Contribution ID: **187** Type: **bullet talk (poster)**

Forward-backward multiplicity correlations with strongly intensive observables in pp collisions with ALICE

Tuesday 12 January 2021 19:40 (1h 30m)

Strongly intensive observables can be used to measure forward-backward (FB) correlations between charged particles produced in hadronic collisions in two separate pseudorapidity intervals. Within the model of independent statistically identical particle sources, these observables do not depend on the mean value and fluctuations in the number of the sources, therefore the deviation from the value calculated in the model may provide a signature of collective behavior in the system. It was shown that in heavy ion collisions, correlations between particles in two sufficiently separated pseudorapidity intervals are mostly determined by the initial conditions of hadronic interactions. pp collisions can serve as the reference for the analysis of heavy ion collision dynamics. We will present the collision energy and multiplicity class dependence of these observables in pp collisions using ALICE data. Results are compared with calculations in the PYTHIA event generator.

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Session Classification: Poster

Track Classification: The initial stages of heavy-ion collisions