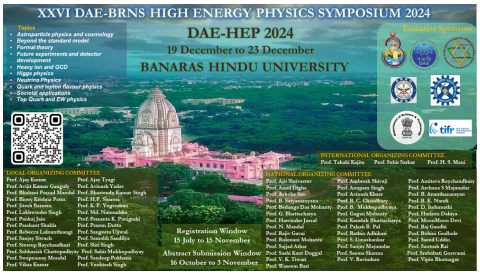

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Neutral to charged particle yield fluctuations in proton-proton collisions at LHC energies

The event-by-event fluctuations in particle yields in heavy-ion collisions are sensitive to the quark-gluon plasma (QGP) susceptibilities. The measurement of such fluctuations is of interest as they may show critical behavior in the proximity of phase boundary of hadron gas-QGP phase diagram. The $\nu_{\rm dyn}$ correlator is generally used to study the magnitude of fluctuations of the relative yields of particles. The recent observation of heavy-ion like features in high multiplicity proton-proton (pp) collisions reported by ALICE experiment has motivated high energy physics community to better understand the underlying events in small collision systems.\par
Recently, ALICE has reported the first measurement of $\nu_{\rm dyn}[{\rm K^0_S, K^{\pm}}]$ in Pb−Pb collisions at $\sqrt{s_{\rm NN}}$ = 2.76 TeV. The $\nu_{\rm dyn}[{\rm K^0_S, K^{\pm}}]$ shows a significant deviation from $\nu_{\rm dyn}[{\rm K^+, K^-}]$ scaling. In this contribution, the results for $\nu_{\rm dyn}[{\rm K^0_S, K^{\pm}}]$ and $\nu_{\rm dyn}[\ , {\rm p(p)}]$ as a function of multiplicity for a selected kinematic region in pp collisions at LHC energies using PYTHIA event generator will be presented.

Field of contribution

Phenomenology

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