Motivation

- Production of multi-strange particles increase with multiplicity

- $V^0$s production in jets and UE has been measured in various collision systems
  - $p$-Pb at 5.02 TeV: To understand the origin of flow-like correlations at high multiplicity in small systems
  - $p$ at 7 TeV and Pb-Pb at 2.76 TeV: investigation of medium modified jet fragmentation (using $V^0$s as the probes) and potential medium-excitation

- First look at $\Sigma^-$ in jets

- Production density of strangeness in jets is harder than that in underlying events

- The production of $\Lambda$s and $\Xi^-$ in jets and UE in high multiplicity pp and Pb-Pb collisions

- This analysis: $V^0$s and $\Sigma^-$ production in $p$ at 13 TeV

- Improved precision as compared to 7 TeV result

- Further constrain on particle production mechanism in jets and UE by extending the study to multi-strange particle sector

- Constraint on feed-down estimation of $\Lambda(\Xi)$ in jets

- New insight to strange baryon and meson production and its interplay with the hardness of the event

Results

Strangeness spectra in jets and the UE

- The production density of strangeness in jets is harder than that in underlying events

- The UE is harder than inclusive distribution - the presence of a jet biases UE

The ratios in jets and the UE

- The $K^0_S$ enhancement may be attributed to the soft component of the collision

- Inclusive and UE $\Sigma/A$ has an enhancement at intermediate $p_T$ region

- $\Sigma/A$ is almost $p_T$ independent in UE

Conclusion

- Production of $V^0$s ($K^0_S$ and $\Lambda$) and $\Sigma$ has been investigated in jets and the UE in $pp$ collisions at 13 TeV

- The first look at $\Sigma^-$ production and the $\Sigma/A$ ratio in jet and the UE in $pp$ collisions with ALICE

- Baryon to meson enhancement not present when the particles are in coincidence with a jet

Outlook

- Study (multi-)strange particle production in jets and UE in high multiplicity pp and $p$-Pb collisions

Reference

[1] Adam, Jaroslaw et al. (ALICE Collaboration)
