

Overview of intermittency analysis in heavy-ion collisions

Wednesday, 10 August 2022 11:00 (15 minutes)

Local density fluctuation near the QCD critical point has been suggested to exhibit a power-law behavior which can be probed by an intermittency analysis on scaled factorial moment in relativistic heavy-ion collisions.

In this talk, I will review recent work on the search for power-law fluctuations with fractality and intermittency analysis in heavy-ion collisions. Experimental measurement from STAR, NA49 and NA61 collaborations[1-3] on self-similar correlations and fluctuations with respect to the size of phase space volume in various high energy collisions are presented, with special emphasis on background subtraction and efficiency correction of the measurement. Phenomenological modelling and theoretical work on the subject are discussed[4-7]. Finally, I will highlight possible directions for future research[8].

[1]T. Anticic et al. (NA49 Coll.), Eur. Phys. J. C 75, 587 (2015).

[2]M. Pawlowska et al. (NA61/SHINE Coll.), Nucl. Phys. A 1005, 121753 (2021).

[3]Jin Wu (for the STAR Coll.), arXiv: 2110.09794 (2021).

[4]Jin Wu, Yufu Lin, Yuanfang Wu, Zhiming Li*, Phys. Lett. B 801, 135186 (2020).

[5]Jin Wu, Yufu Lin, Zhiming Li* Xiaofeng Luo*, and Yuanfang Wu*, Phys. Rev. C 104, 034902 (2021).

[6]P. Li et al., Phys. Lett. B 818, 136393 (2021).

[7]S. Gope and B. Bhattacharjee, Eur. Phys. J. A 57, 44 (2021).

[8]Zhiming Li*, arXiv: 2203.01490 (2022).

Primary author: 李, 治明 (华中师范大学粒子物理研究所)

Co-author: WU, Yuanfang (Central China Normal University)

Presenter: 李, 治明 (华中师范大学粒子物理研究所)

Session Classification: Parallel Session IV (3): Heavy Ion Physics

Track Classification: 重离子物理