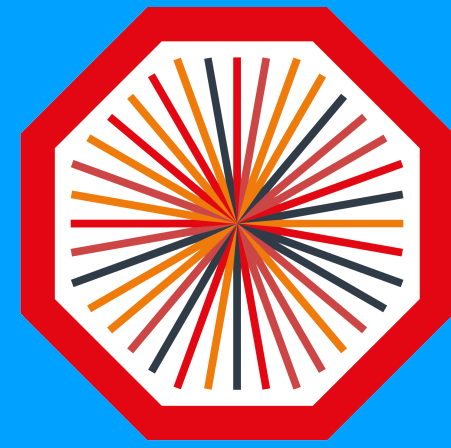


Rapidity dependence of K^{*0} and ϕ production in p-Pb

collisions with ALICE at the LHC

Sandeep Dudi on behalf of ALICE Collaboration

Panjab University, Chandigarh, INDIA



ALICE



Outline :

- ❖ Physics Motivation
- ❖ Results
- ❖ Summary



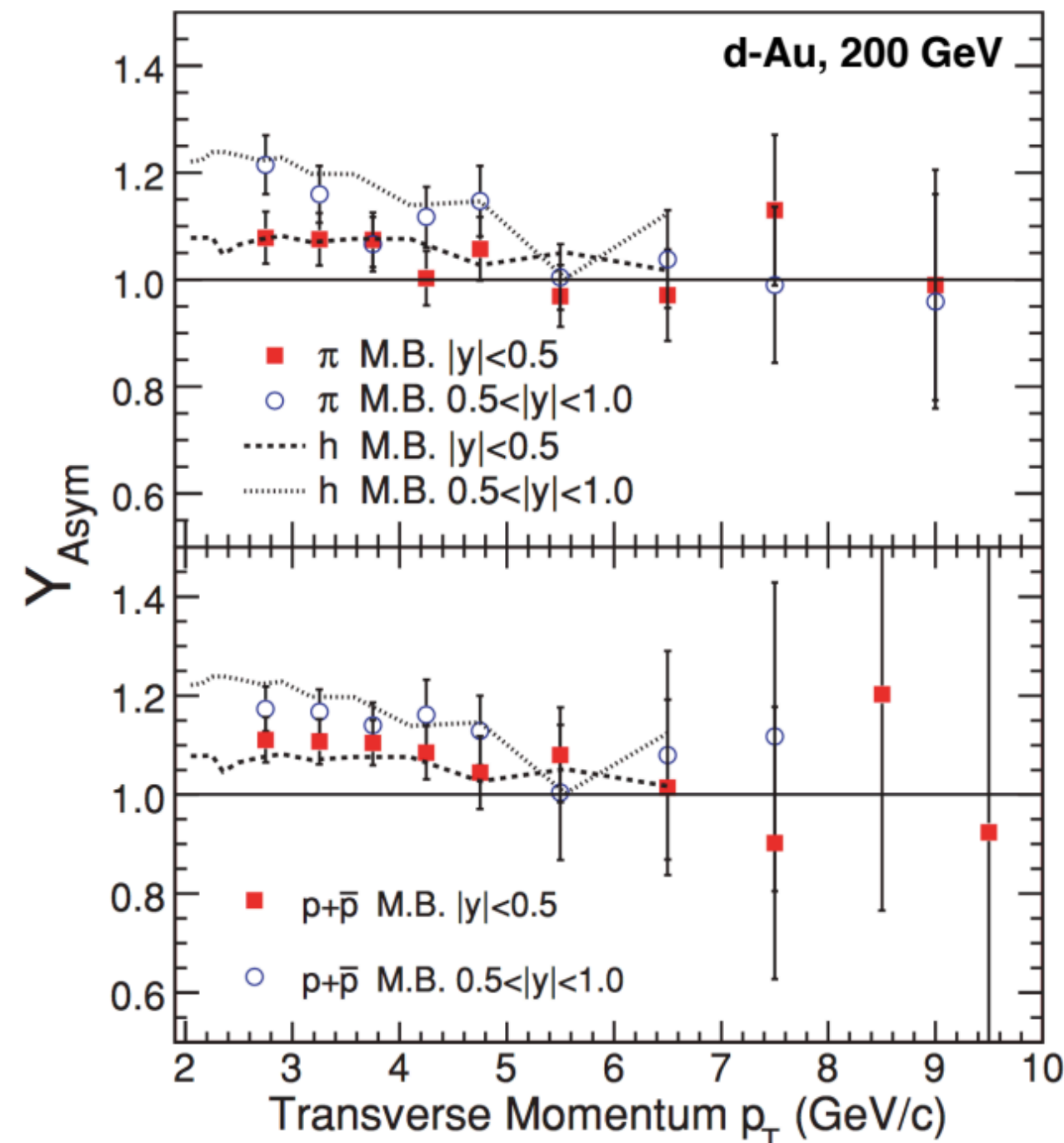
Physics Motivation

- In asymmetric collisions, the particle productions are different at forward and backward rapidities
- y_{asym} and Q_{CP} help to understand particle production mechanism due to the nuclear effects

Rapidity asymmetry (y_{asym})

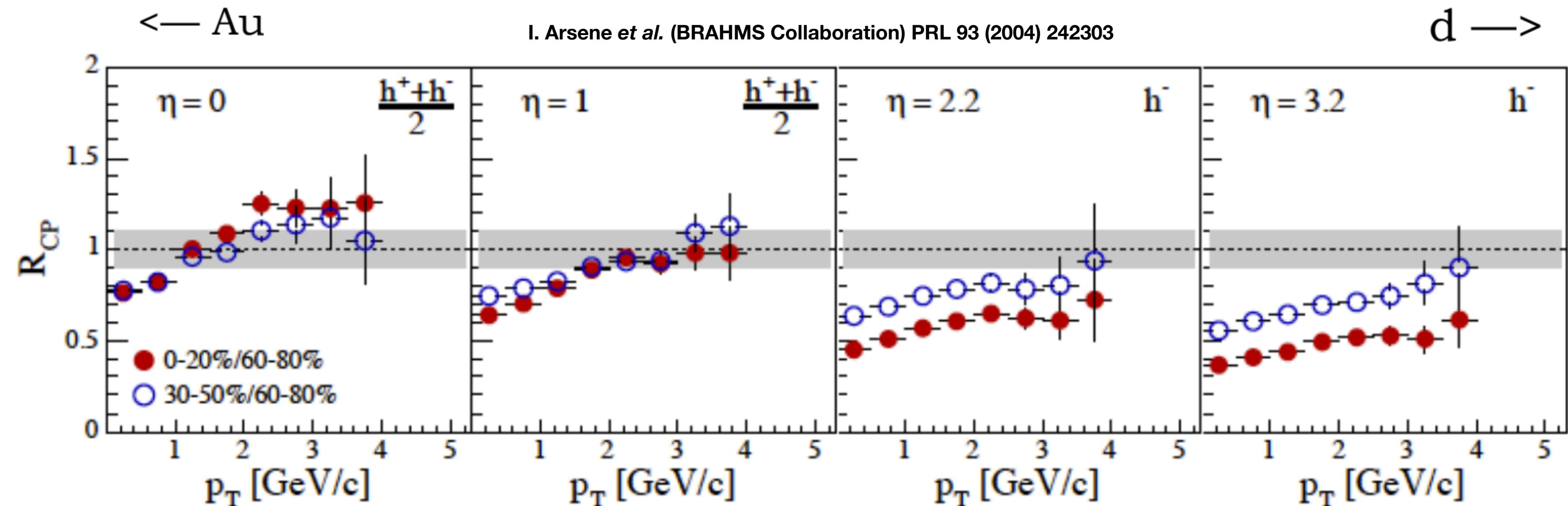
$$Y_{asym}(p_T) = \frac{Yield_{FR}(p_T)}{Yield_{BR}(p_T)}$$

B. I. Abelev et al. (STAR Collaboration) PRC 76 (2007) 054903



Nuclear modification factor (Q_{CP})

$$Q_{CP}(p_T) = \frac{d^2N/dp_T dy_{HM}(\langle N_{coll} \rangle)_{HM}}{d^2N/dp_T dy_{HM}(\langle N_{coll} \rangle)_{LM}}$$



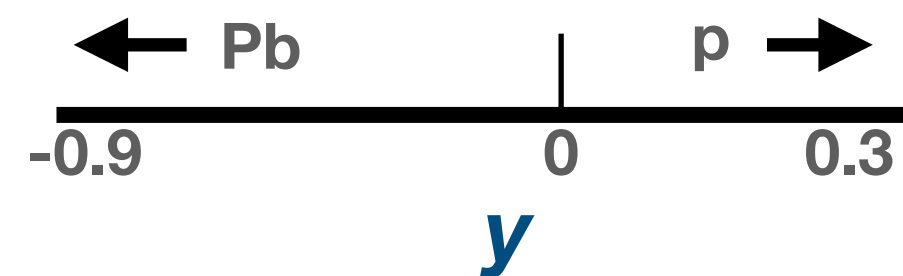
Results : p_T Spectra

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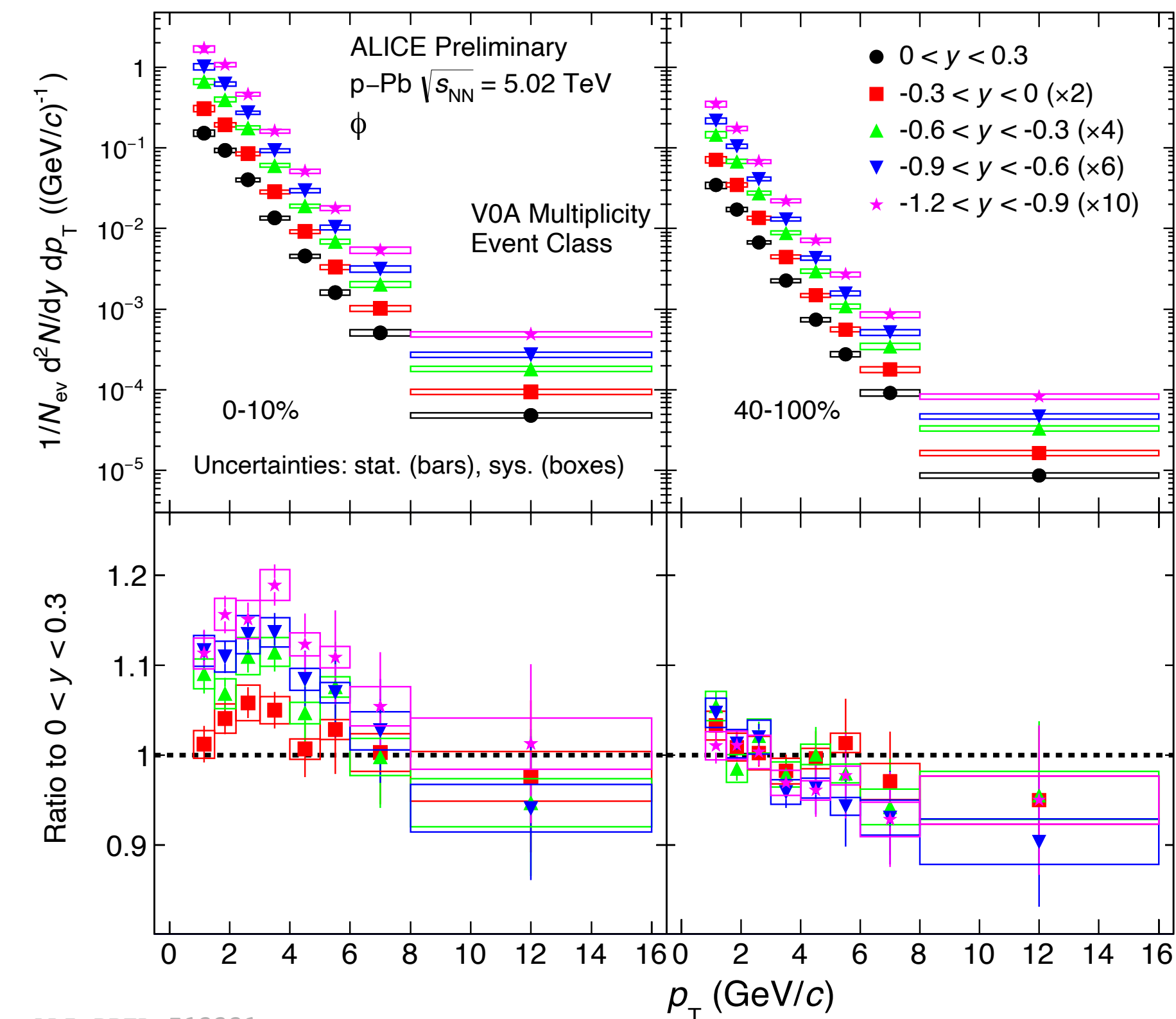
<https://cds.cern.ch/record/2805492>

New

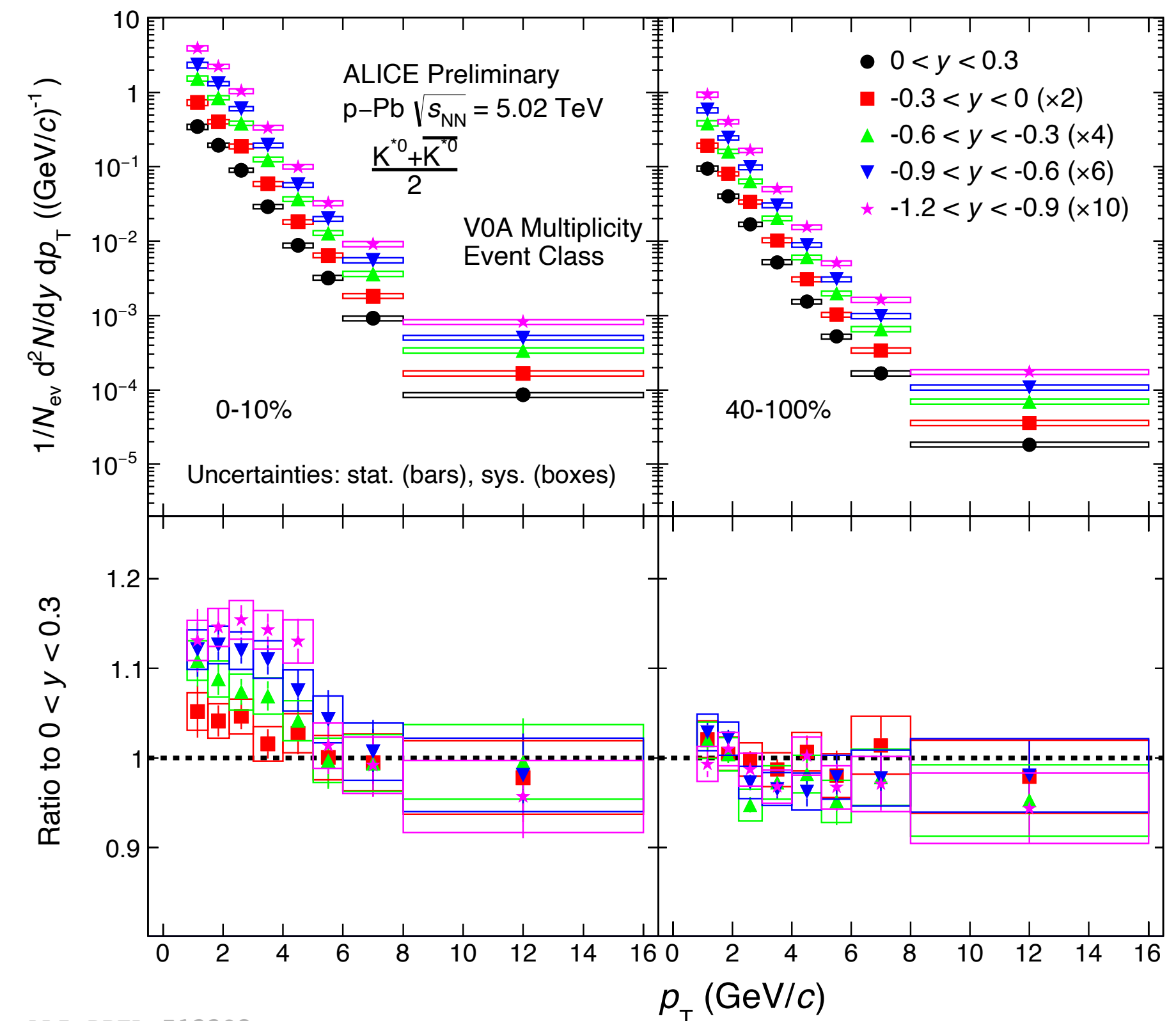
p-Pb
 $\sqrt{s_{NN}} = 5.02$ TeV



ϕ



K^*0

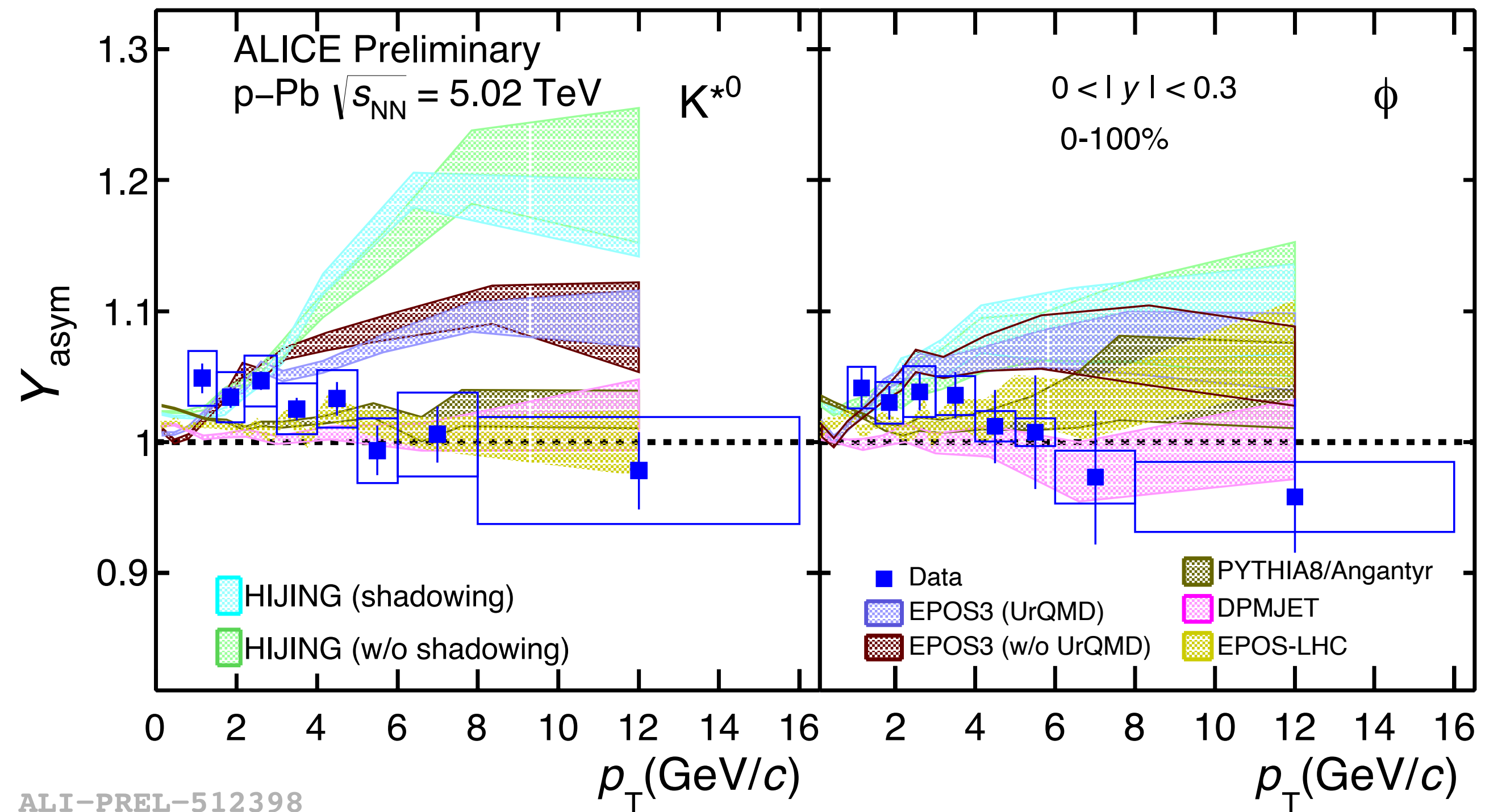
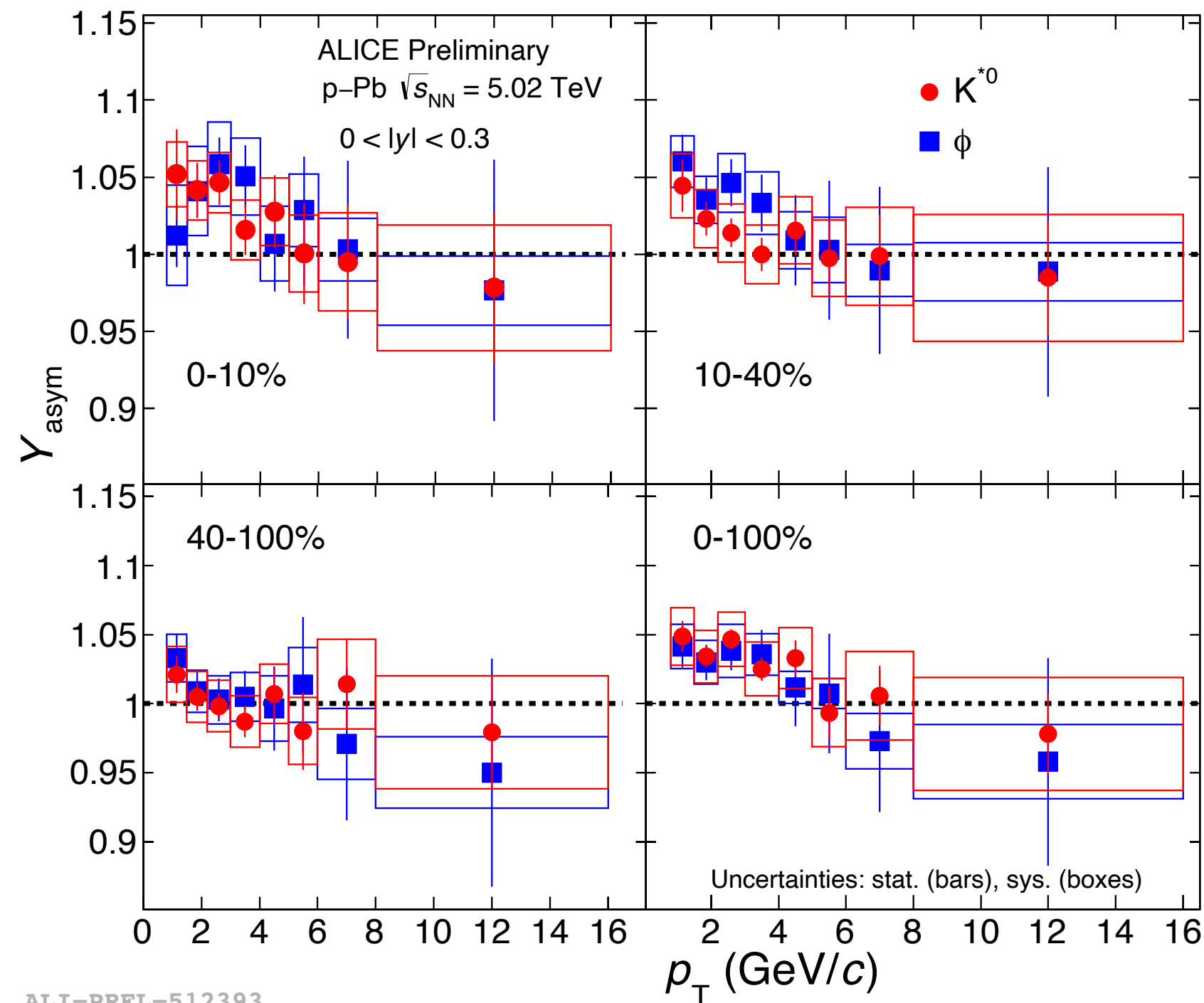


- ❖ Rapidity dependence is observed at low p_T for high multiplicity classes
- ❖ No significant rapidity dependence at high p_T for all multiplicity classes

Results : Rapidity asymmetry (Y_{asym})

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<https://cds.cern.ch/record/2805492>



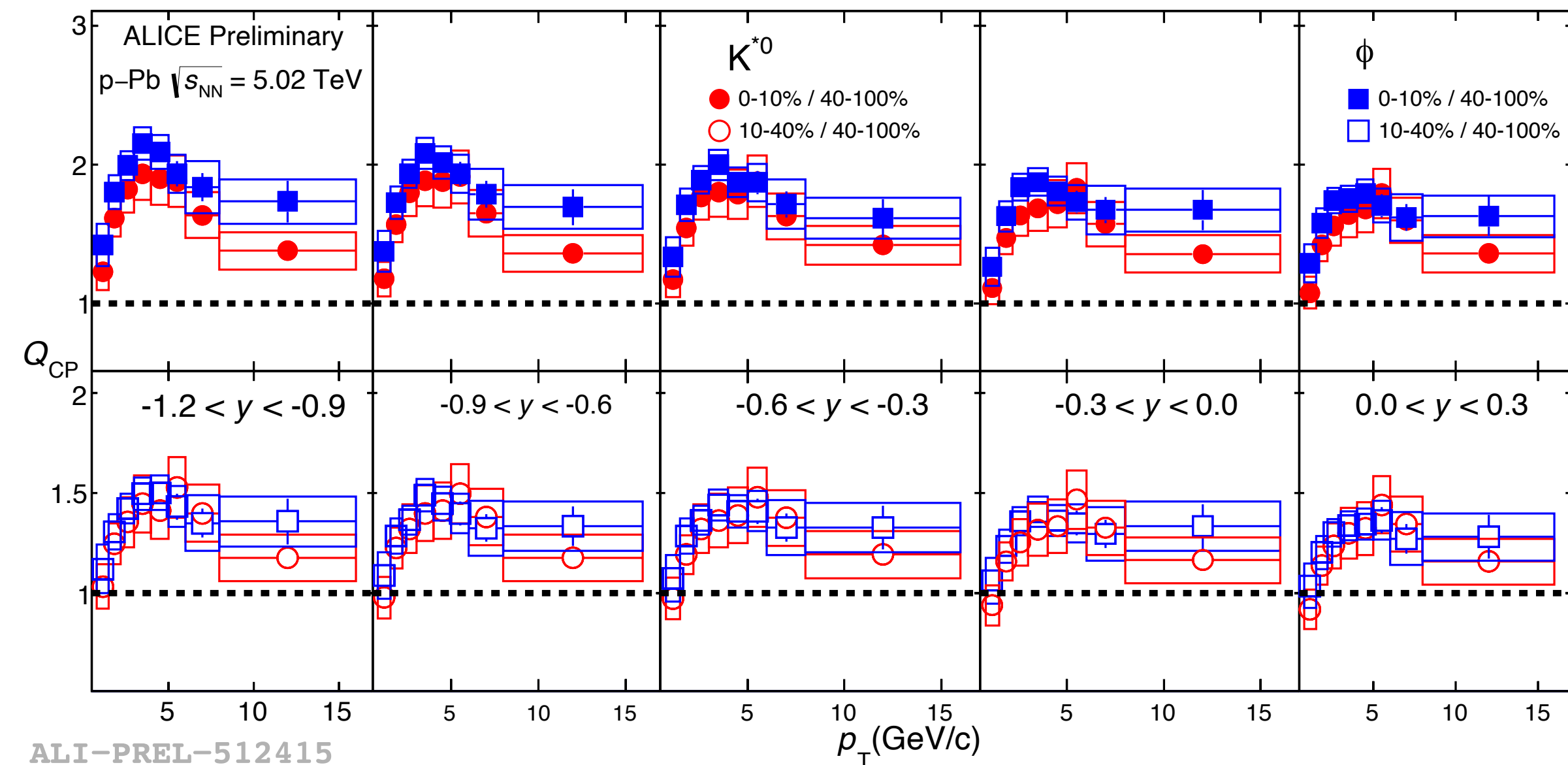
- ❖ Rapidity yield asymmetry is observed at low p_T , asymmetry increases from low to high multiplicity classes.
- ❖ No species dependence is observed.
- ❖ No model explains the data in the full measured p_T range.

Results : Nuclear Modification Factor (Q_{CP})

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<https://cds.cern.ch/record/2805492>

New



- ❖ At intermediate p_T , Q_{CP} increases with rapidity, Cronin like multiple scattering effects are more pronounced in high multiplicity classes.
- ❖ Nuclear effects are more prominent at higher rapidity and for high multiplicity classes

Summary :

- ❖ Rapidity dependence is studied for K^{*0} and ϕ mesons in p-Pb collisions at $\sqrt{s_{NN}} = 5.02$ TeV.
- ❖ Rapidity dependence is observed for both K^{*0} and ϕ at low p_T and high multiplicity classes.
- ❖ No model explains the y_{asym} data in full measured p_T range.
- ❖ No species dependence is observed in y_{asym} .
- ❖ Q_{CP} shows Cronin like effects at intermediate p_T and it is more prominent for the rapidity interval $-1.2 < y < -0.9$ and highest multiplicity class.

