

The physics we are after:

- jet modifications
 - jet-medium interactions
- as probes of medium properties.

The primary physics observables:

*samples of medium-modified jets
embedded in a jet-modified medium*

Problem:

- TH limitations: unrealistic to ask for ‘controlled’ models that simulate both: jet & medium in HICs
- EXP limitation: unclear how to separate medium-modified jet from jet-modified medium without introducing biases

The zeroth order approach:

Present jet quenching data under assumption that jet-modified medium defined by “remainder”

[This is the strategy behind unfolding jet measurements for detector effects and UE.]

- Which physics can be done safely with this approach?
- Which information about “UE-subtraction” needs to be provided if one wants to go beyond this approach?
- When is information about unfolding of bkg fluctuations insufficient? (e.g. need to follow exactly same jet selection prescription if this can swap leading/subleading/subsubleading jet)

Nestor's questions that we did not resolve yet:

1. How can we characterize/validate UE?

Matteo's table is mostly empty: Can we fill it?.

Jet reconstruction

HYDJET simulations		ρ (GeV) ($y=0, 0-10\%$)	σ (GeV)	σ_ρ (GeV)	σ_{jet} (GeV) (anti-kt, R=0.4)
LHC 2.76 TeV	all	250	18	36	16
	charged only	147	12.5	22	11.3
Data LHC 2.76 TeV		ρ (GeV) ($y=0, 0-10\%$)	σ (GeV)	σ_ρ (GeV)	σ_{jet} (GeV) (anti-kt, R=0.4)
ALICE, charged only 1201.2423		138		18.5	11.2
CMS 1205.0206					5.2 (R=0.3 + NR)
ATLAS 1208.1967					12.5

Only background-induced component, no calorimeter effects

While σ_{jet} is of course ultimately the only relevant number, it would be nice to have all the others too from the experiments, for comparison and cross-checks

I'd be most happy if I could fill in the blanks at this workshop

Nestor's questions that we did not resolve yet:

2. How are more quantitative cross-checks between experiments possible?
 - ATLAS/CMS show data for different R (0.2, 0.4 vs 0.3, 0.5)
 - performance plots are shown for different kin. ranges or are not shown yet
 - limited overlap in jet resolution parametrization btw. Exps
 - how to compare charged particle jets (ALICE) to jet measurements of ATLAS/CMS

How to resolve these issues?

Is a small inter-experiment working group needed?

To discuss:

- Which observables are unfolded and can be compared with ‘raw’ theory?
- Which are not?
 - Can the experiments provide response matrices for detector effects, or for background? Different centralities, experimental conditions, etc.
 - How the theoreticians validate their backgrounds, if needed?
- Checks of the background subtraction methods: centrality dependence?
- Agreement on jet definition?
- How do we organize a systematic MC/data comparison?
Repository of quenched pp events?