

# Production of $\Sigma(1385)^\pm$ and $\Xi(1530)^0$ measured by ALICE in pp, p-Pb and Pb-Pb collisions at the LHC

**Jihye Song** *for the ALICE Collaboration*

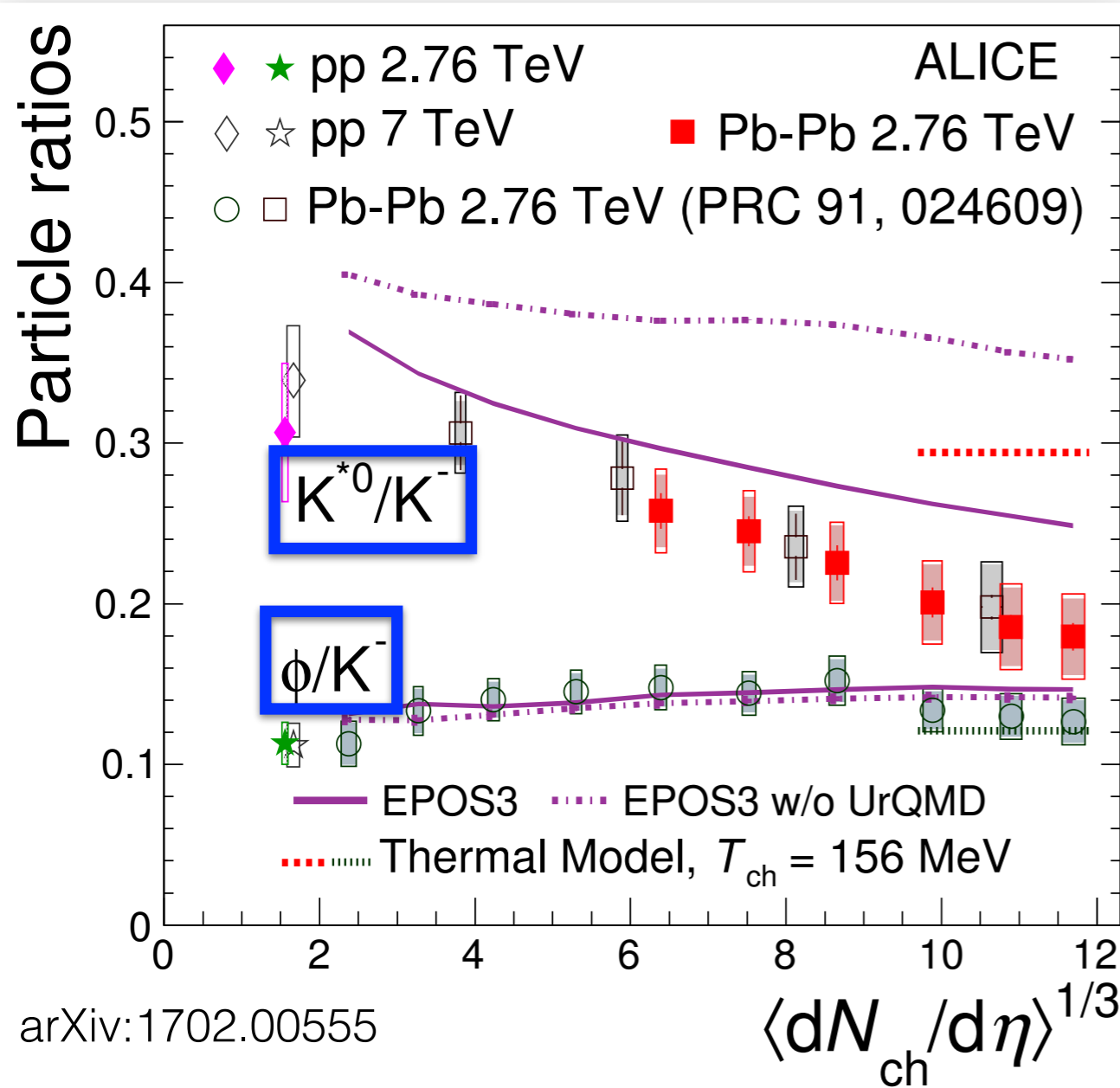
Pusan National University, KOREA

Quark Matter 2017 in Chicago

2017.02.11



# $K^{*0}$ suppressed, no suppression observed for $\Phi$

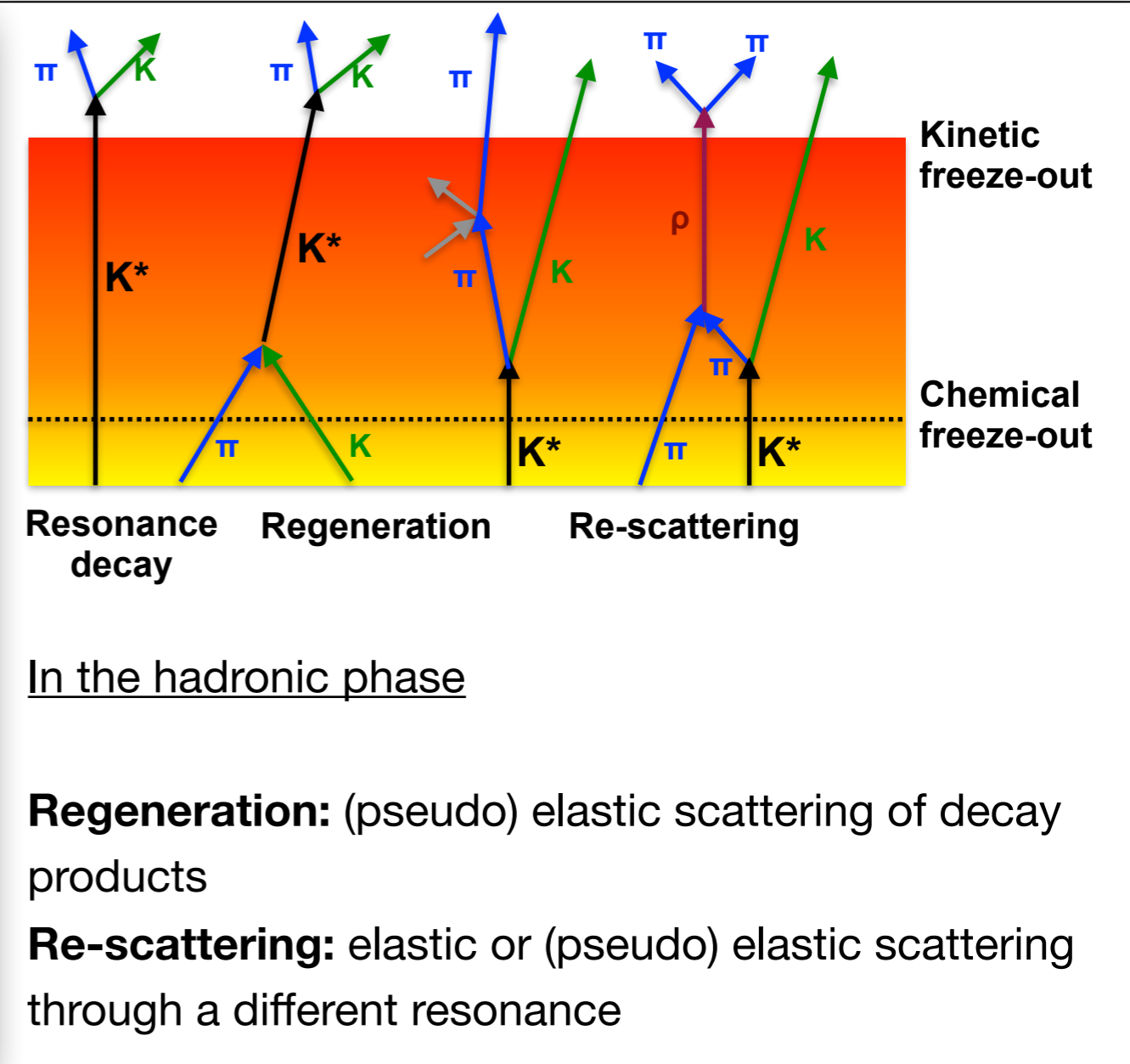
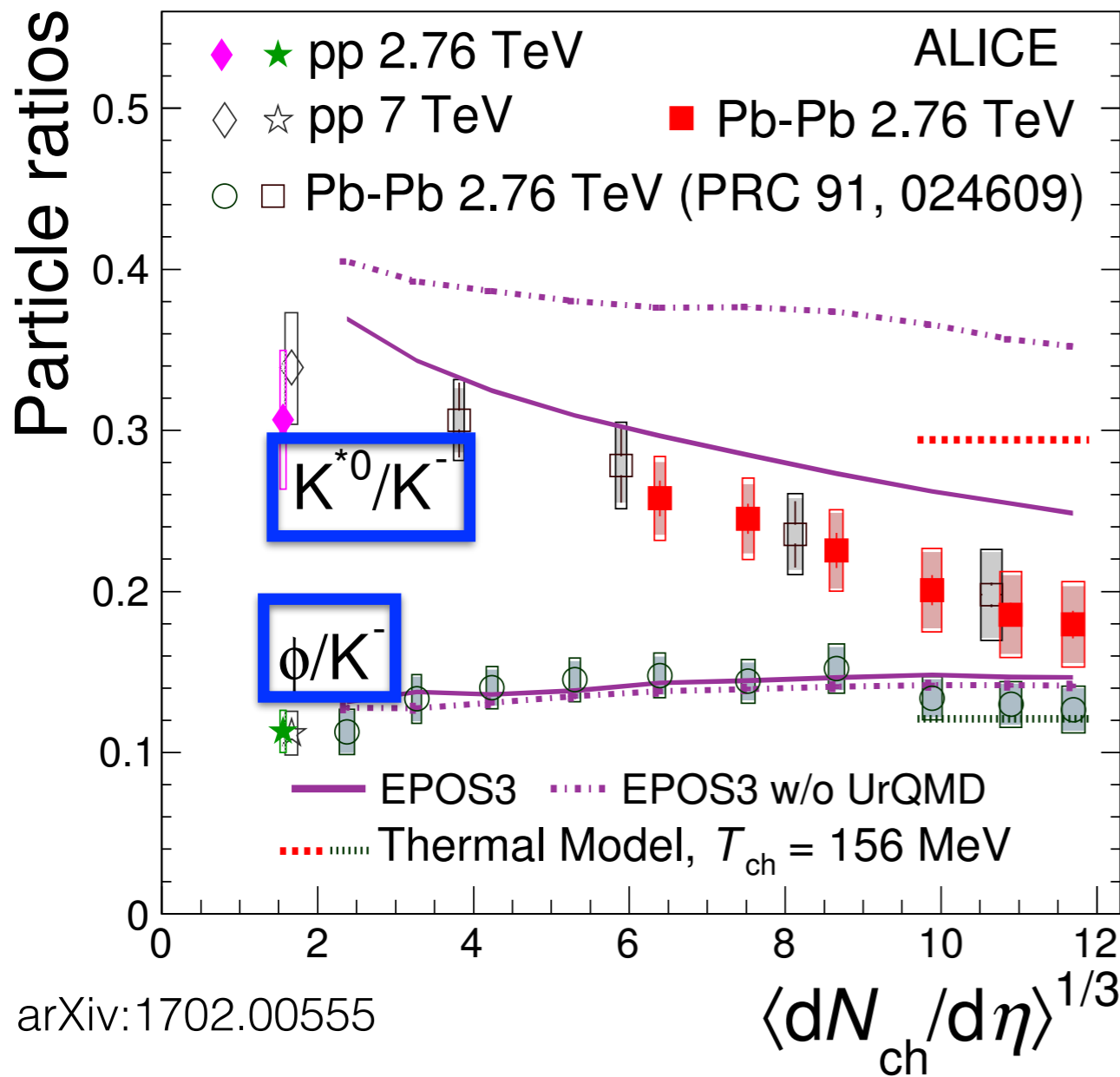


Lifetime(fm/c):  $\tau_{\rho}(1.3) < \tau_{\text{K}^*}(4.2) < \tau_{\Sigma^*}(5.5) < \tau_{\Lambda^*}(12.6) < \tau_{\Xi^*}(21.7) < \tau_{\Phi}(46.2)$



ALICE

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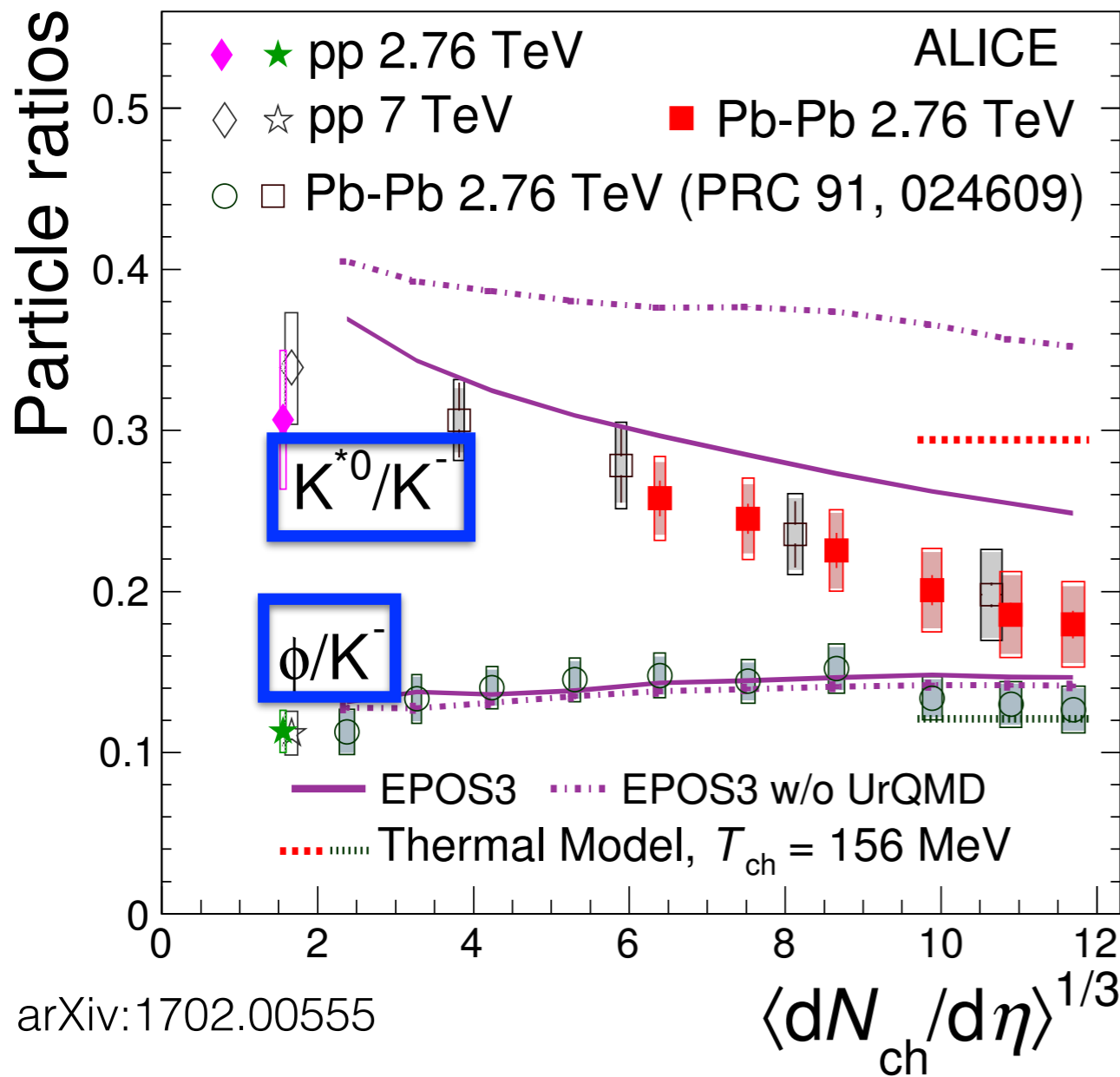


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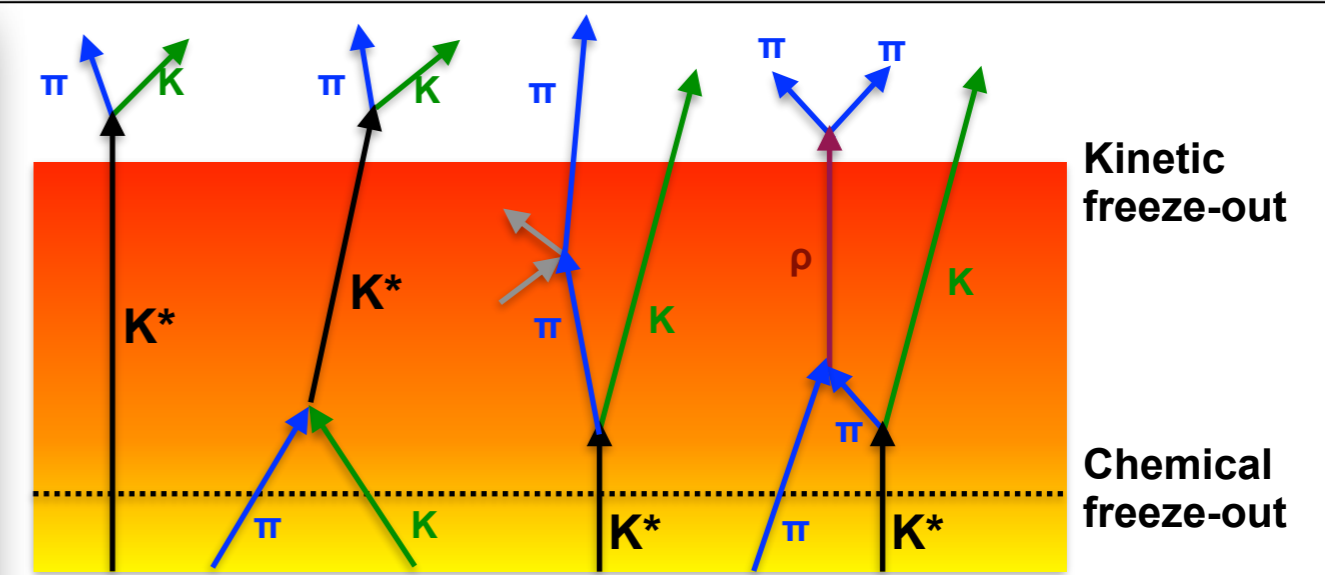


ALICE

# $K^{*0}$ suppressed, no suppression observed for $\Phi$



arXiv:1702.00555



**Resonance decay**      **Regeneration**      **Re-scattering**

In the hadronic phase

**Regeneration:** (pseudo) elastic scattering of decay products

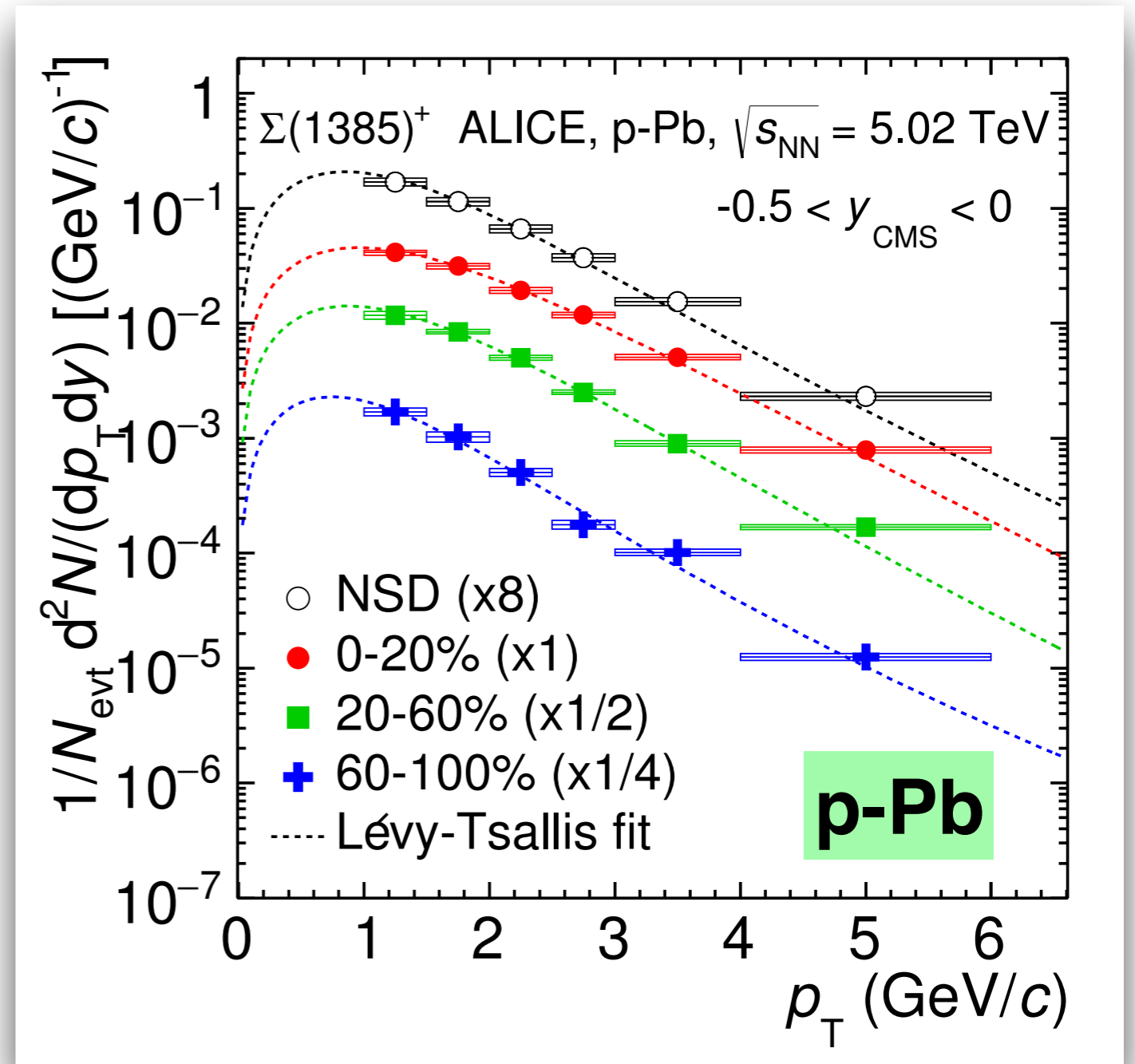
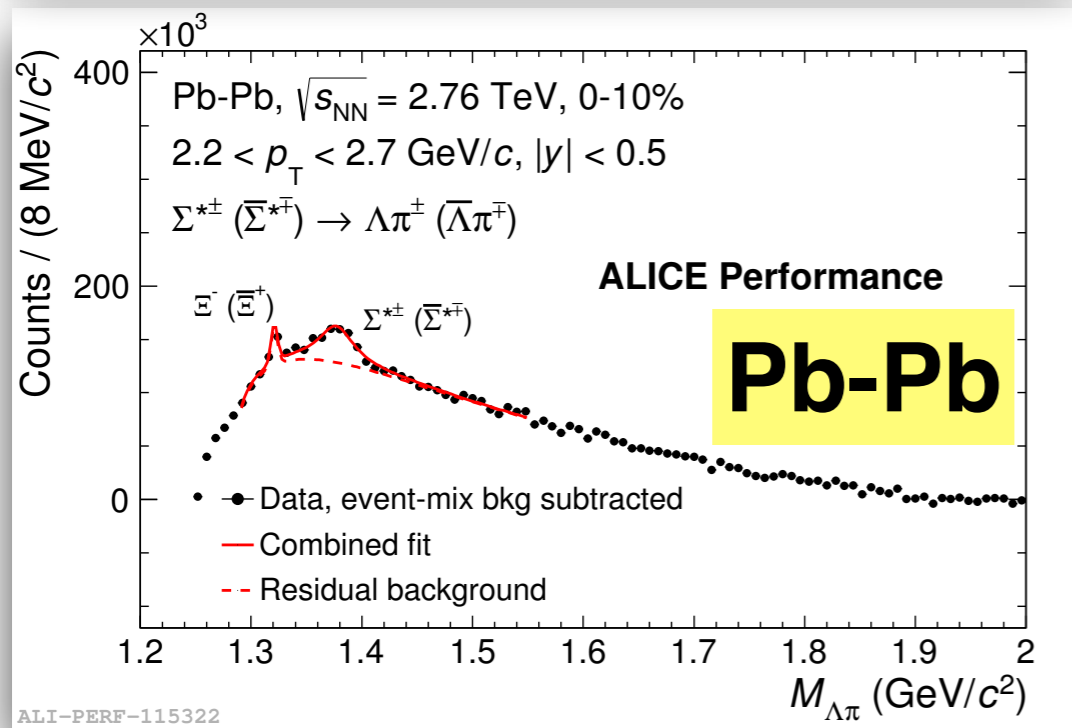
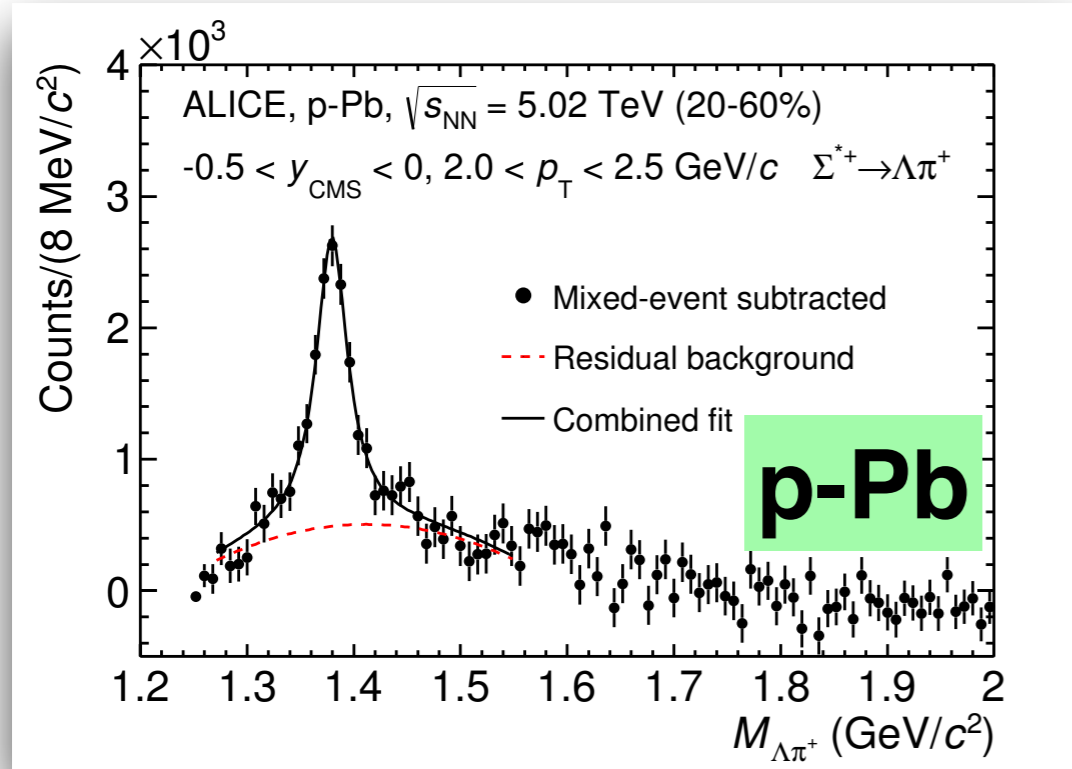
**Re-scattering:** elastic or (pseudo) elastic scattering through a different resonance

Lifetime(fm/c):  $\tau_\rho(1.3) < \tau_{K^*}(4.2) < \tau_{\Sigma^*}(5.5) < \tau_{\Lambda^*}(12.6) < \tau_{\Xi^*}(21.7) < \tau_\Phi(46.2)$

# Production of $\Sigma(1385)^\pm$

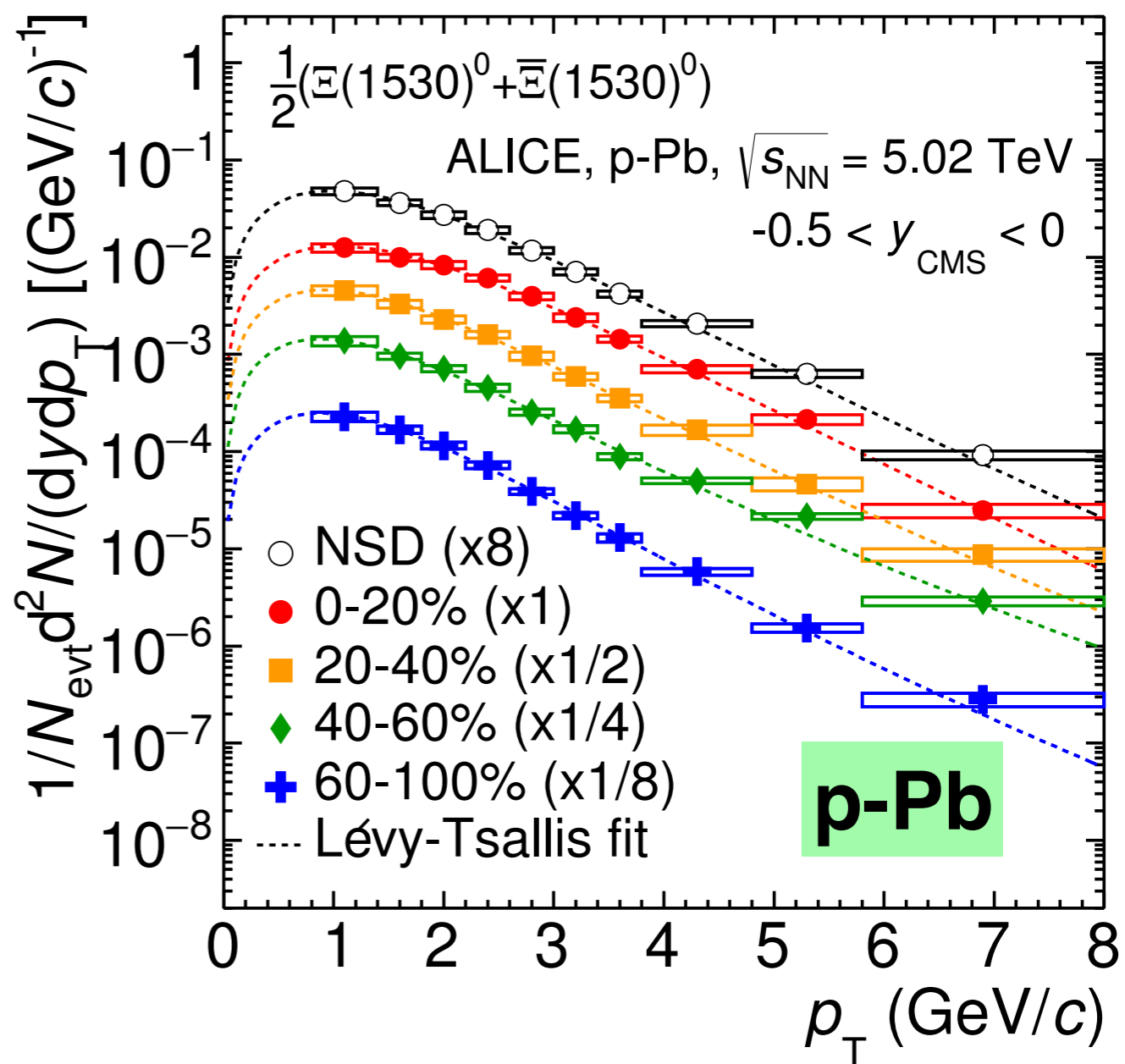
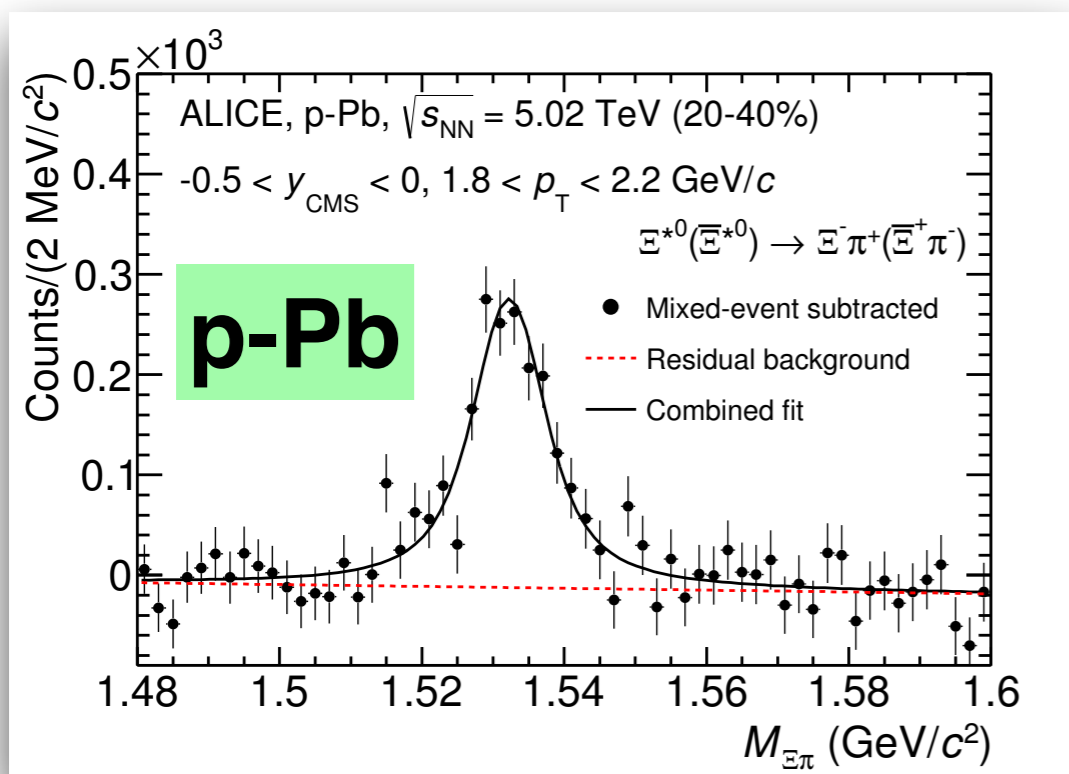


ALICE



arXiv:1701.07797

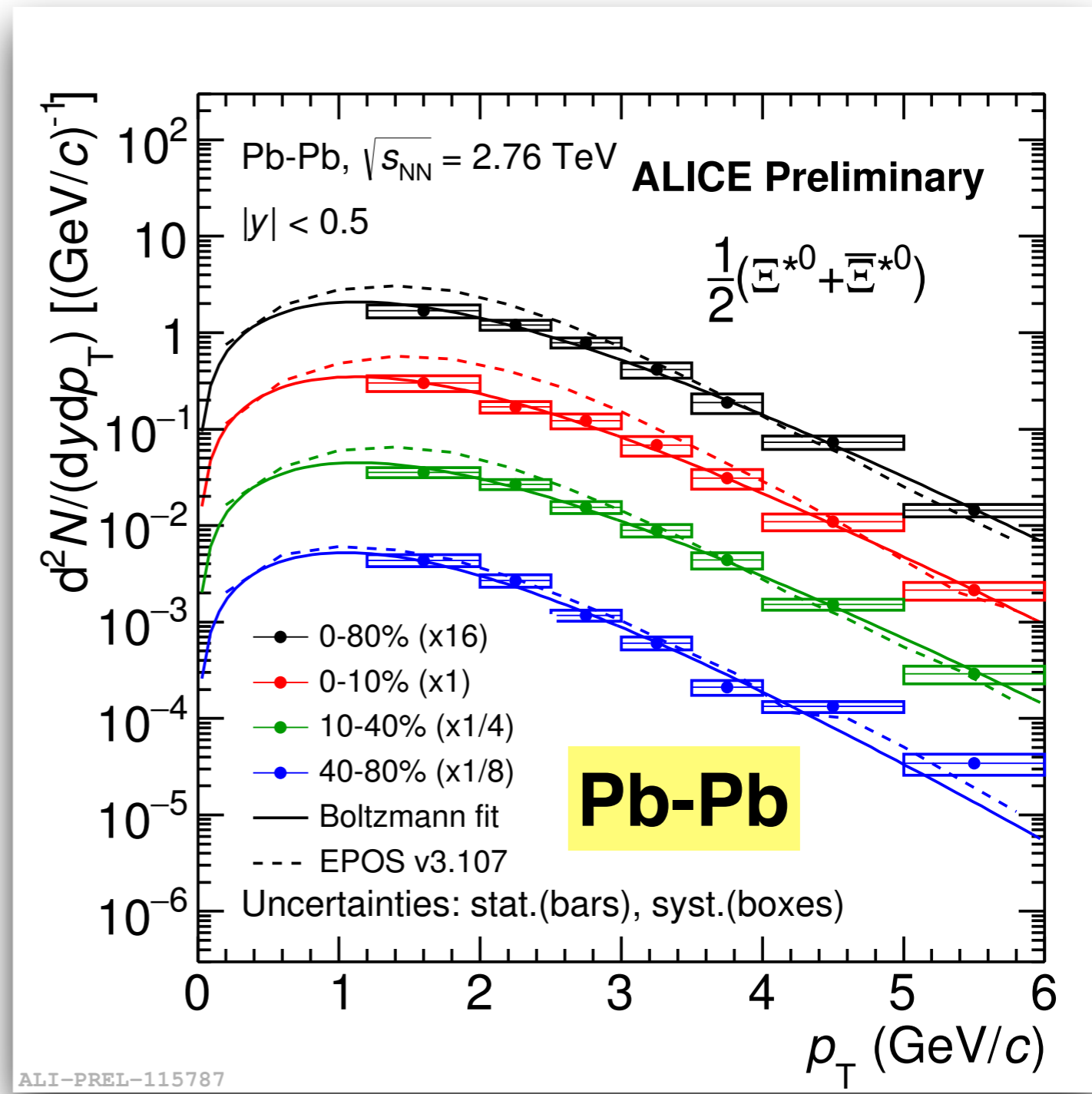
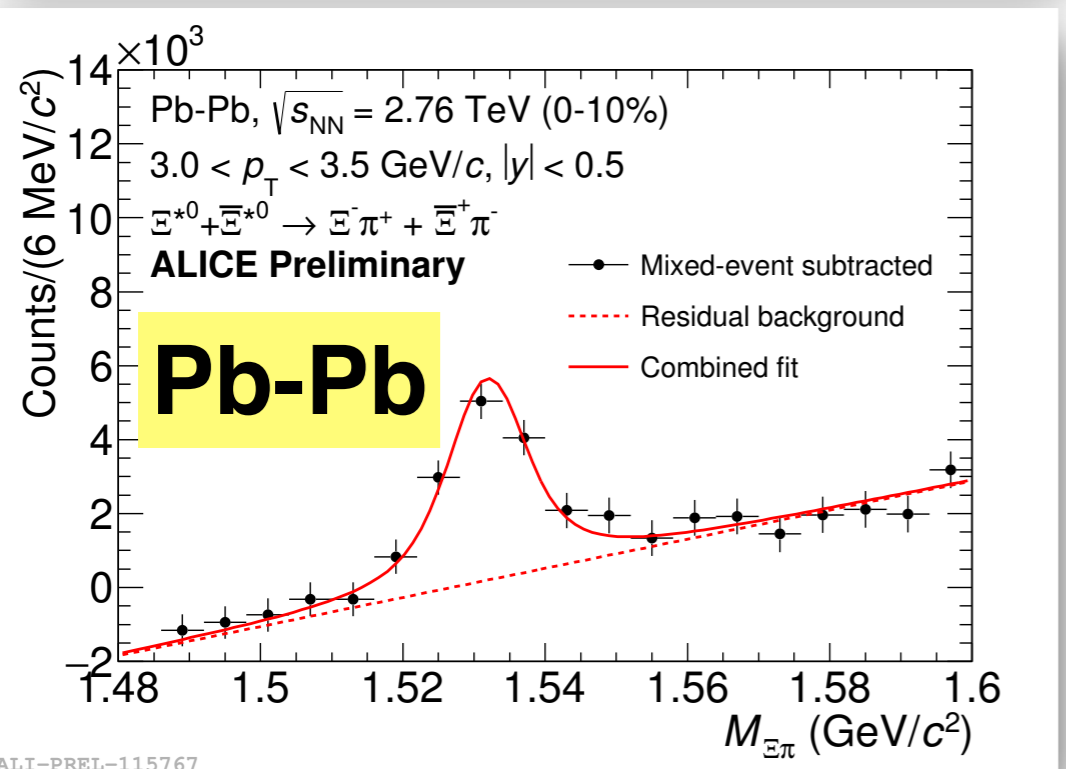
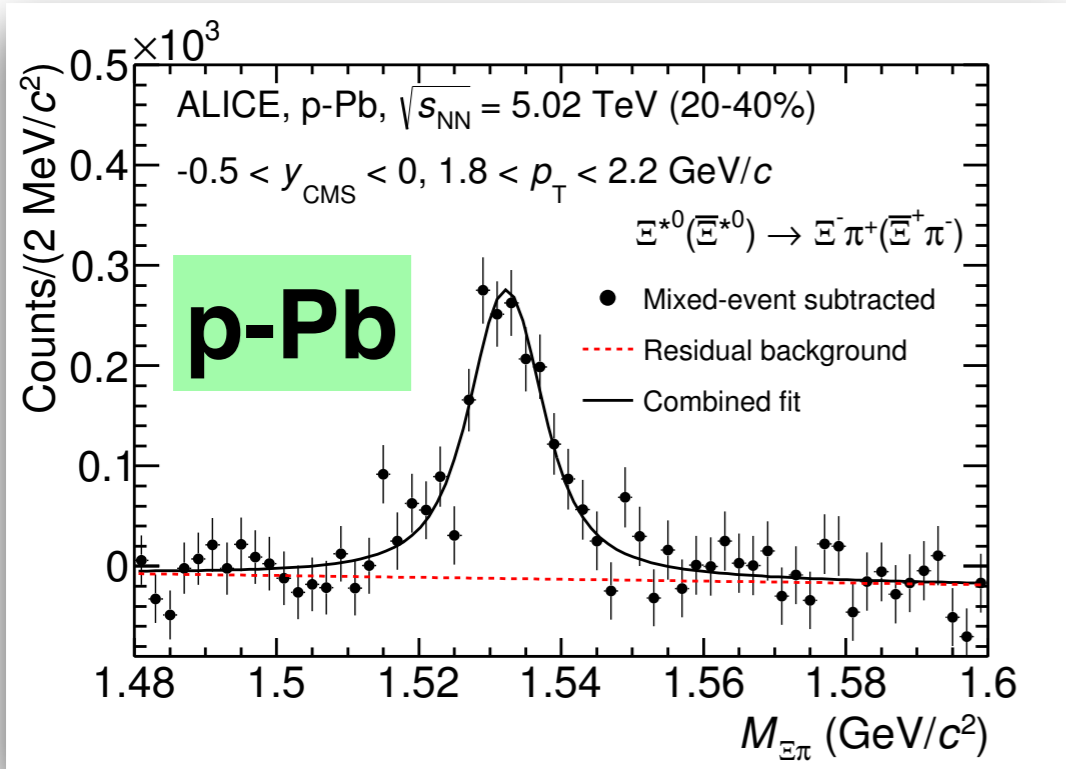
# Production of $\Xi(1530)^0$



# Production of $\Xi(1530)^0$



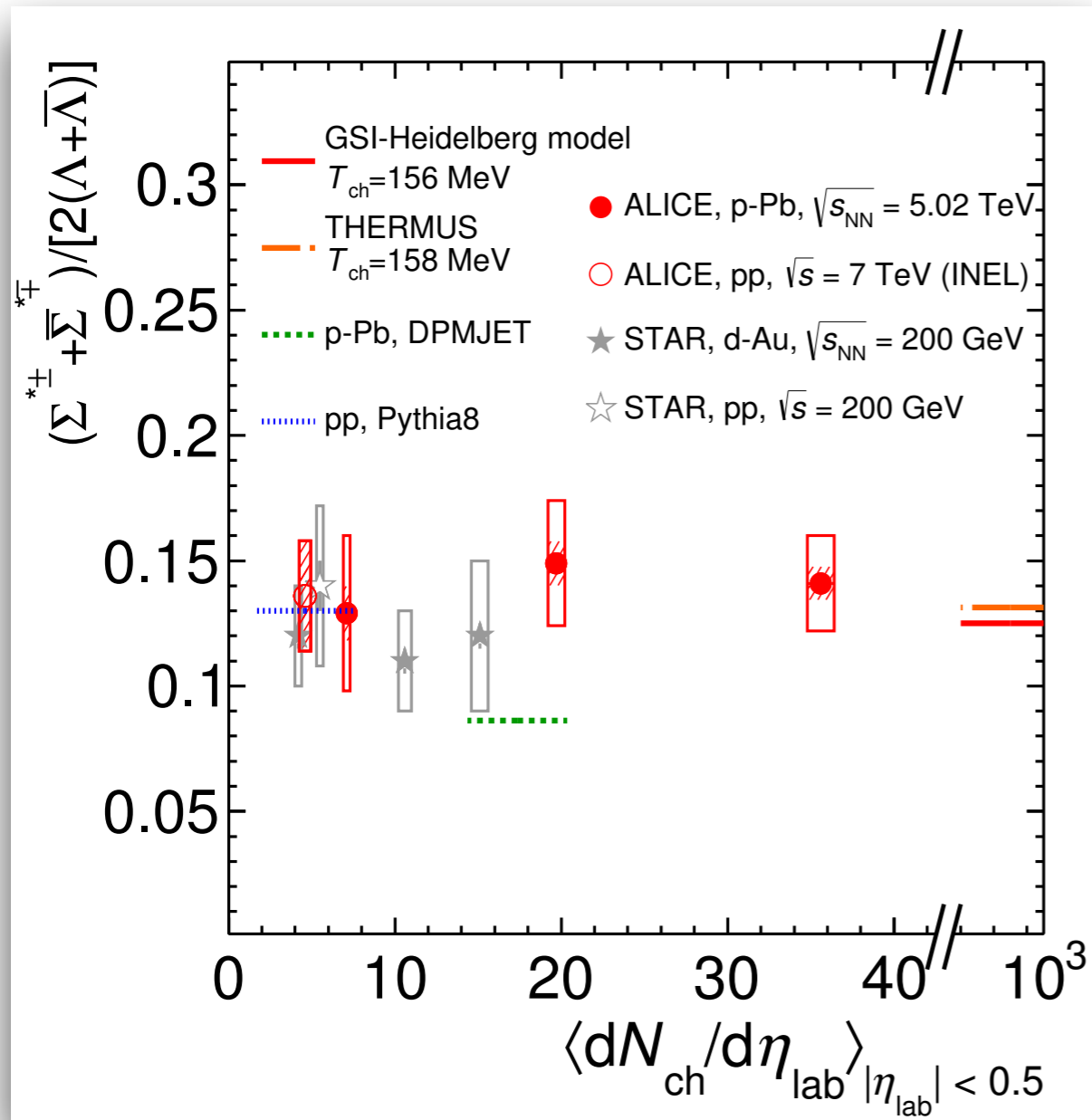
ALICE



ALI-PREL-115787

ALI-PREL-115767

# $\Sigma^{*\pm}/\Lambda$ ratio in pp and p-Pb

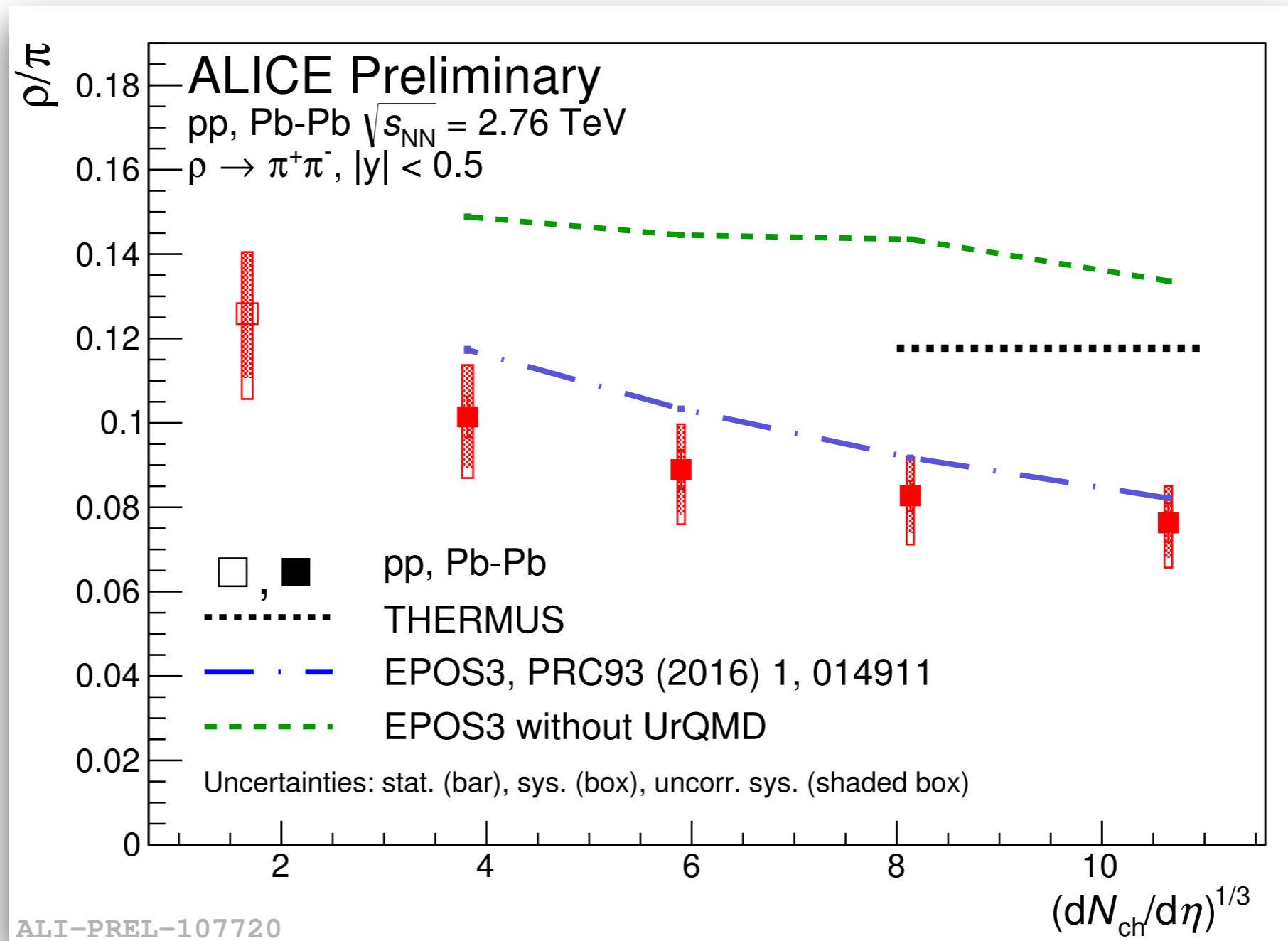


- no multiplicity dependence
- agreement with QCD-inspired model and thermal model predictions
- Measurement in Pb-Pb is ongoing

Lifetime(fm/c):  $\mathbf{T_p(1.3)} < \mathbf{T_{K^*}(4.2)} < \mathbf{T_{\Sigma^*}(5.5)} < \mathbf{T_{\Lambda^*}(12.6)} < \mathbf{T_{\Xi^*}(21.7)} < \mathbf{T_{\Phi}(46.2)}$

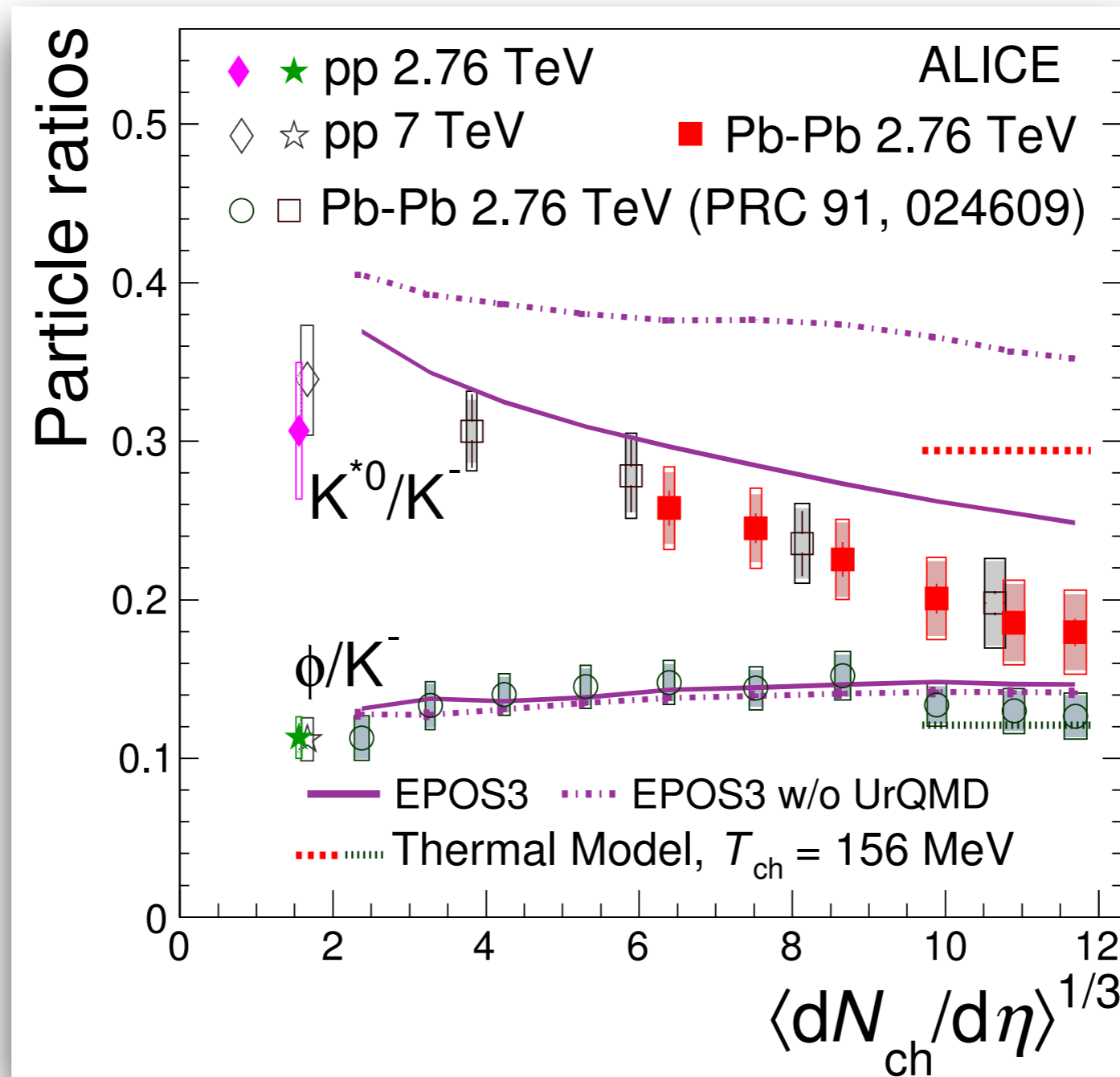


# Ratio of resonance yields in Pb-Pb



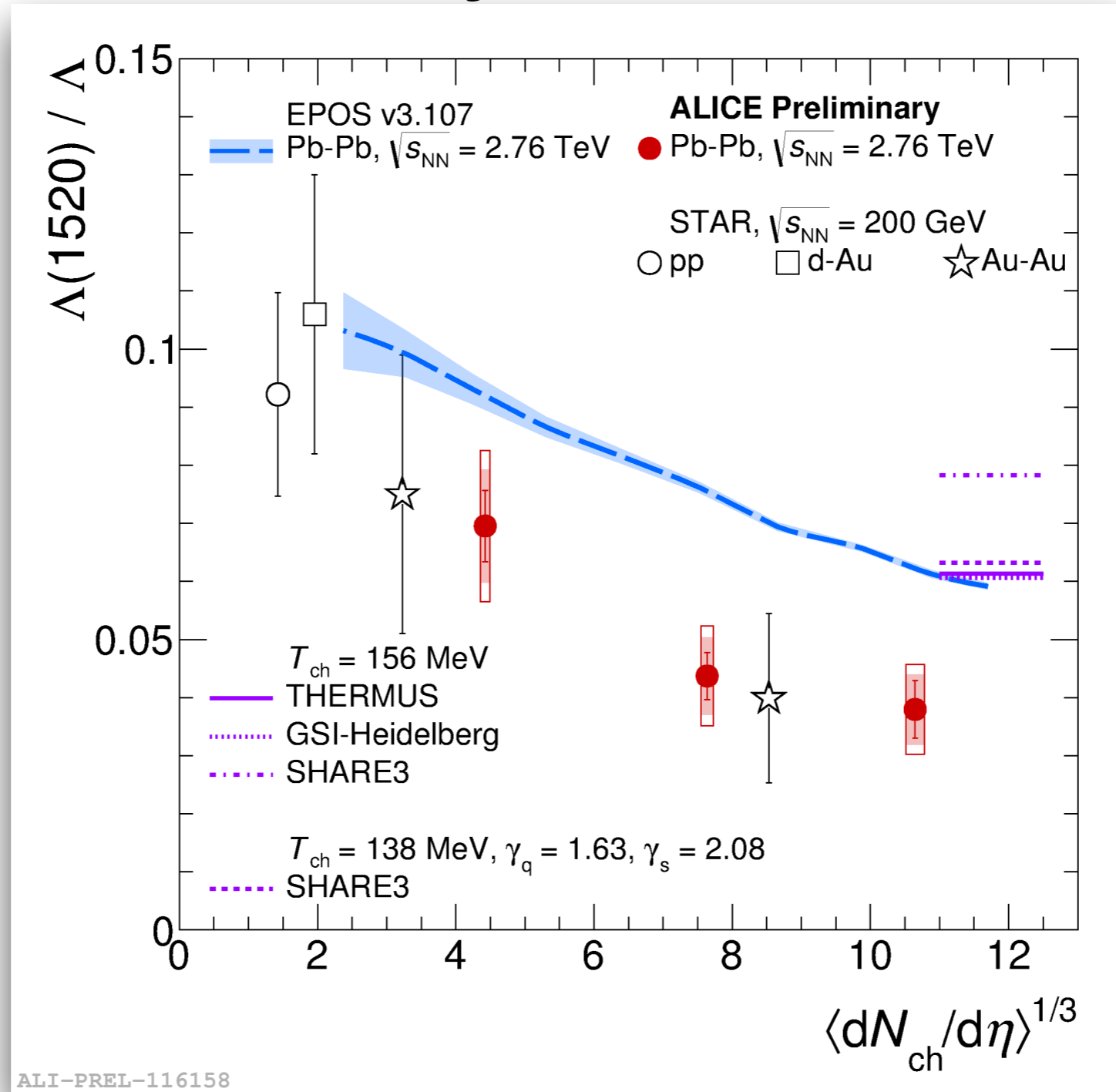
Lifetime(fm/c):  $\tau_\rho(1.3) < \tau_{K^*}(4.2) < \tau_{\Sigma^*}(5.5) < \tau_{\Lambda^*}(12.6) < \tau_{\Xi^*}(21.7) < \tau_\Phi(46.2)$

# Ratio of resonance yields in Pb-Pb



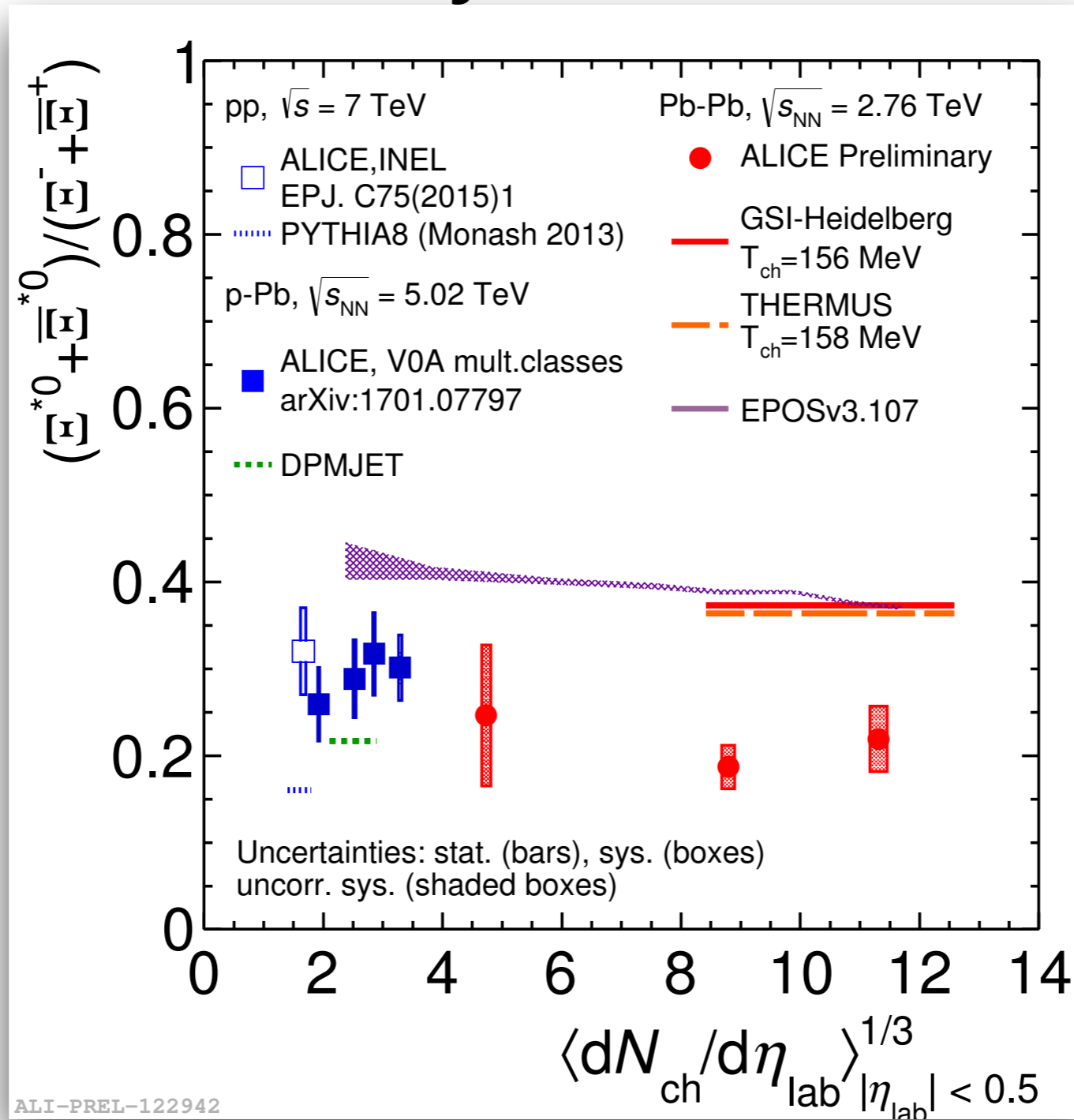
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# Ratio of resonance yields in Pb-Pb



Lifetime(fm/c):  $\mathbf{T}_\rho(1.3) < \mathbf{T}_{K^*}(4.2) < \mathbf{T}_{\Sigma^*}(5.5) < \mathbf{T}_{\Lambda^*}(12.6) < \mathbf{T}_{\Xi^*}(21.7) < \mathbf{T}_\Phi(46.2)$

# Ratio of resonance yields in Pb-Pb



Lifetime(fm/c):  $\tau_p(1.3) < \tau_{K^*}(4.2) < \tau_{\Sigma^*}(5.5) < \tau_{\Lambda^*}(12.6) < \tau_{\Xi^*}(21.7) < \tau_{\Phi}(46.2)$



# Backup

