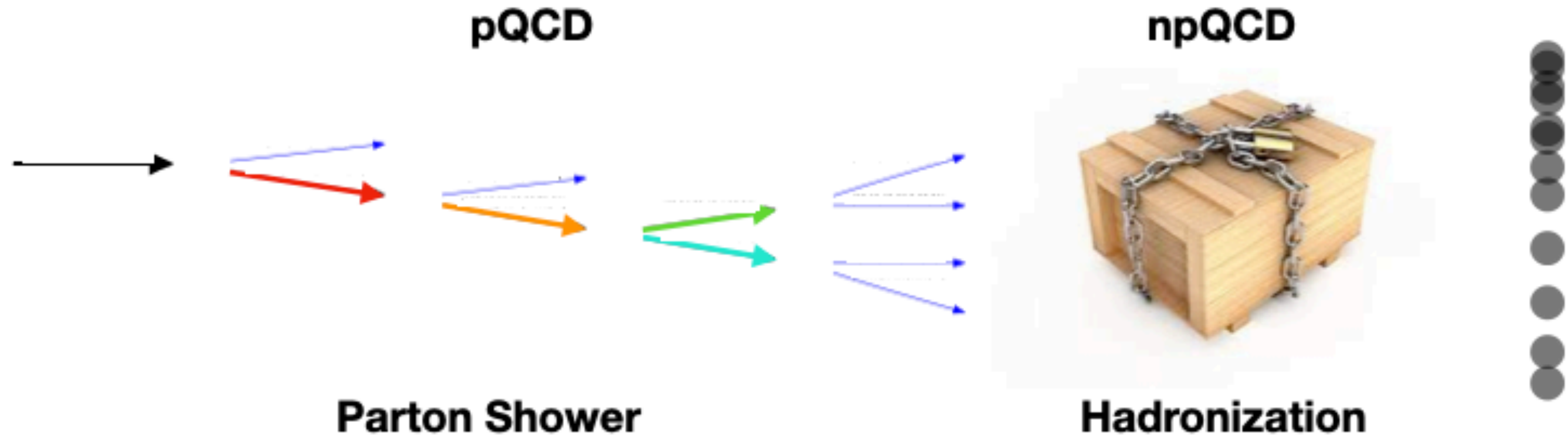



holmgång

Raghav Kunnawalkam Elayavalli (they/them)
Vanderbilt University

Does the spacetime structure
of a jet have physical
reality?

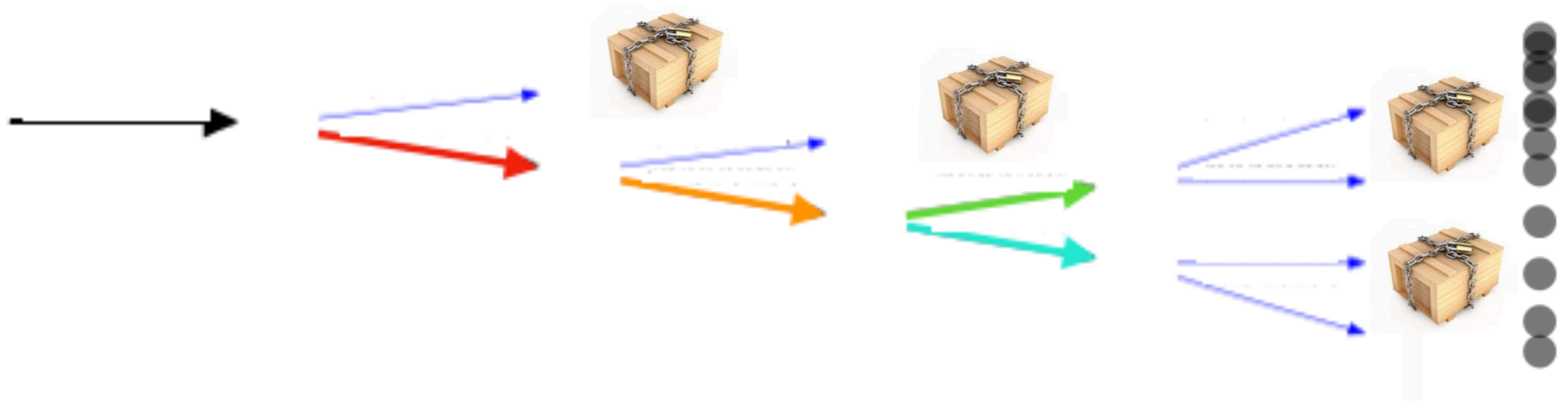
Is this picture correct?



τ_f 

$$\tau_f = \frac{1}{z \cdot (1 - z) \cdot \theta^2 \cdot E} \quad [\text{fm}/c]$$

Why not this?

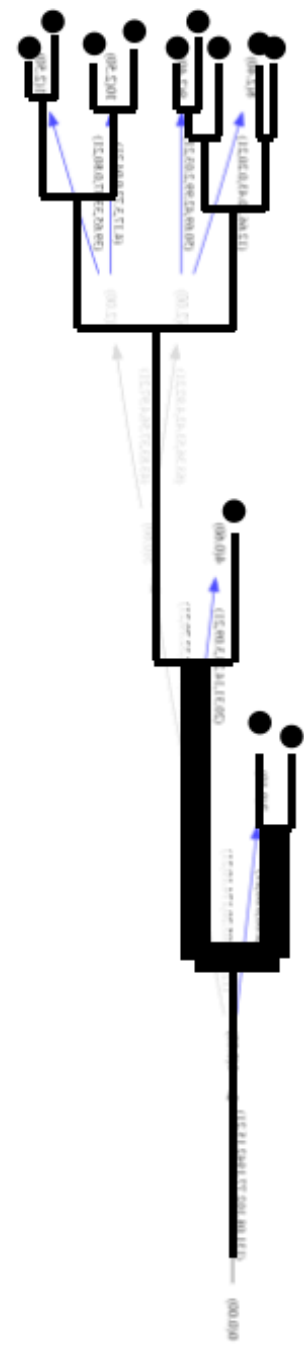


How will this be affected with energy loss?

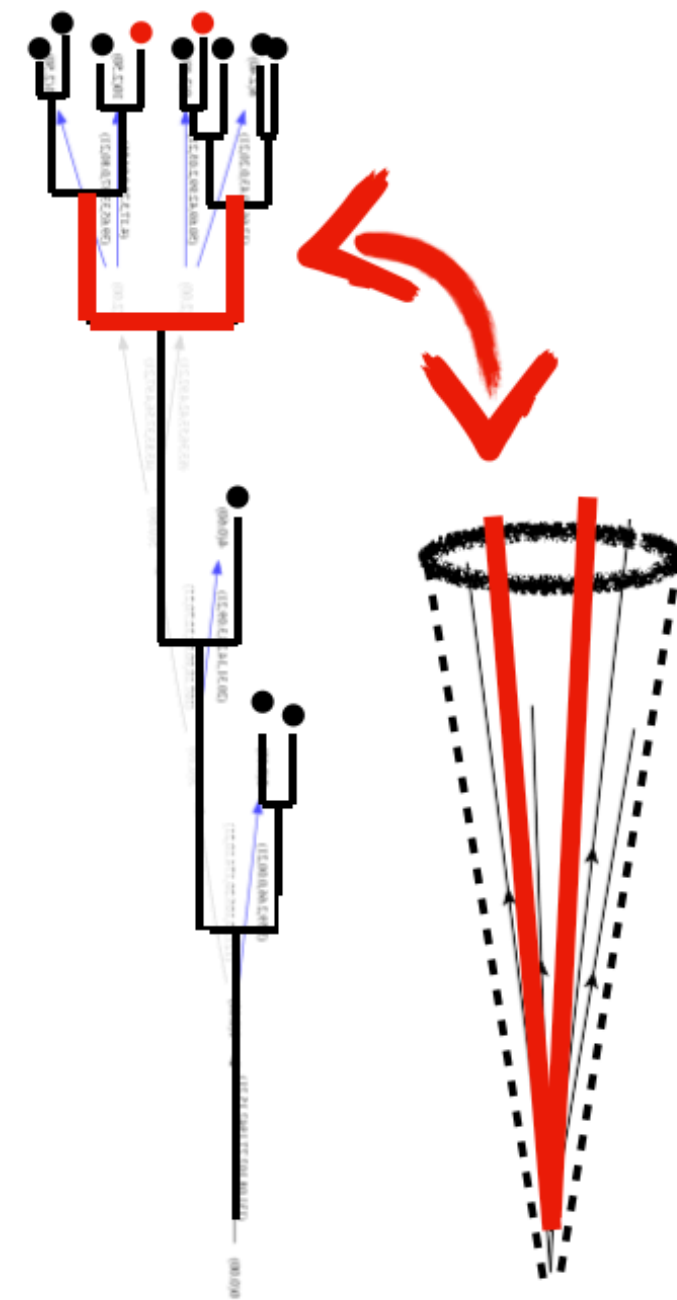
When, how much, why - can we trust C/A algorithm

- In pp, in high multiplicity, in AA, in pA
- Can we build up a mapping of the trust?
- Clearly adding a one of two particles changes the ordering
- Decays change the structure? Can we use something other than clustering/declustering information for our time?
- Subjets, leading and subleading charged particles?

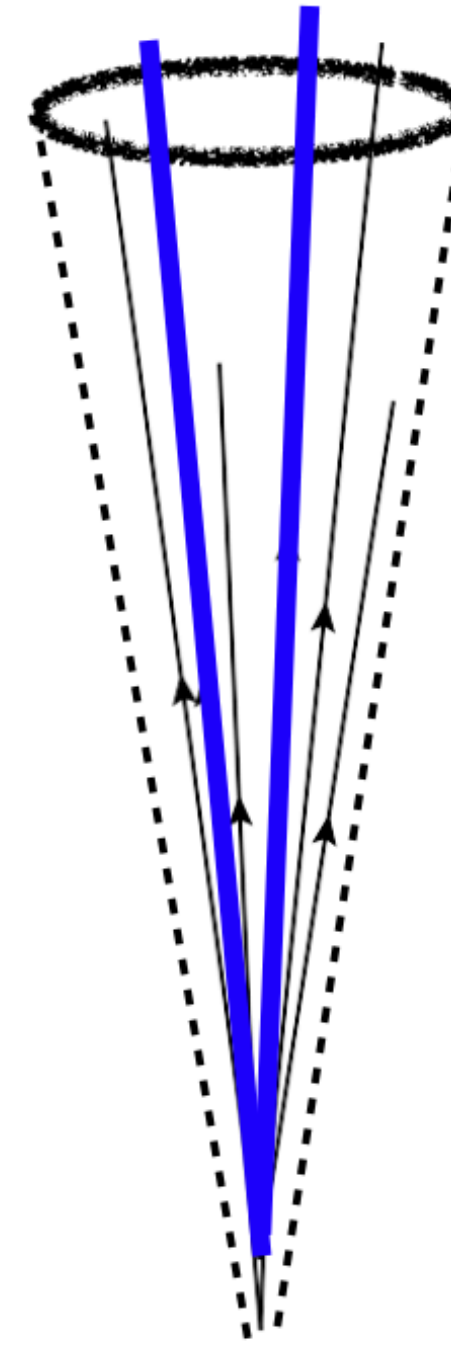
- SoftDrop first split τ_f



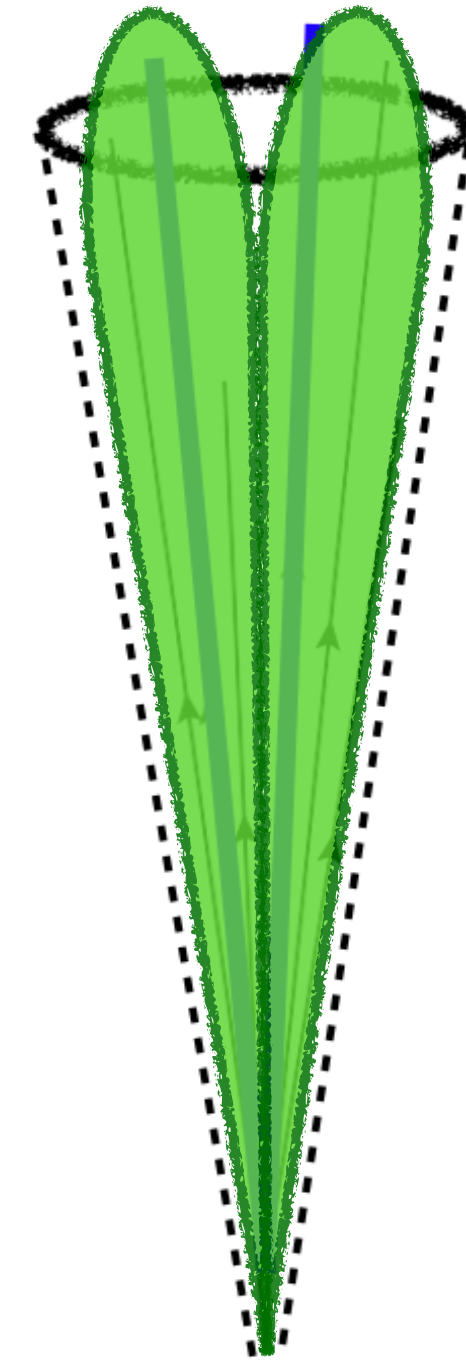
- SoftDrop split resolving the two leading charged particles



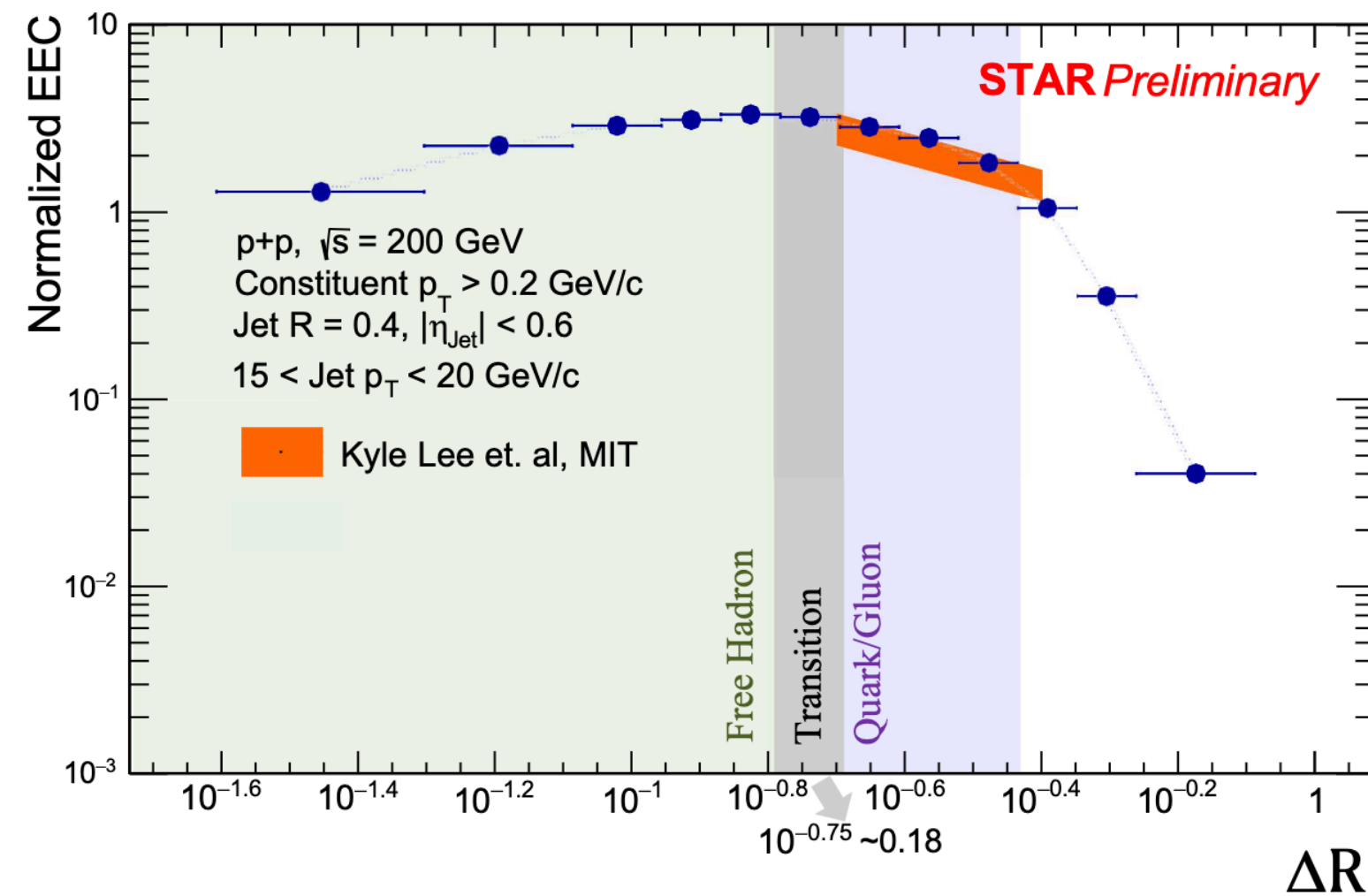
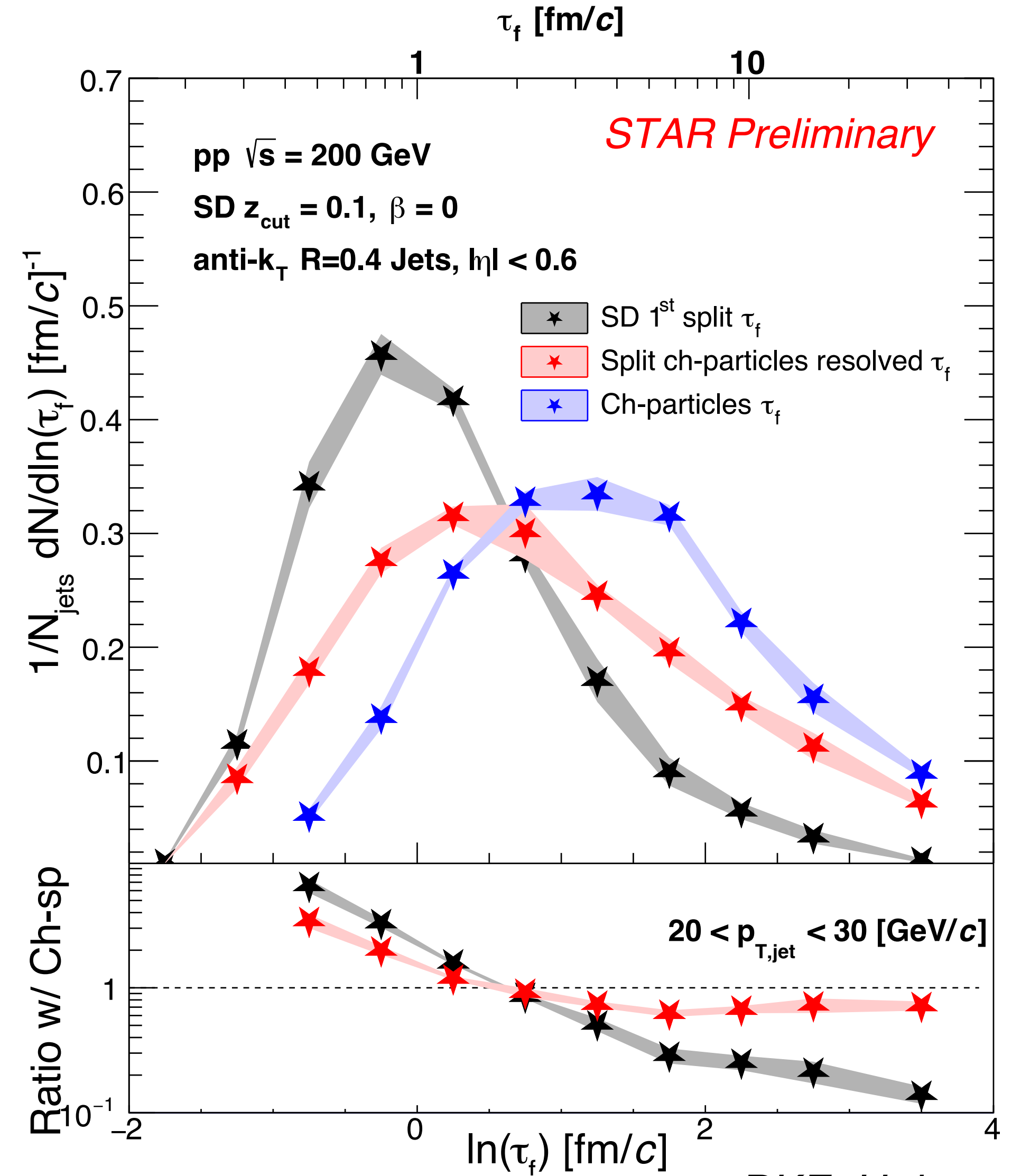
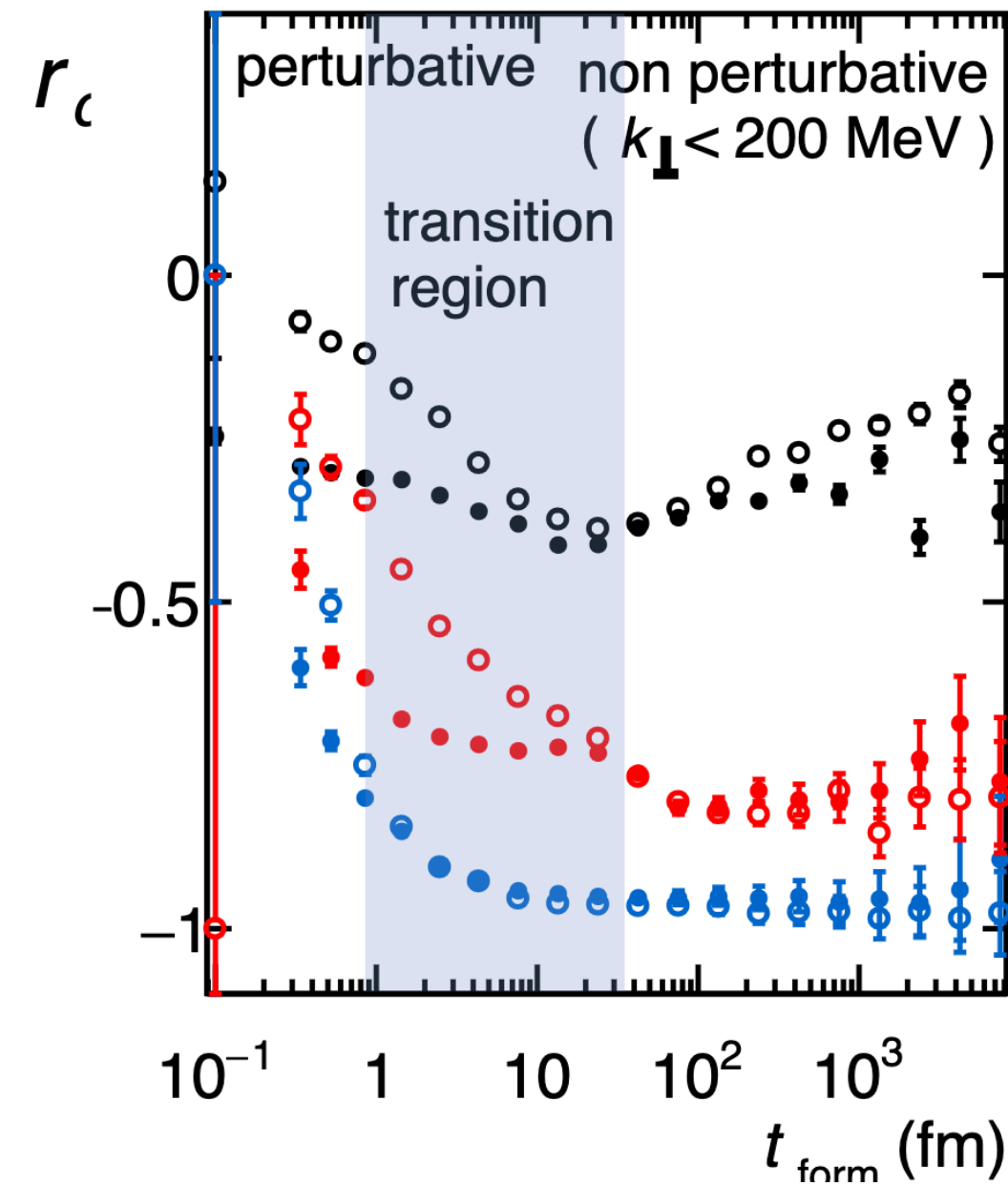
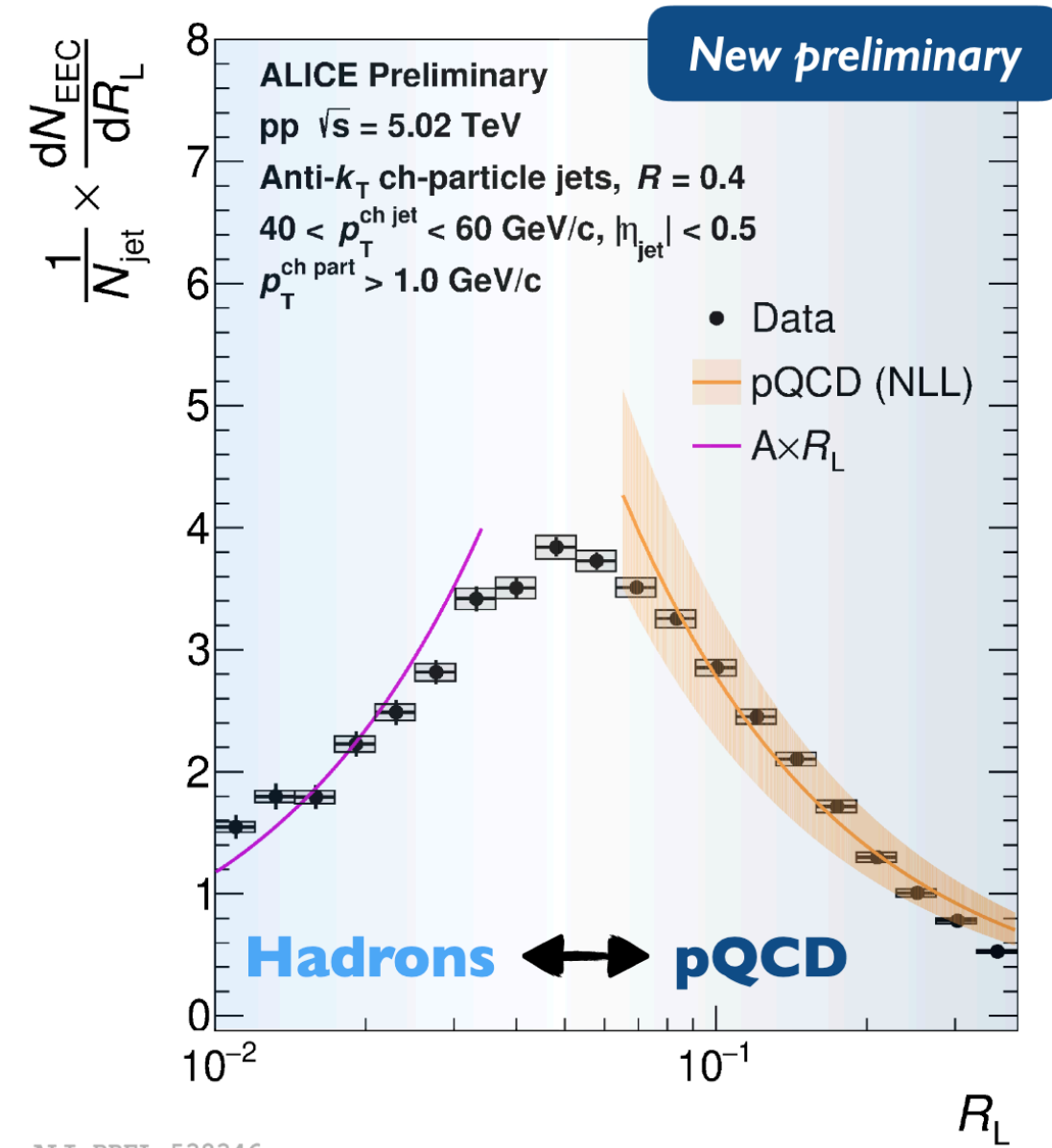
- Leading and subleading ch-particle τ_f



- Leading and subleading subjects τ_f



What is our end goal?



SPACE-TIME

Space - for a jet - is angle?

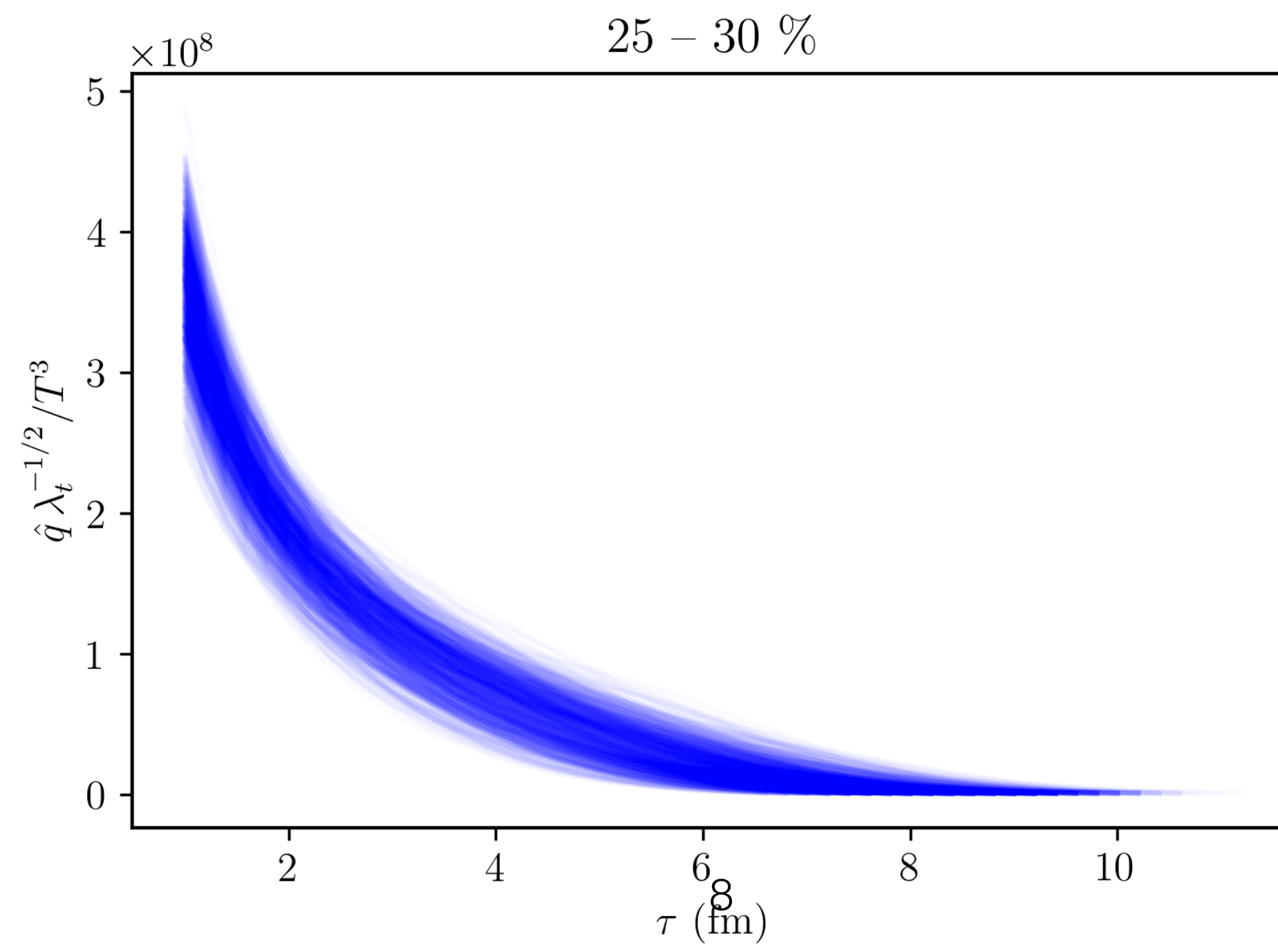
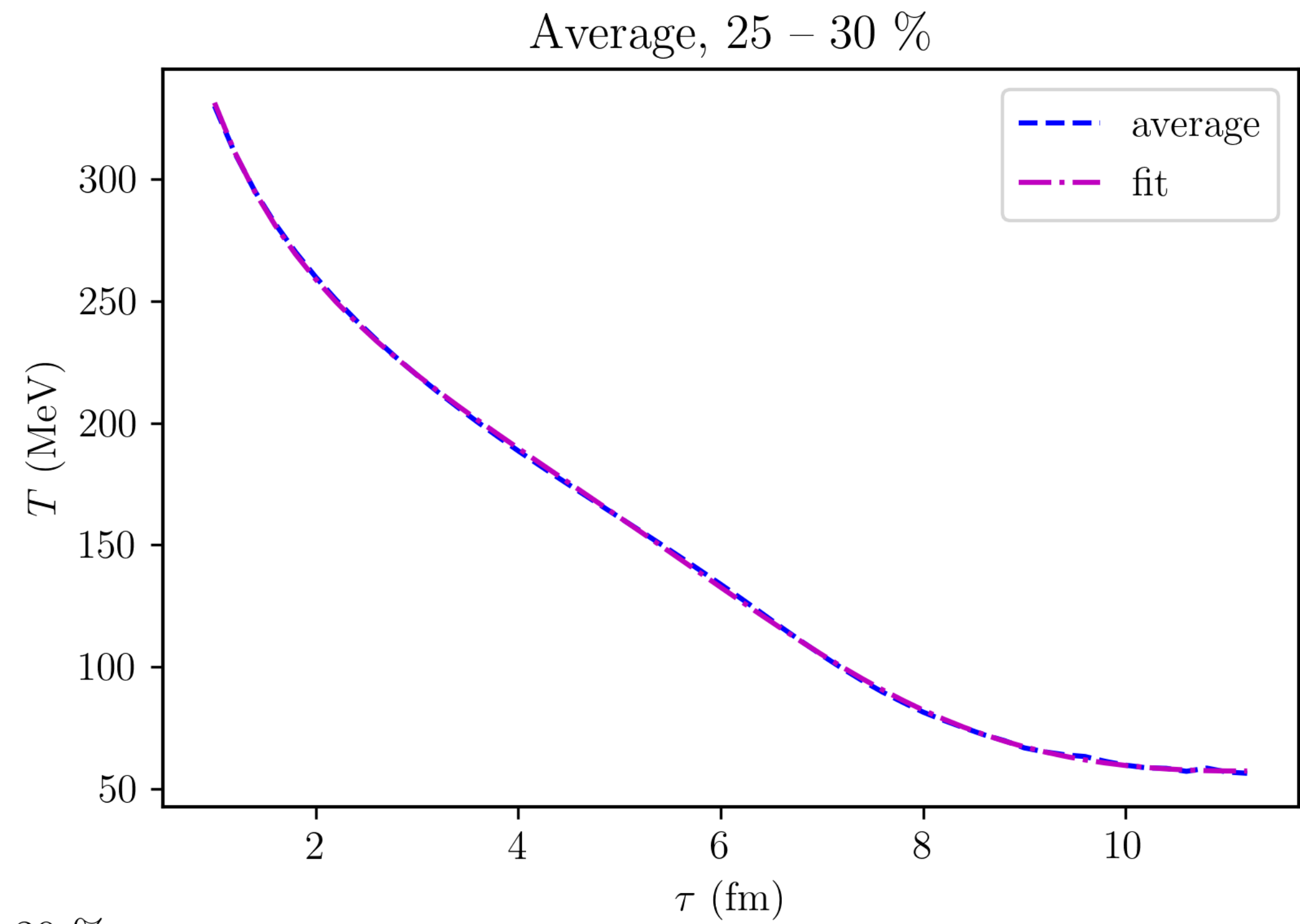
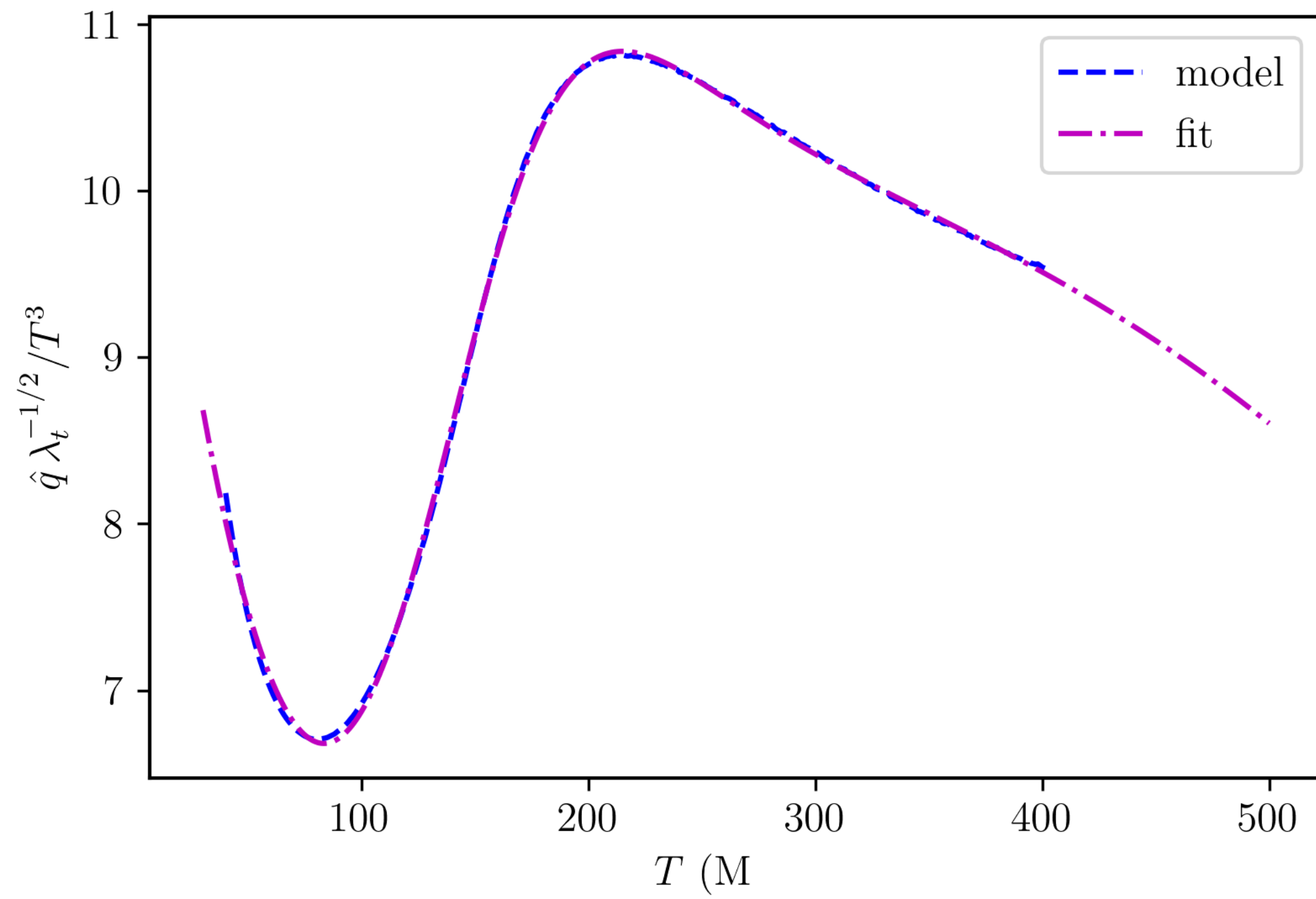
Time - for a jet - $1/\text{angle}$?

Do we need something not related to the jet to quantify some of these quantities in a medium jet?

Is it meaningful to describe an timeline for a quenched jet?

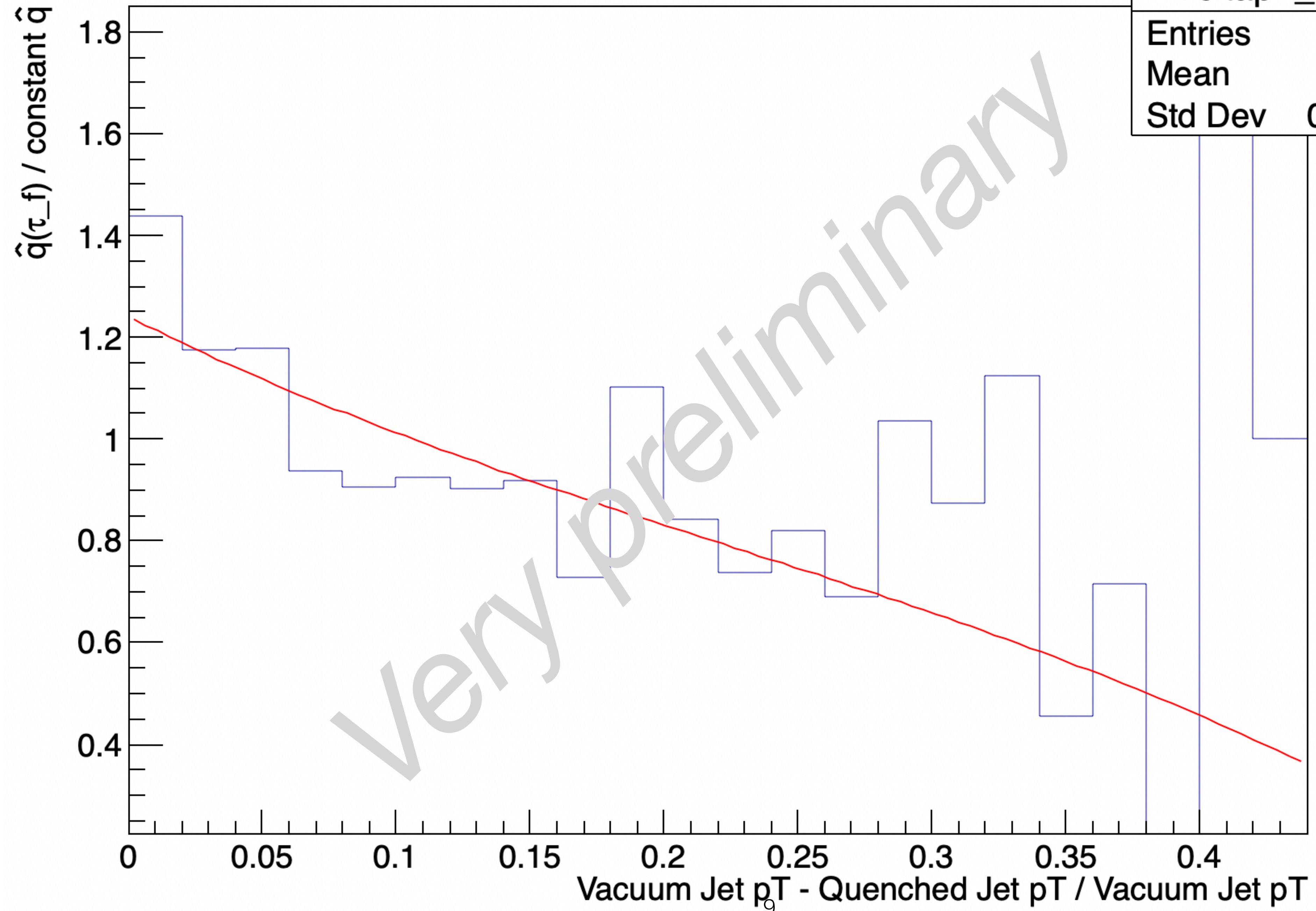
40 GeV at RHIC or LHC sees a very different medium as compared to a 400 GeV jet at LHC yes?

What if the high virtuality, early splitting jets sees the pre-equilibrium or pre-hydro medium? What then?



**Thanks to Joaquin Grefa and
Mauricio Hippert
Holographic QCD extraction**

hDeltapT_V_TQ	
Entries	21
Mean	0.211
Std Dev	0.1344



What is our end goal?

