



Contribution ID: 245

Type: Poster

Correlation between multiparticle cumulants and average transverse momentum in small collision systems in CMS

Friday 16 December 2022 14:00 (1 hour)

Correlations between multiparticle cumulants and mean transverse momentum in proton-proton (pp), proton-lead (pPb), and peripheral lead-lead (PbPb) collisions are presented as a function of charged-particle multiplicity. This correlation carries information on the origin of flow in small collision systems by showing a characteristic sign change at very low multiplicity. In PYTHIA8 events this sign change exists as a result of nonflow effects. To reduce the nonflow dependence, a new correlator combining multiparticle cumulants and average transverse momentum is suggested. In this talk, we will present results for this correlator using two and four-particle cumulant for the second and third-order Fourier harmonics for the above three systems. Predictions based on the color-glass condensate and hydrodynamic models are compared to the experimental results.

Session

Heavy Ions and QCD

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Session Classification: Poster - 4