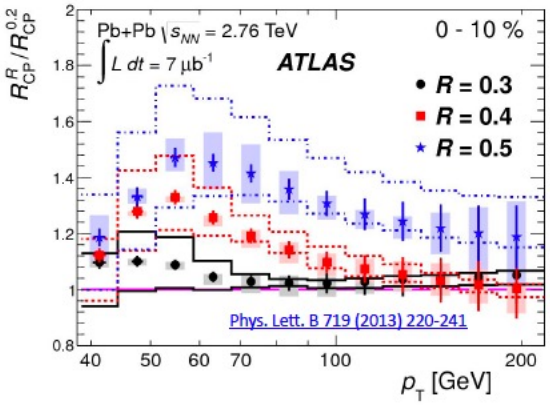
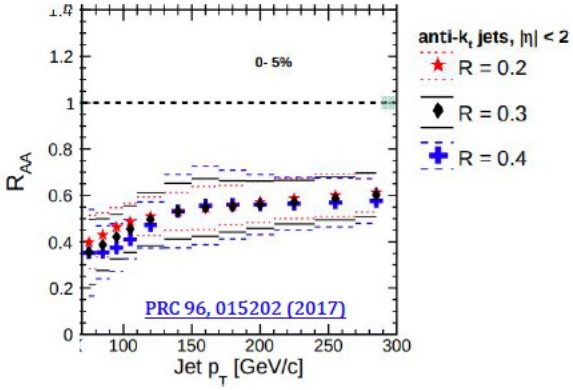
# Radial scan

Comparison of in[illegible]ets for different jet radii → [illegible] medium response vs flavo[illegible] + more resolved structure.

Small R suppressed

**What we know from past measurements…**




- The increase in RAA with jet *R* expected from theory: JHEP 0811:093,2008 and PLB 713 (2012) 224-232

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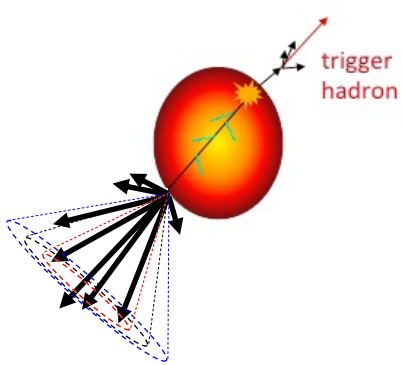
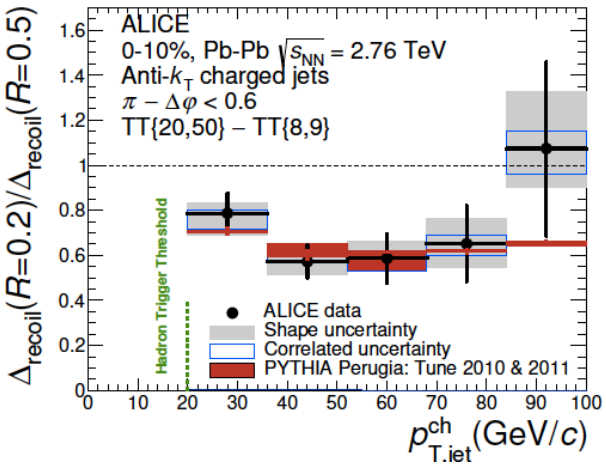
*ALICE: JHEP 09 (2015) 170*

No R-depenence

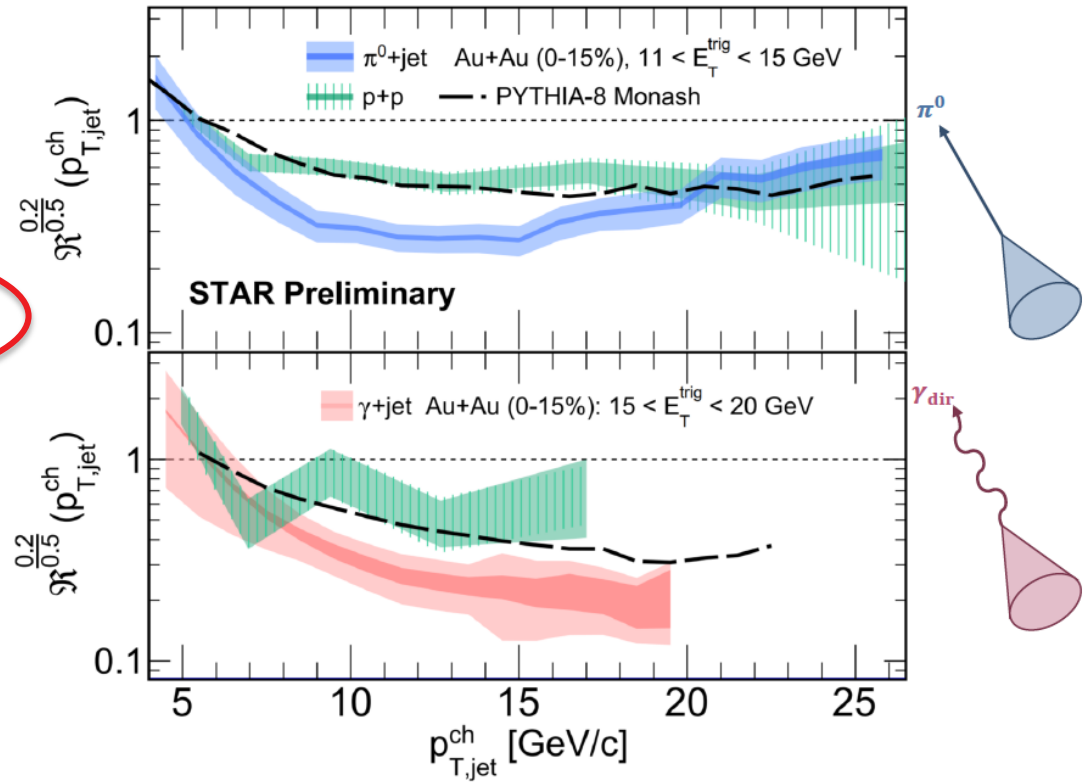


# $R$ dependence of recoil yields

$$\mathfrak{R}^{0.2/0.5} \equiv Y_{0.2}/Y_{0.5}$$

- $\mathfrak{R}^{0.2/0.5} < 1$ in $p$+$p$ **due to jet shape in vacuum**
  - PYTHIA−8 agrees with $p$+$p$ data
- Au+Au suppressed relative to $p$+$p$
  - ⇒ **Observation of medium-induced intra-jet broadening**
- **Note:** $E_T^{trig}$ and trigger type differ between panels
  - **Upper:** 11 – 15 GeV $\pi^0$
  - **Lower:** 15 – 20 GeV $\gamma_{dir}$
- $p$+$p$ style different
  - **Hatched band:** systematic uncertainty



# *R*-dependence via $R_{AA}$ ratios

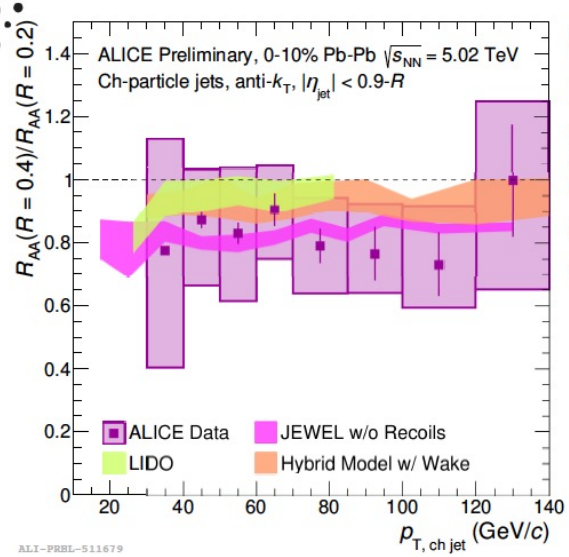
Central (0-10%)

ALICE

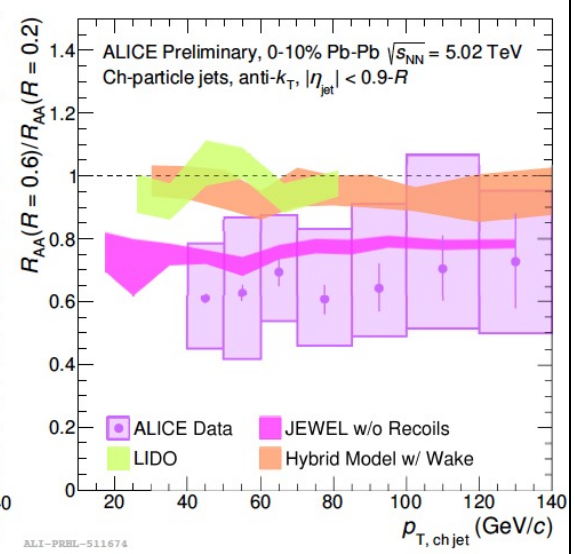
New for QM

- *R*-dependence of the $R_{AA}$ is a useful and discriminative measurement when compared to models.
- No evidence of *R*-dependence between *R* = 0.2 and *R* = 0.4.

*R* = 0.4 / *R* = 0.2




*R* = 0.6 / *R* = 0.2




***R* = 0.6 jets appear more suppressed than *R* = 0.2 jets, suggesting an *R*-dependence.**

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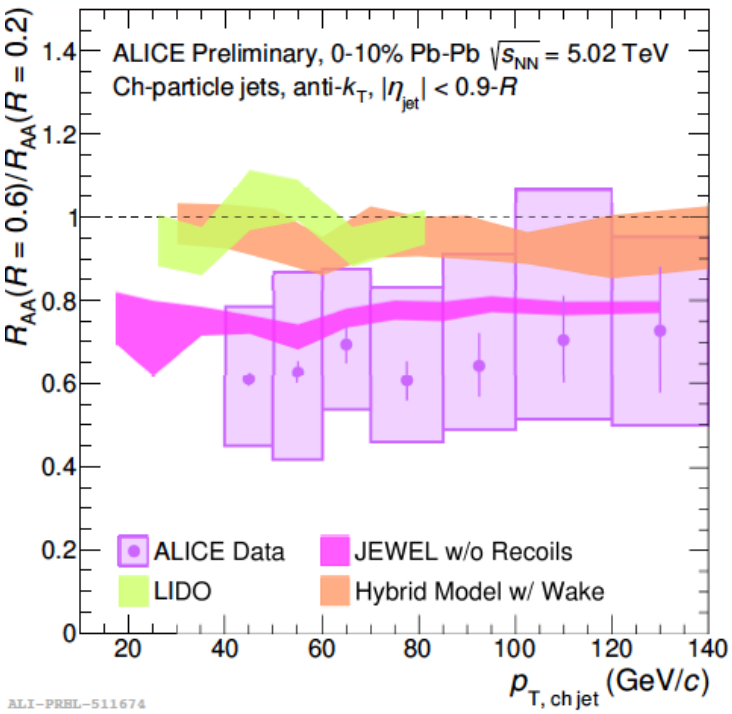
# Compare yield ratios

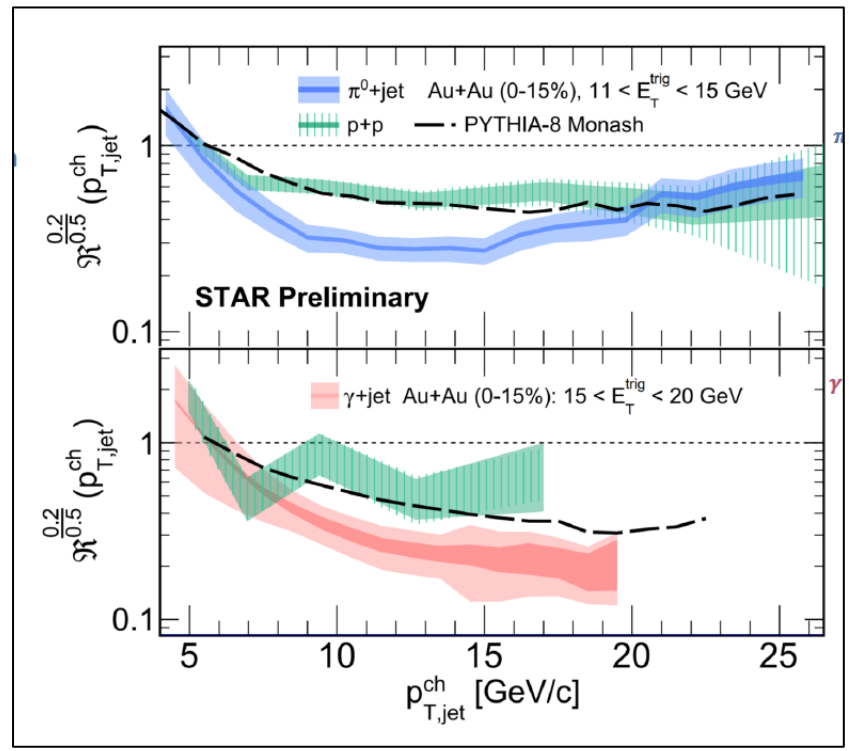
Inclusive jets, Pb+Pb@5 TeV

$\pi^0/\gamma$ + jet, Au+Au@200 GeV

$R = 0.6 / R = 0.2$

R=0.2/R=0.5

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Large-R jets more suppressed

Small-R jets more suppressed