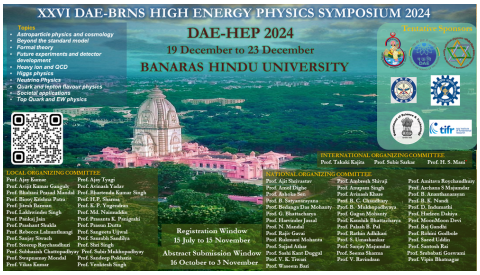

Contribution ID: **45** Type: **Oral**

Investigating the hadronic phase dynamics via resonance studies with ALICE at LHC Energies

Hadronic resonances, with lifetimes comparable to the duration of the hadronic phase, can be used as effective probes for studying its evolution in heavy-ion collisions. Exploring the dynamics of the hadronic phase reveals the roles of rescattering and regeneration in resonance production. In particular, rescattering reduces the resonance yields and may alter their transverse momentum, while regeneration can lead to their enhancement. By analyzing the ratios of resonance yields to those of long-lived particles across various charged-particle multiplicities, valuable insights into hadronic interactions and system evolution are obtained. Additionally, comparing results from smaller collision systems, such as pp and p–Pb, with larger systems like Xe–Xe and Pb–Pb collisions highlights potential collective phenomena and variations in the lifetime of the hadronic phase.

This contribution presents ALICE results from Run 2 and Run 3 on mesonic and baryonic resonances across various collision systems at LHC energies. Focus on the $\mathrm{K}^{*0}(892)$, $\Lambda(1520)$, $\Sigma^{\pm}(1385)$, $\Xi^{0}(1530)$, and $\phi(1020)$ resonances will be given, in particular on their transverse momentum (p_{T}) distributions, their p_{T}-integrated yields, and the ratios of p_{T}-integrated resonance yields to those of long-lived particles. Furthermore, the experimental results will be compared with theoretical predictions to understand the particle dynamics in the hadronic phase.

Field of contribution

Experiment

Author: PADHAN, Sonali (IIT- Indian Institute of Technology (IN))

Presenter: PADHAN, Sonali (IIT- Indian Institute of Technology (IN))

Track Classification: Heavy ion and QCD