

Energy flow in jets in pp and Pb-Pb collisions with ALICE

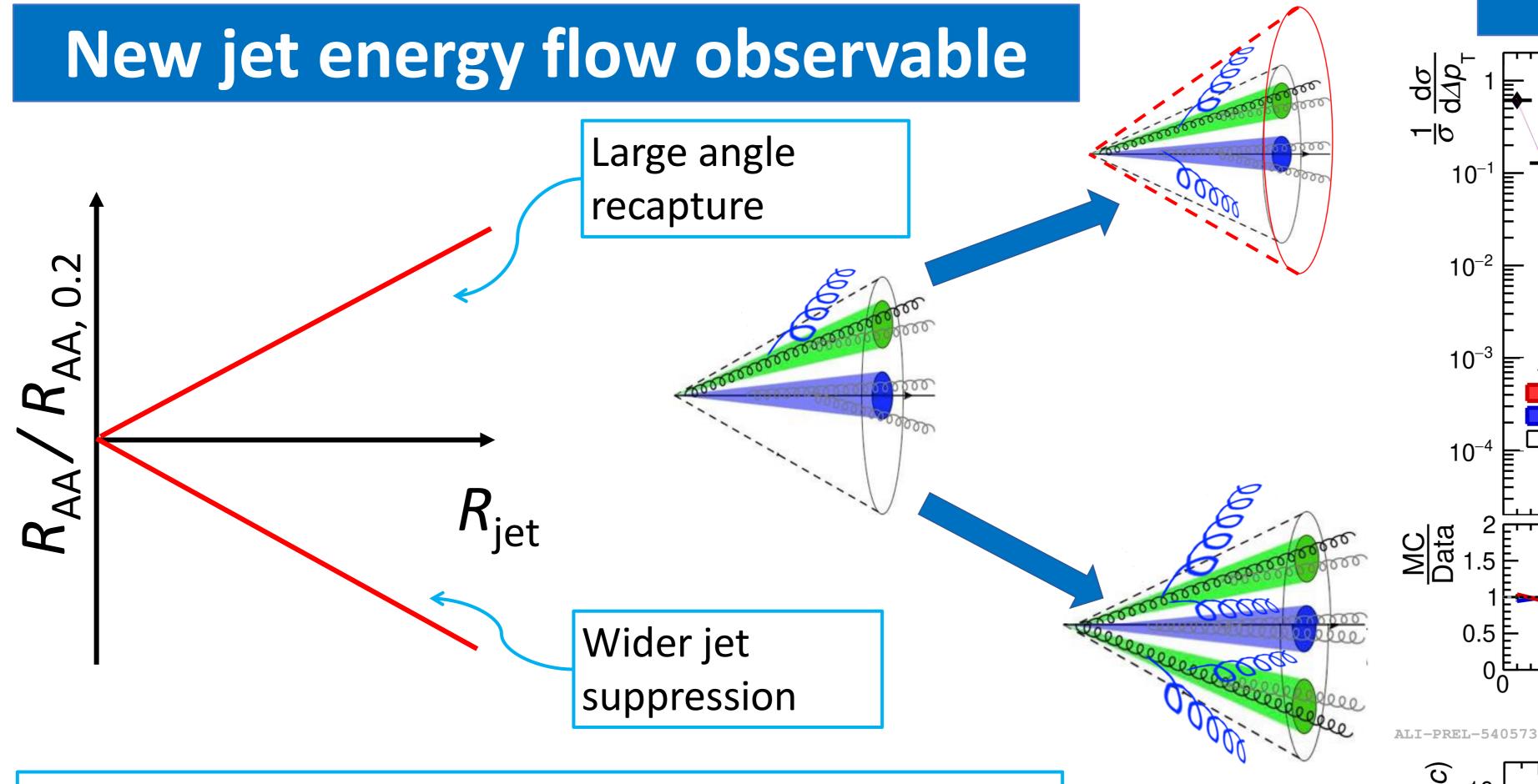
Christos Pliatskas on behalf of the ALICE collaboration

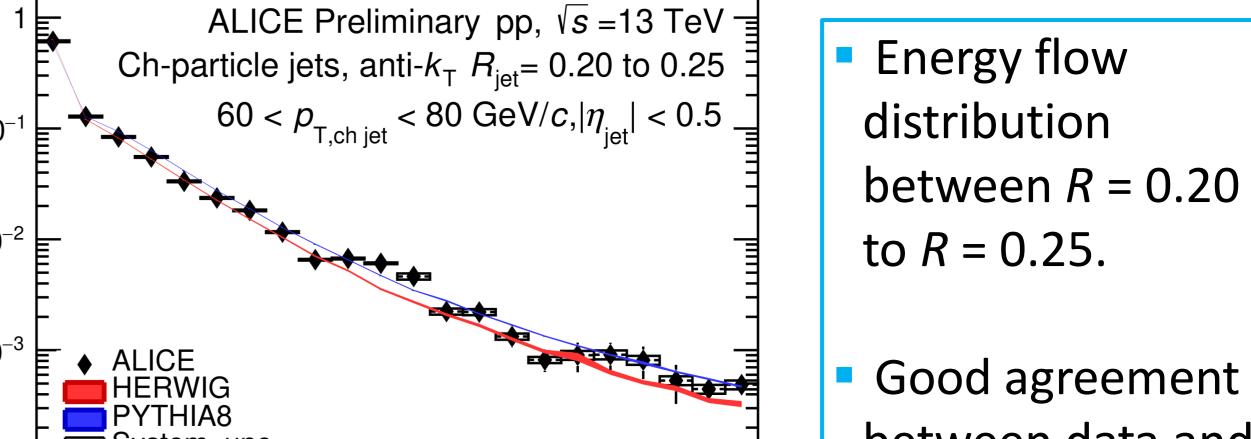
 $\langle \mathit{\Delta}p_{_{\mathsf{T}}} \rangle \, (\mathsf{GeV}/c)$

MC-Data Data



Comparison with models

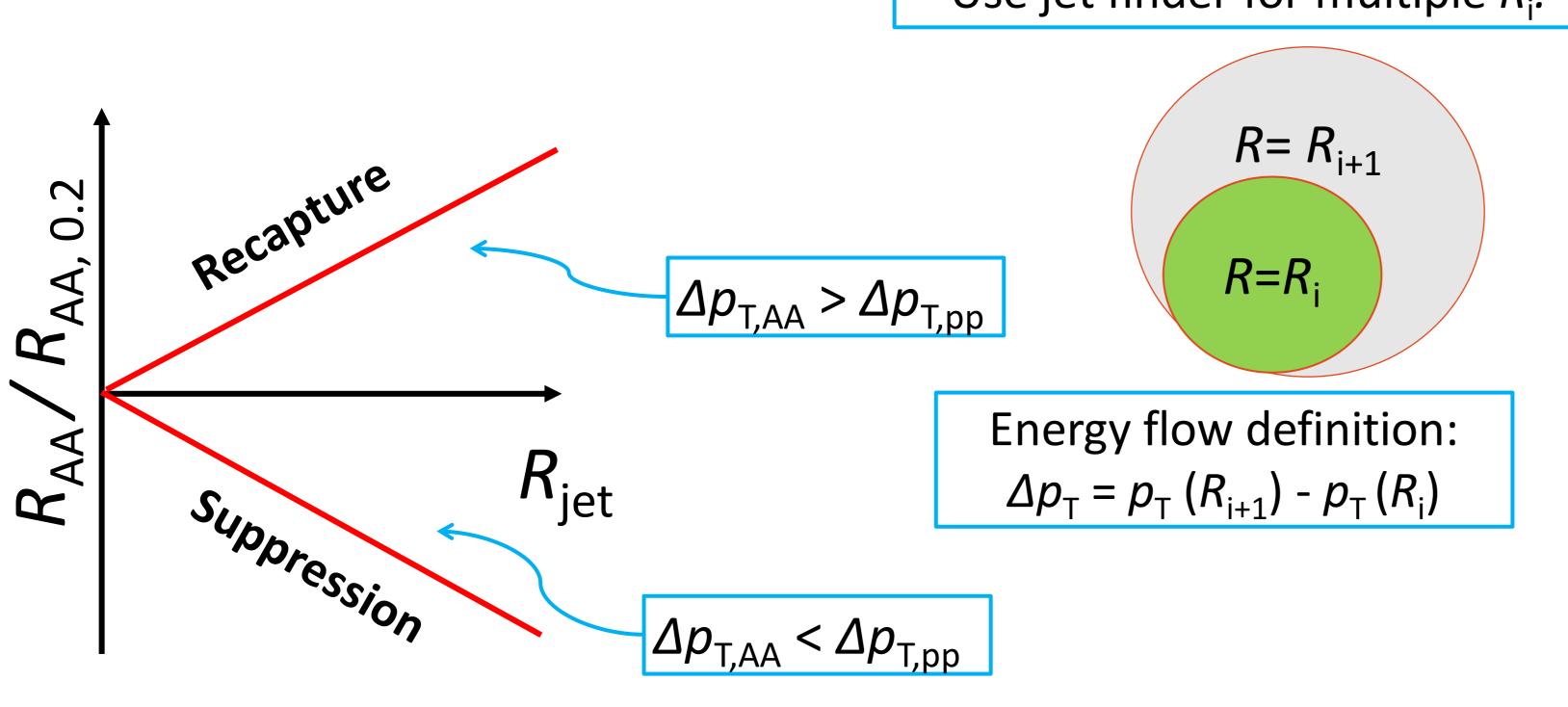


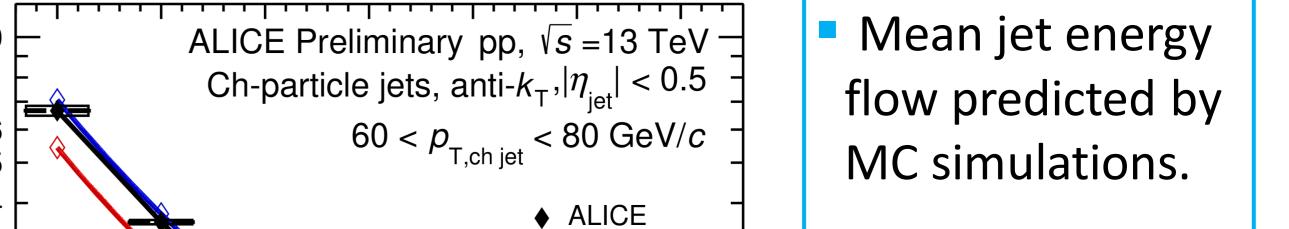


Good agreement between data and

MC simulations.

- Wider parton showers -> More radiation sources.
- Induced radiation recaptured at large angles.
 - Use jet finder for multiple R_i .





HERWIG

PYTHIA8

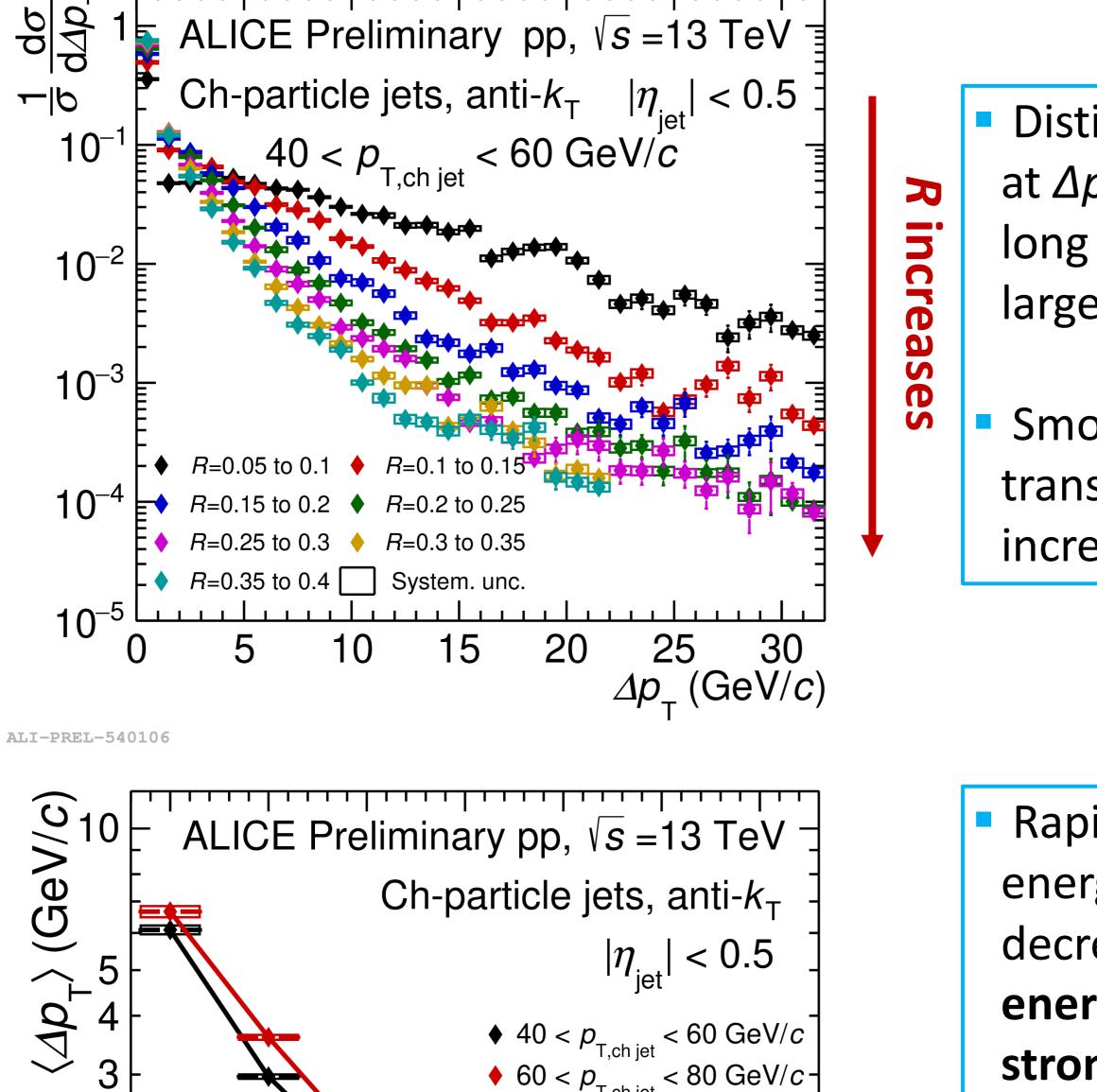
System. unc.

 $\Delta p_{_{\rm T}} \, ({\rm GeV}/c)$

Slightly better agreement of **PYTHIA** with data at small R.

- Baseline measurement in pp.
- Study the effect in in Pb-Pb.

ALICE pp measurement



 $|\eta_{_{
m iet}}| < 0.5$

 $R_{\rm jet,low}$

• $40 < p_{T,ch jet} < 60 \text{ GeV/}c$

 \bullet 60 < $p_{\text{T,ch jet}}$ < 80 GeV/c

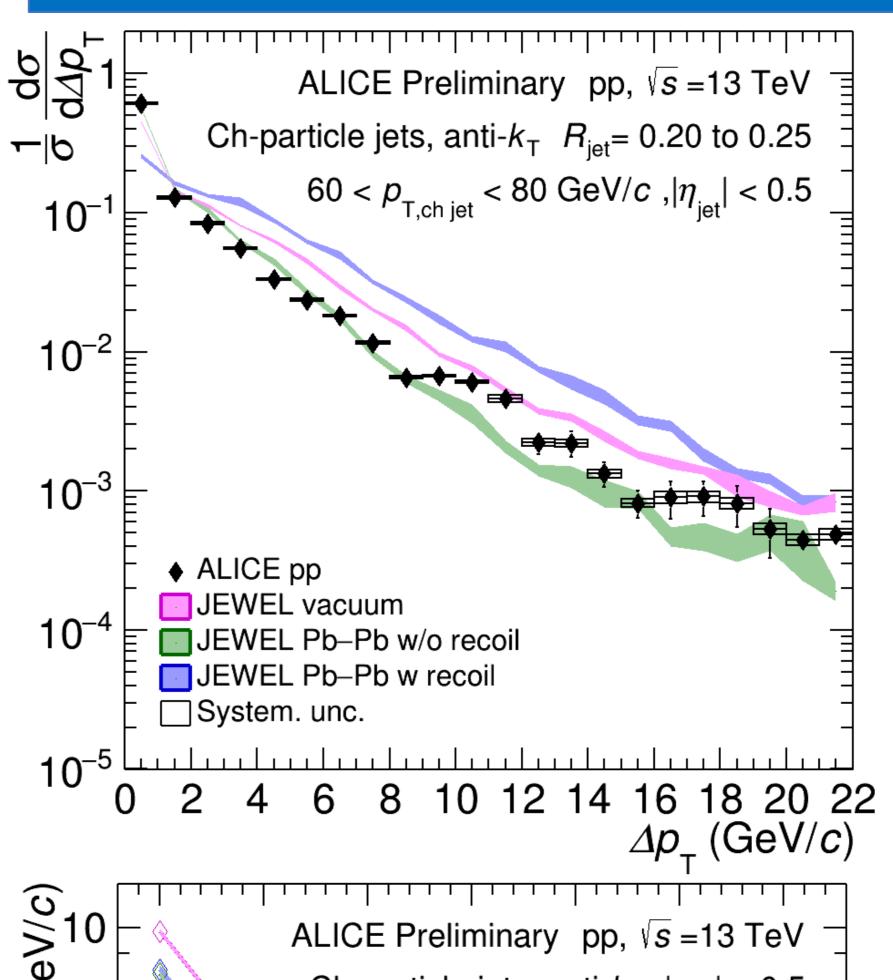
System. unc.

0.1 0.15 0.2 0.25 0.3 0.35

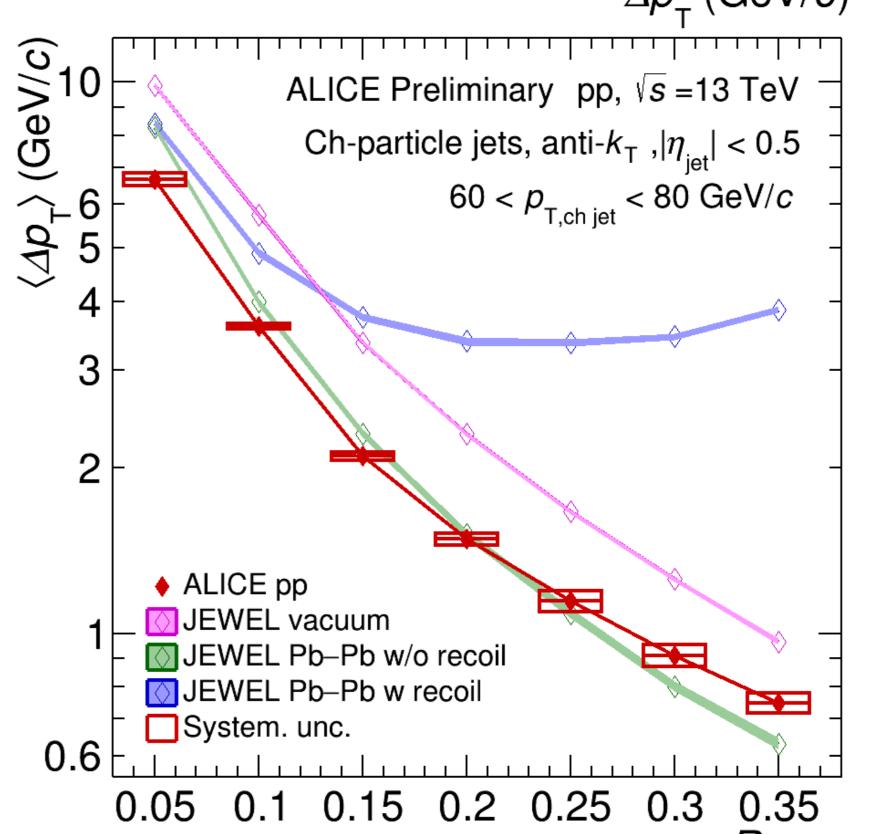
ALI-PREL-540489

- Distinct peak at $\Delta p_{\mathrm{T}} = 0$ but long tail up to large Δp_{T} .
- Smooth transition as R increases.
- Rapid mean energy flow decrease → **Jet** energy flow strongly collimated.
- Clear jet p_{T} ordering.

Outlook for heavy-ion measurement



- JEWEL in vacuum overestimates Δp_{T} compared to ALICE pp measurement.
- Observable is sensitive to recoil effects.



Compared to JEWEL in vacuum:

- Recoil effects → Recovery of energy at large R.
- No recoil effects → Narrower jet energy profile.
- Energy flow measurement in pp

 Model constraints.
- ALICE measurement in Pb-Pb collisions is under way.

