



Contribution ID: 349

Type: **Poster**

## Measurement of $\Lambda$ baryon balance function in pp collisions at $\sqrt{s} = 13.6$ TeV at ALICE

This work presents the study of the strange baryon balance function in proton-proton (pp) collisions at  $\sqrt{s} = 13.6$  TeV at LHC with ALICE.

Balance functions of strange baryons are sensitive to production and transport of strange quarks and their hadronization to baryons during the evolution of hot QCD matter formed in heavy-ion collisions. They are also sensitive to the diffusion of up, down and strange quarks produced in QCD matter as well as strangeness and baryon susceptibilities.

In this work, the balance function of  $\Lambda$  baryons is measured for different multiplicity classes in pp collisions at  $\sqrt{s} = 13.6$  TeV. The evolution of the widths of the near-side peak and integral of the balance function from low to high multiplicity classes are susceptible to production of  $s\bar{s}$  quark pairs and their hadronization to hadrons. They could also, possibly, be sensitive to the presence of the QGP phase in very high multiplicity pp collisions at top LHC energies.

The results are compared with Monte Carlo models which shall put significant constraints on the model parameters and our understanding of the possibility of existence of a QGP phase in pp collisions.

### Category

Experiment

### Collaboration (if applicable)

ALICE

**Author:** PATLEY, Yash (IIT- Indian Institute of Technology (IN))

**Presenter:** PATLEY, Yash (IIT- Indian Institute of Technology (IN))

**Session Classification:** Poster session 1

**Track Classification:** Correlations & fluctuations