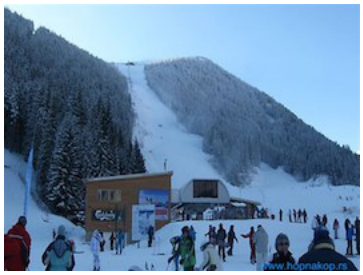

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Different modes of elliptic and triangular flow in ultrarelativistic PbPb collisions from HYDJET model

Tuesday 13 March 2018 18:00 (30 minutes)

Observed dependence of flow symmetry plane in ultra-relativistic heavy ion collisions on transverse momentum (p_T) and pseudorapidity η is attributed to lumpy hot-spots raised by the event-by-event fluctuations of the initial states. Studying different orthogonal modes of the same flow harmonic has been suggested as a promising way to explore this phenomena. Prediction of leading and sub-leading modes for elliptic and triangular flow for charged pions for PbPb collisions at the center-of-mass energy per nucleon pair of 2.76 TeV from HYDJET++ model are presented. Calculations are done by applying principal component analysis technique (PCA) on long range two-particle azimuthal correlations, requesting $|\Delta\eta| > 2$ gap in order to avoid non-flow effects. The results are shown as a function of transverse momentum (p_T) in a range $0.3 < p_T < 3.0$ GeV/c, pseudorapidity range $|\eta| < 2.4$, and in a various centrality classes, from ultra central events (0-0.2%) up to rather peripheral ones (50-60%). Obtained values are compared with real data measurement from CMS experiment. Rather good agreement between model and data is a step in a better understanding the initial-state fluctuations and dynamic of QGP expansion.

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