

Updates on π^\pm -tagged jet A_{LL} with $\pi^\pm z > 0.2$

Spin&cold QCD weekly meeting

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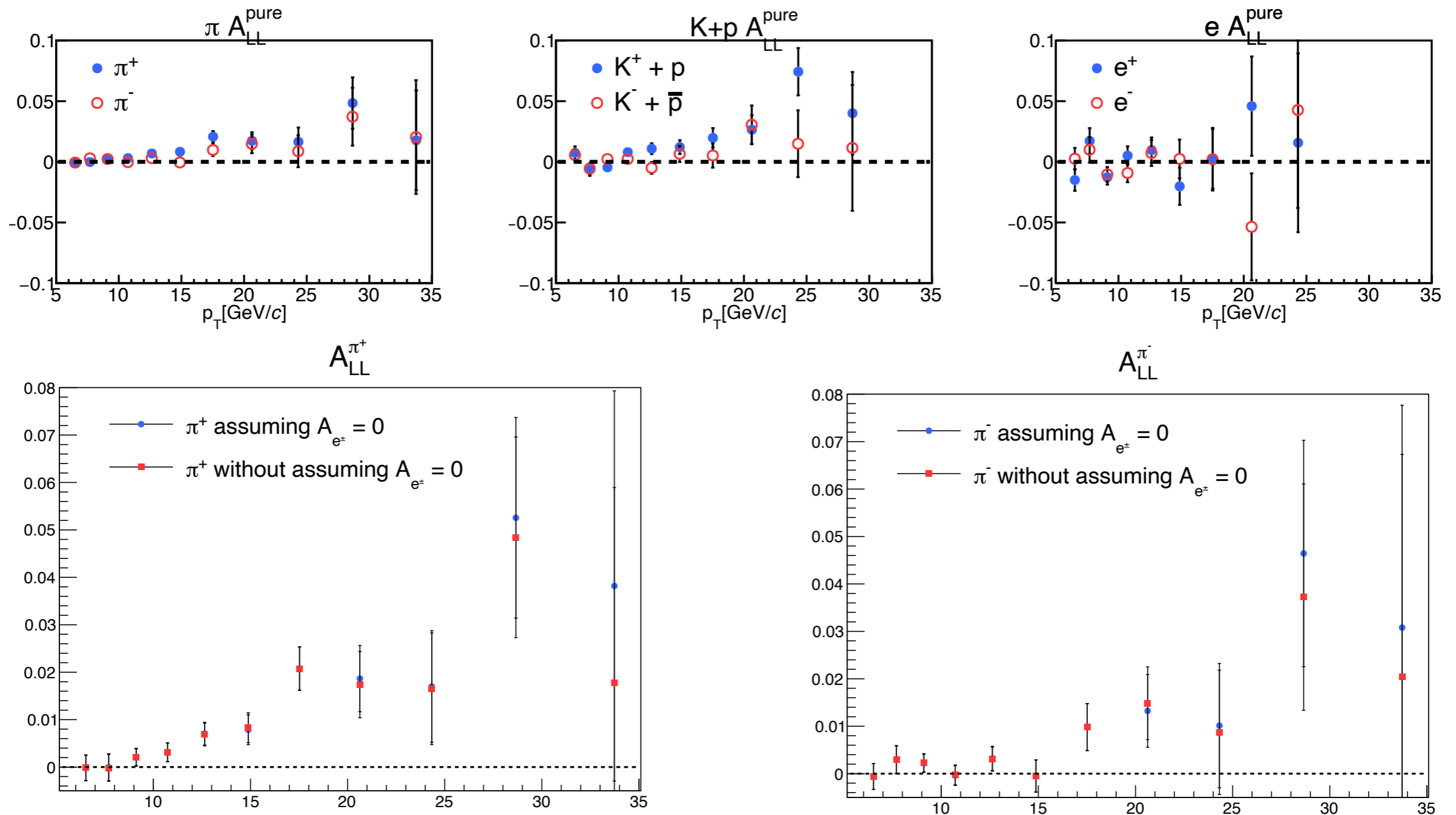




Main updates

- Including e^{\pm} when solving equations.
- An extra cut on in-jet tracks.
 - ▶ num of hits of dE/dx / num of hits > 0.5
- Check the difference between $A_{LL}^{\pi^+}$ and $A_{LL}^{\pi^-}$.
 - ▶ Two samples are partly correlated as π^+ and π^- may both pass the $z > 0.2$ cut in a same jet.
 - ▶ The overlap parts are not small.
- Classification of jets with both π^+ and π^- passing the $z > 0$ cut
 - ▶ if $z_{\pi^+} > z_{\pi^-} \rightarrow \pi^+$ -tagged jet. else π^- -tagged jet

A_{LL} with/without assuming $A_e = 0$

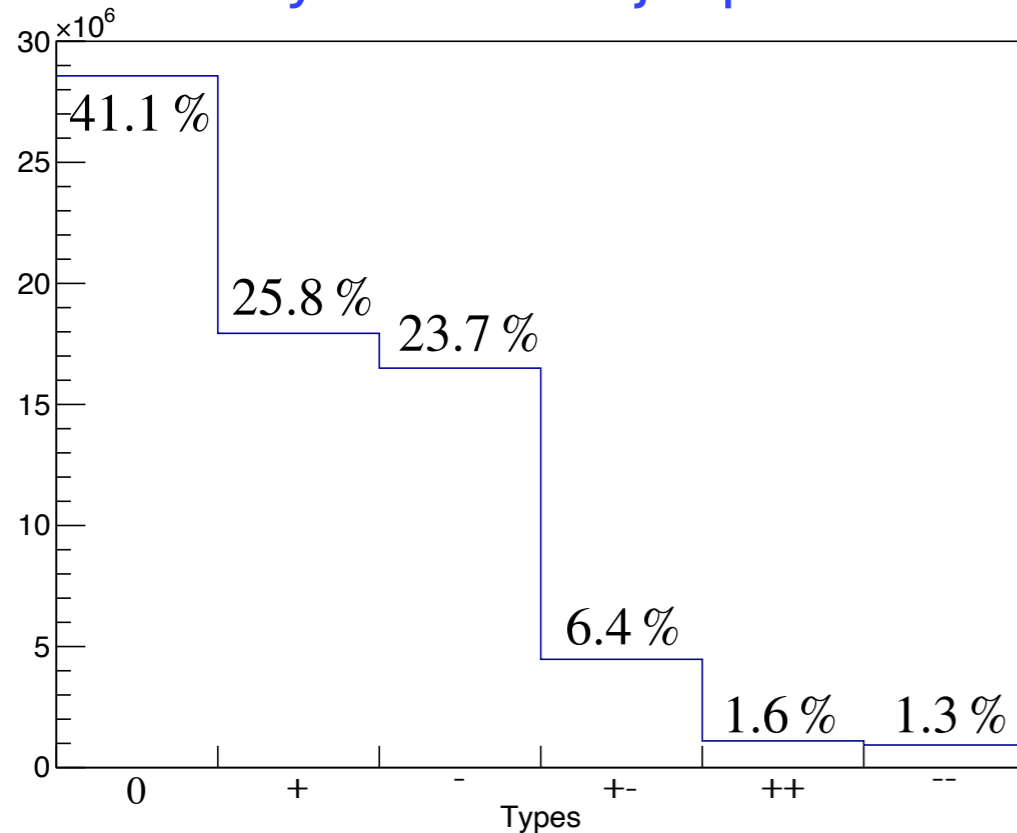


- Small impact to pion A_{LL} when including e^\pm .

Jets yields of different types



Jets yields for all jet pt bins

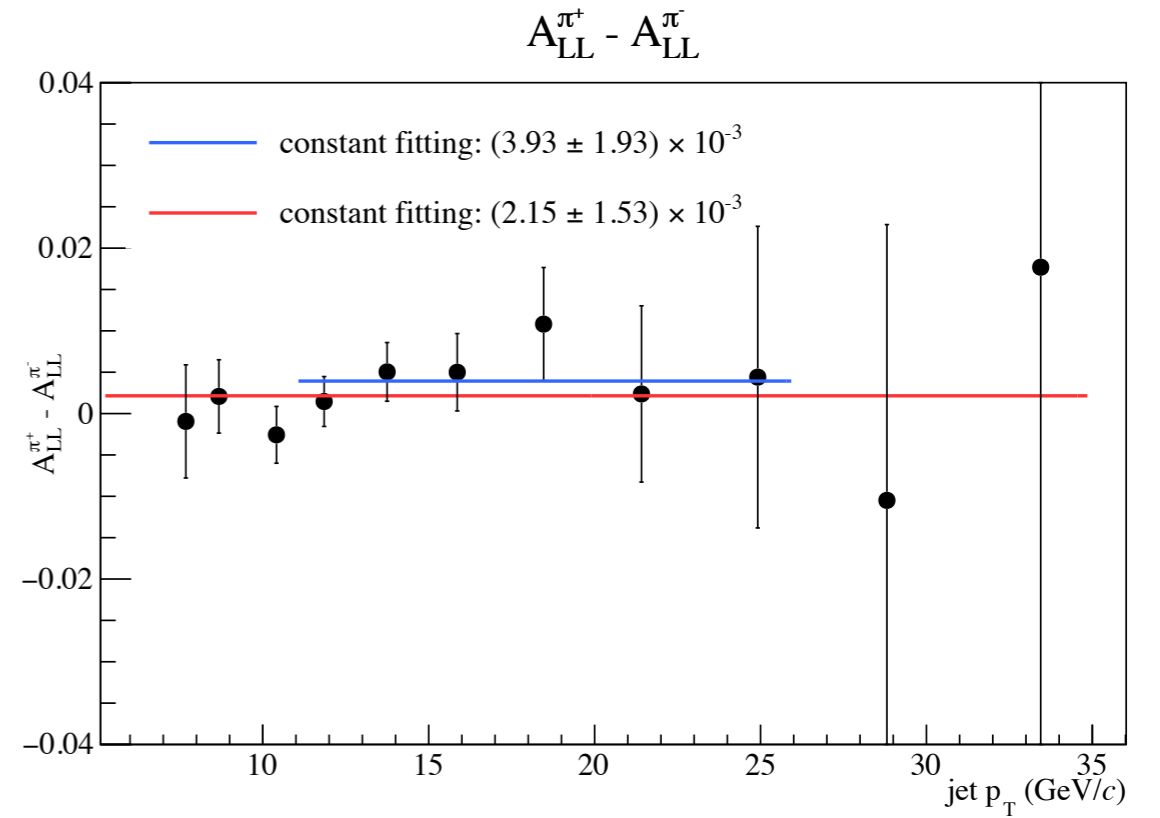
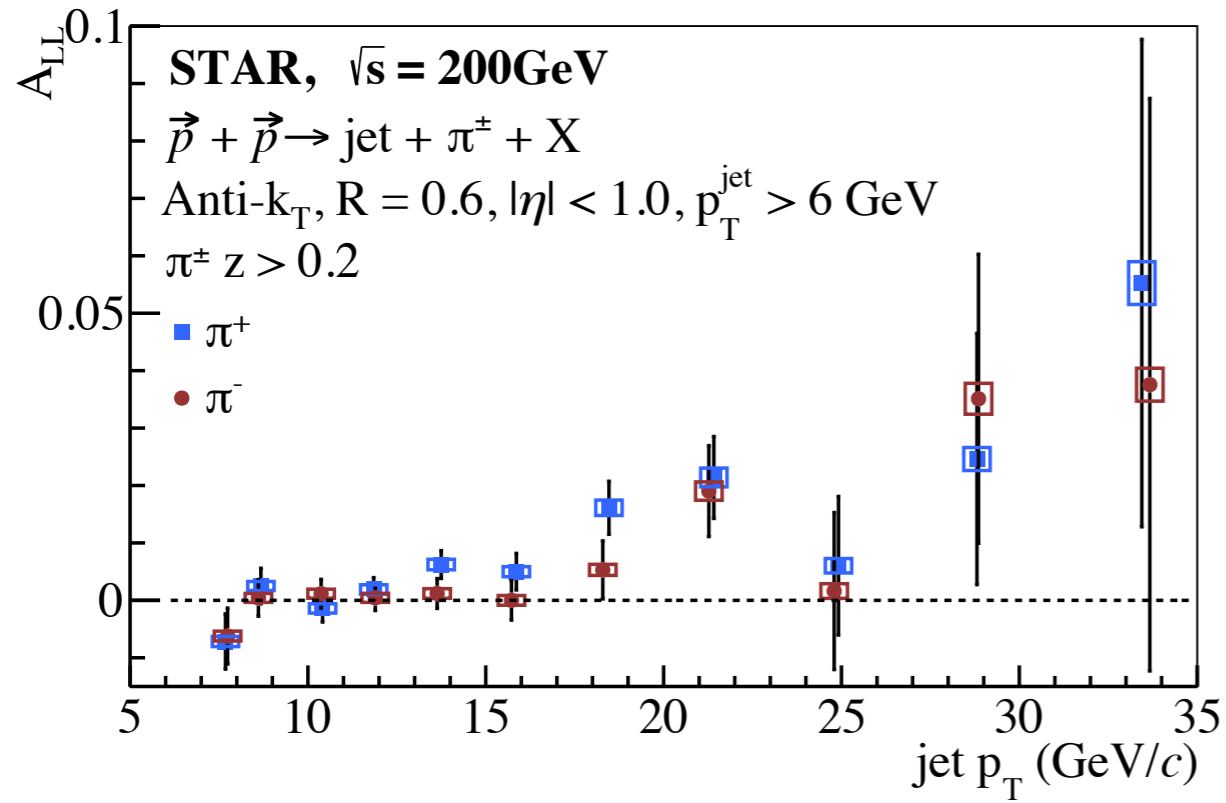


Convention:

- 0: no track passing $z > 0.2$
- +: only 1 positive track
- : only 1 negative track
- + -: 1 positive and 1 negative track
- ++: 2 positive tracks
- : 2 negative tracks

- Fraction of +- type jets (varies among jet pt bins)
 - ▶ 17% ~ 23% for π^+ -tagged jets
 - ▶ 16% to 34% for π^- -tagged jets
- +- type jets are classified by comparing the z values of π^+ and π^- .
 - ▶ if $z_{\pi^+} > z_{\pi^-} \rightarrow \pi^+$ -tagged jet. else π^- -tagged jet

Updated $A_{LL}^{\pi^{\pm}}$



Summary

- No significant impact when including e^\pm .
- The overlap jets are further classified based on the $\pi^\pm z$.
- Request the preliminary release of the updated result

