

Event-by-event dynamical fluctuations of K/π , p/π , and K/p in Pb-Pb collisions with ALICE

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Non-statistical event-by-event fluctuations in relativistic heavy ion collisions have been proposed as probe of phase instabilities near the QCD phase transition. The observable v_{dyn} , which is given in terms of the moments of identified-particle multiplicity distributions, is used to quantify the magnitude of the dynamical fluctuations in event-by-event measurements of given particle ratios. The ALICE detector at the LHC is well suited for the study of v_{dyn} , due to its excellent particle identification capabilities. Particle identification that is based on the measurement of the specific ionization energy loss dE/dx works well on a statistical basis, however, suffers from ambiguities when applied on the event-by-event level. A novel experimental technique called the “Identity Method” was recently proposed to overcome such limitations. In this contribution, we will present results for v_{dyn} for K/π , p/π , and K/p , which applies the Identity Method to Pb-Pb data from ALICE.

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