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The 97th HENPIC seminar by Prof. Haojie Xu (徐浩洁), Huzhou University (湖州师范学院)，March 26, 2020, Thursday, 10:30am (Beijing time)

Title: Importance of non-flow background on the chiral magnetic wave search

Abstract:
An observable sensitive to the chiral magnetic wave (CMW) is the charge asymmetry dependence of the π− and π+ anisotropic flow difference, Δvn(Ach). We show that, due to non-flow correlations, the flow measurements by the Q-cumulant method using all charged particles as reference introduce a trivial linear term to Δvn(Ach). The trivial slope contribution to the triangle flow difference Δv3(Ach) can be negative if the non-flow is dominated by back-to-back pairs. This can explain the observed negative Δv3(Ach) slope in the preliminary STAR data. We further find that the non-flow correlations give rise to additional backgrounds to the slope of Δv2(Ach) from the competition among different pion sources and from the larger multiplicity dilution to π+ (π−) at positive (negative) Ach.

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