



XXIV QUARK MATTER DARMSTADT 2014

Contribution ID: 27

Type: **Poster**

Relics of Minijets amid Anisotropic Flows

Tuesday 20 May 2014 16:30 (2 hours)

Two dimensional low- p_T dihadron correlations in azimuthal angle ϕ and pseudo-rapidity η in high-energy heavy-ion collisions are investigated within both the HIJING Monte Carlo model and an event-by-event (3+1)D ideal hydrodynamic model. Without final-state interaction and collective expansion, dihadron correlations from HIJING simulations have a typical structure from minijets that contains a near-side two-dimensional peak and an away-side ridge along the η -direction. In contrast, event-by-event (3+1)D ideal hydrodynamic simulations with fluctuating initial conditions from the HIJING+AMPT model produce a strong dihadron correlation that has an away-side as well as a near-side ridge. Relics of intrinsic dihadron correlation from minijets in the initial conditions still remain as superimposed on the two ridges. By varying initial conditions from HIJING+AMPT, we study effects of minijets, non-vanishing initial flow and longitudinal fluctuation on the final state dihadron correlations. With a large rapidity gap, one can exclude near-side correlations from minijet relics and dihadron correlations can be described by the superposition of harmonic flows up to the 6th order. When long-range correlations with a large rapidity gap are subtracted from short-range correlations with a small rapidity gap, the remaining near-side dihadron correlations result solely from relics of minijets. Low transverse momentum hadron yields per trigger ($p_{trig_T} < 4$ GeV/c, $p_{asso_T} < 2$ GeV/c) in central heavy-ion collisions are significantly enhanced over that in p+p collisions while widths in azimuthal angle remain the same, in qualitative agreement with experimental data.

Author: Dr PANG, LongGang (Central China Normal University)

Co-authors: WANG, Qun; WANG, Xin-Nian (Lawrence Berkeley National Lab. (US))

Presenter: Dr PANG, LongGang (Central China Normal University)

Session Classification: Poster session

Track Classification: Correlations and Fluctuations