Nuclear Theory Seminar
Friday, January 21st, at 4:00 pm

Triangular flow and dihadron azimuthal correlations in heavy ion collisions

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Abstract

The dihadron azimuthal correlations triggered by energetic particles in heavy ion collisions at RHIC are studied in a multiphase transport (AMPT) model. A double-peak structure at the away side of triggered particles is obtained after subtracting background correlations due to the elliptic flow as observed in experiments. Both the near-side peak and the away-side double peaks are, however, significantly reduced (enhanced) in events with small (large) triangular flow, which are present as a result of fluctuations in the initial collision geometry. After the subtraction of background correlations due to the triangular flow, the away-side double peaks change into a single peak with broad shoulders. Further subtraction of higher-order flows leads to essentially a single peak at the away side of triggered particles. Implications of these result on the jet-medium interactions in relativistic heavy ion collisions will be discussed.