



# Multiplicity dependent study of $\Lambda(1520)$ production in pp collisions at $\sqrt{s} = 5.02$ and 13 TeV with ALICE



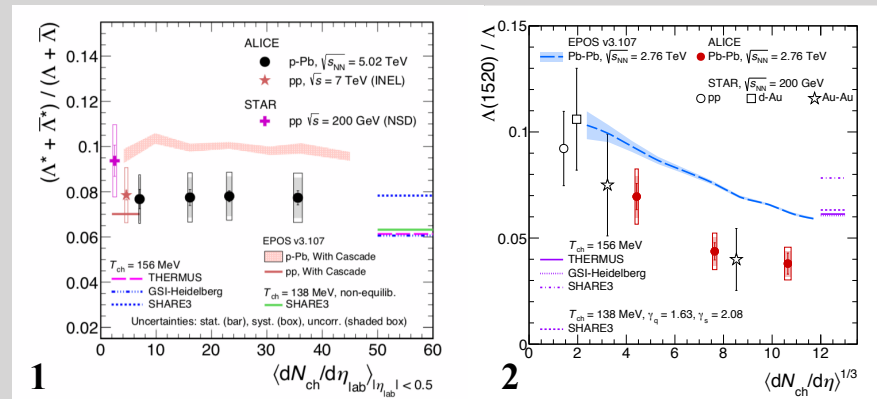
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## Introduction

Hadronic resonances are effective tools for studying the hadronic phase in heavy-ion collisions.

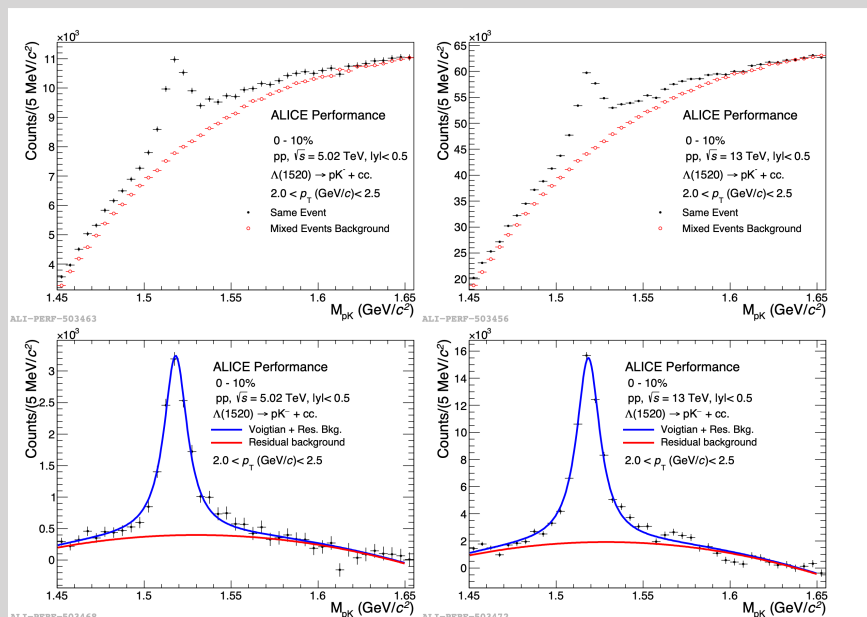
- The  $\Lambda(1520)/\Lambda$  ratio is suppressed in central Pb—Pb collisions with respect to pp and peripheral Pb—Pb collisions but no such suppression is observed in p—Pb collisions.

- The study of  $\Lambda(1520)$  production in pp collisions can serve as a baseline for measurements in p—A and A—A systems.

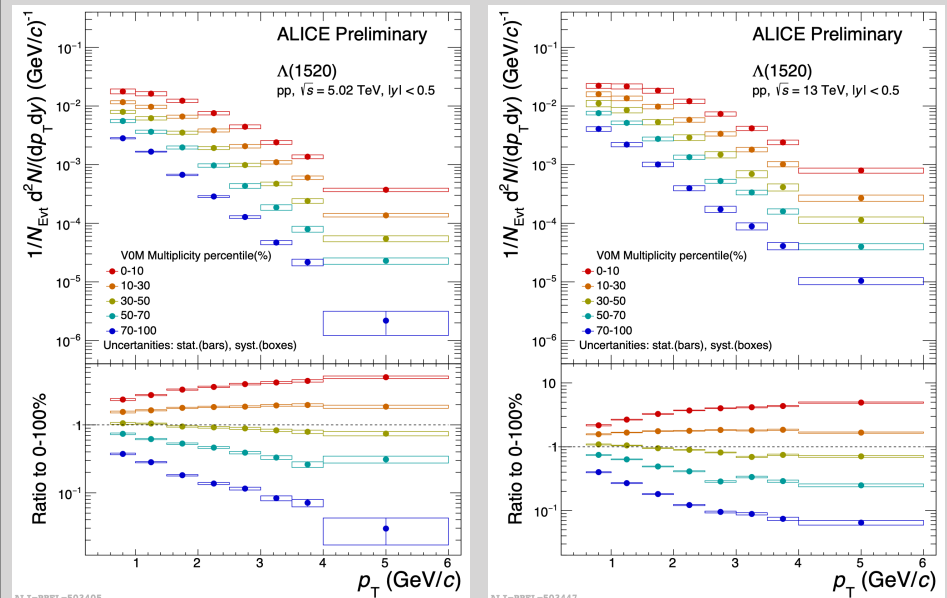


## Signal Extraction

- The uncorrelated combinatorial background is estimated with the event mixing technique.
- The resulting invariant mass distributions are fitted with a Voigtian function and a 2<sup>nd</sup> order polynomial function for the residual background.

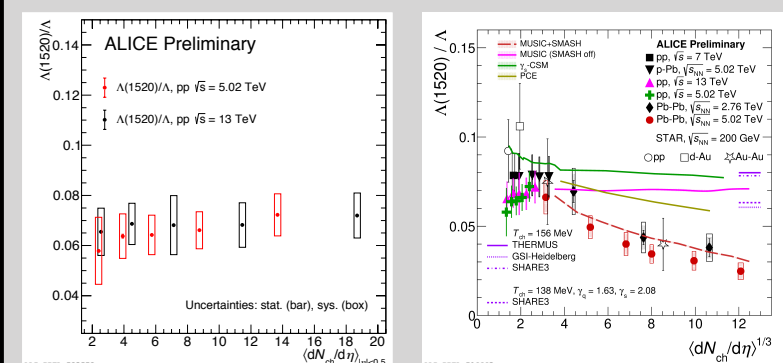


## $p_T$ Spectra



- The spectral shape changes and gets harder with increasing event multiplicity.
- These effects are similar to those observed in heavy-ion collisions that are typically interpreted as flow-like effects.

## $\Lambda(1520)/\Lambda$ ratio and Summary



- $\Lambda(1520)/\Lambda$  is flat in pp collisions. This ratio is independent of multiplicity not only in p—Pb and peripheral Pb—Pb, but in small systems.

## References

1. Phys. Rev. C 99, 024905 (2019)

2. Eur. Phys. J. C 80 (2020) 160