Beijing time)**

Title: Search for the chiral magnetic effect in relativistic heavy-ion collisions

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Speaker: Jie Zhao (赵杰), Purdue University Date: Thursday, Dec. 12, 10:30 am (Beijing time) Download: <https://pan.baidu.com/s/1KDPSLBjYd7kmOqKjYndzQg> access code: vmgj

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Abstract: Metastable domains of fluctuating topological charges can change the chirality of quarks and induce local P and CP violations in quantum chromodynamics (QCD). This can lead to observable charge separation along the direction of the strong magnetic field produced in relativistic heavy-ion collisions, a phenomenon called the chiral magnetic effect (CME). An observation of the CME-induced charge separation would confirm several fundamental properties of QCD, namely, restoration of the approximate chiral symmetry, non-trivial topological structures of the QCD vacuum, and local P and CP violations. It may also explain the magnitude of the matter-antimatter asymmetry in the present universe. I will discuss the current status of the experimental search for the CME, especially the recent progresses in the understanding of the background issues, and new ideas to search for the CME free of background contaminations.

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