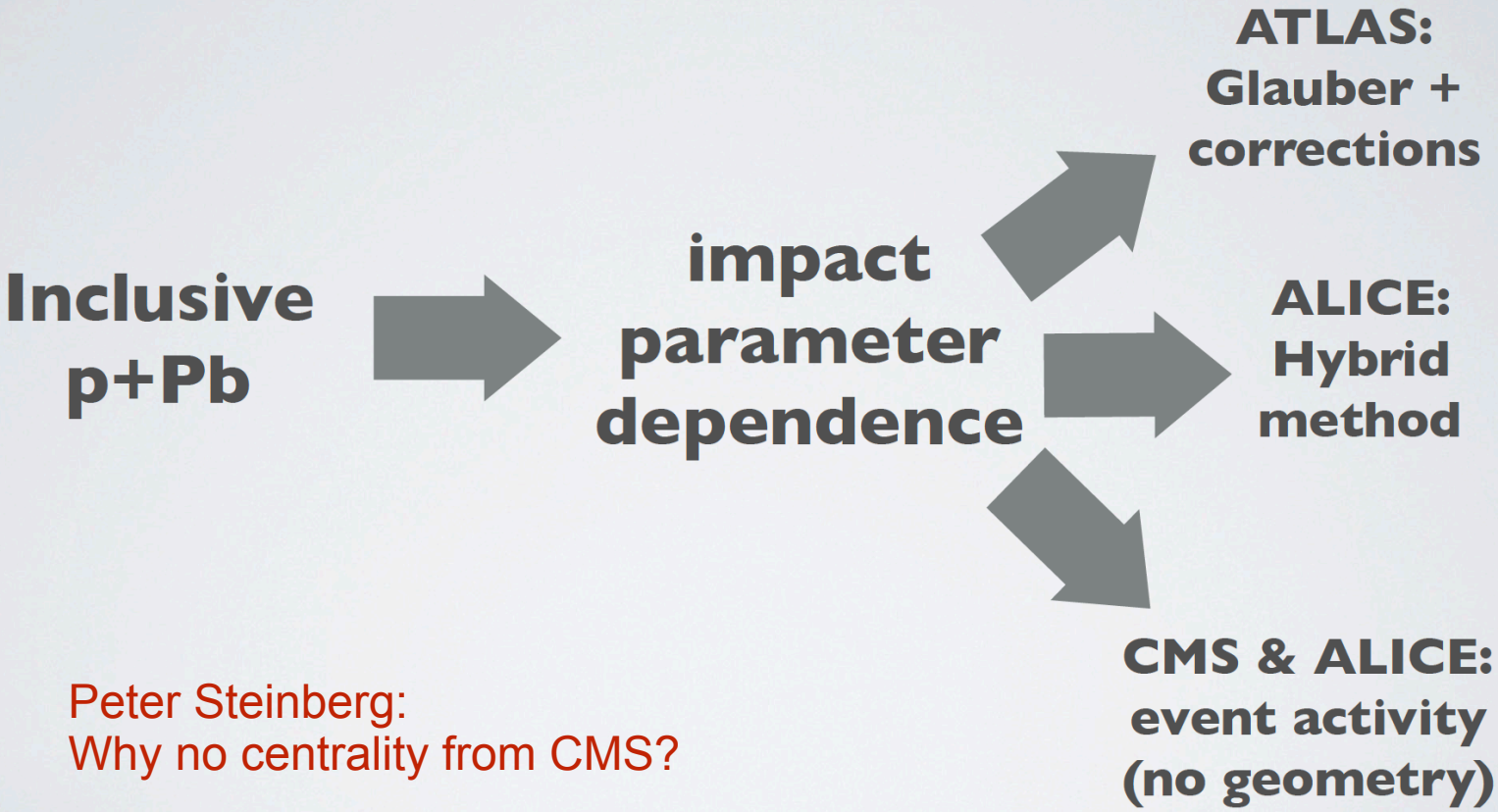
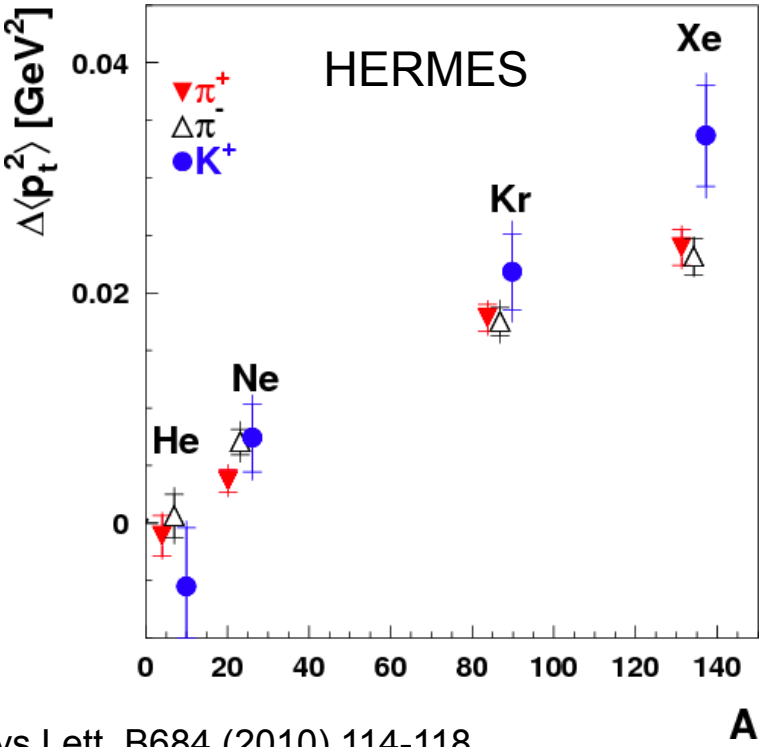
A parting of the ways



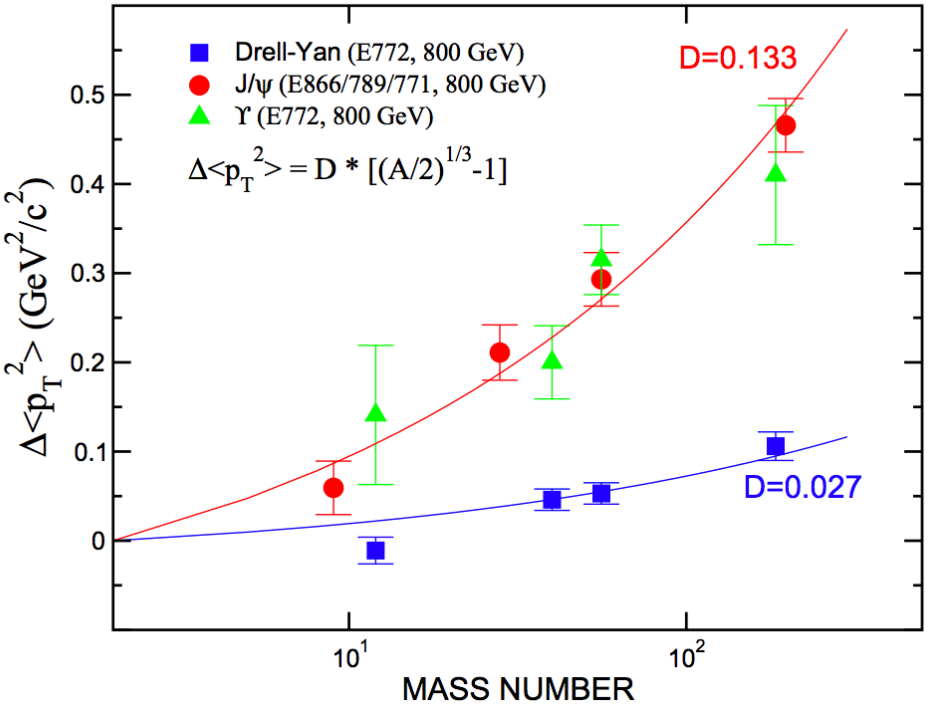
Peter Steinberg:
Why no centrality from CMS?

p_T broadening from fixed target

Re-analysis of E772 data
+ new E866 data analysis



Phys.Lett. B684 (2010) 114-118



Phys.Rev.C75:035206,2007

Some quotes

"If you can do multiple emissions you can do one” (JPB)

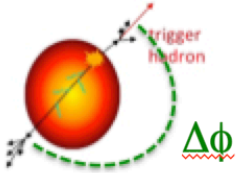
"given a typical density, you can estimate how many collisions there are” (XNW)

"we know, more than one!” (BDMPS crew)

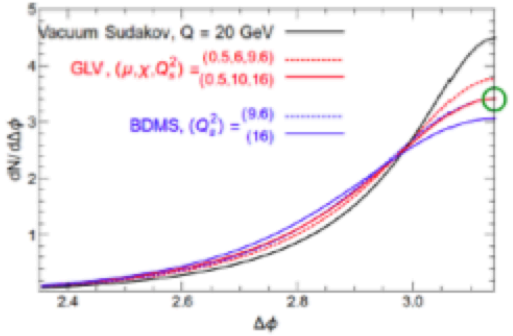
→ Consensus on the necessity to always consider multiple scatterings?

In-medium acoplanarity: GLV vs BDMPS

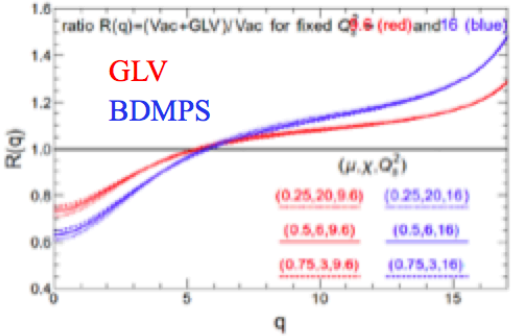
Gyulassy et al. QM18



BDMPS: multiple soft scatterings
GLV: few hard scatterings
→interesting variation of in-medium interaction



Ratio to vacuum distribution



- Both models: significant yield suppression relative to vacuum → jet quenching
- Acoplanarity may discriminate pictures of the medium
  - need ~few percent precision in angular distribution: possible with current STAR data, ALICE Run 3 data

Talk by Peter Jacobs

What is others?

Conclusions

- Field has evolved since our days of leading hadron analyses
- Era of "precision heavy-ion physics" requires defining jets in a high background environment
  - Depends on observable, energy, jet R, p_T, and others
- Work is ongoing on reaching a consensus
  - Paper to that effect will come out of the workshop

Many thanks to all speakers and participants!!

Talk by Rosi Reed

Definition of a jet

A example where theorist thinks about this very differently than experimentalist

This jets includes everything that is not medium-induced radiation
Eg: no clustering, no resolution parameter

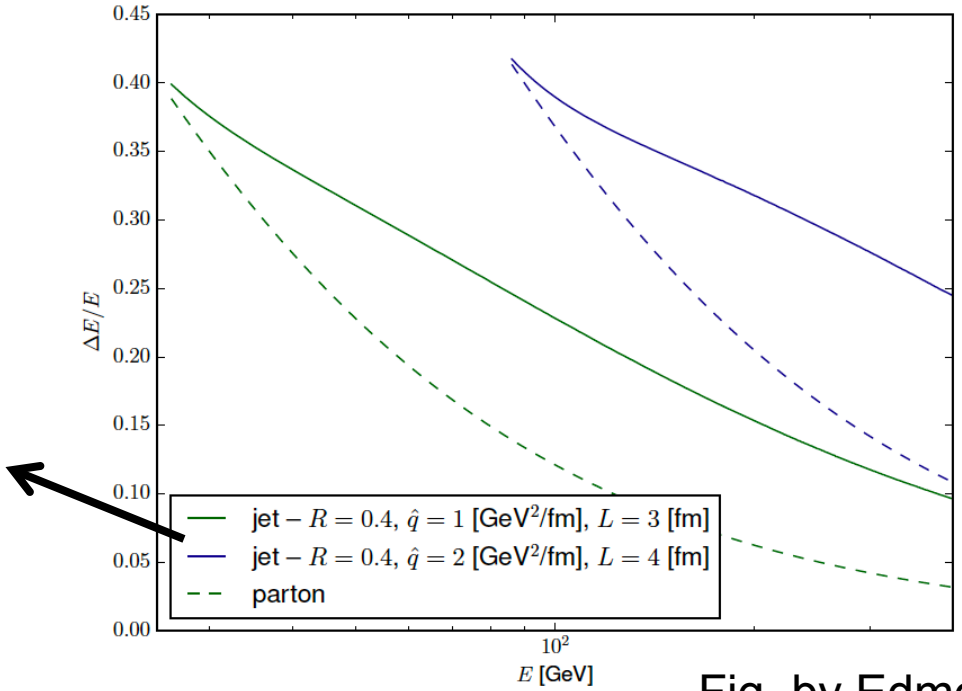
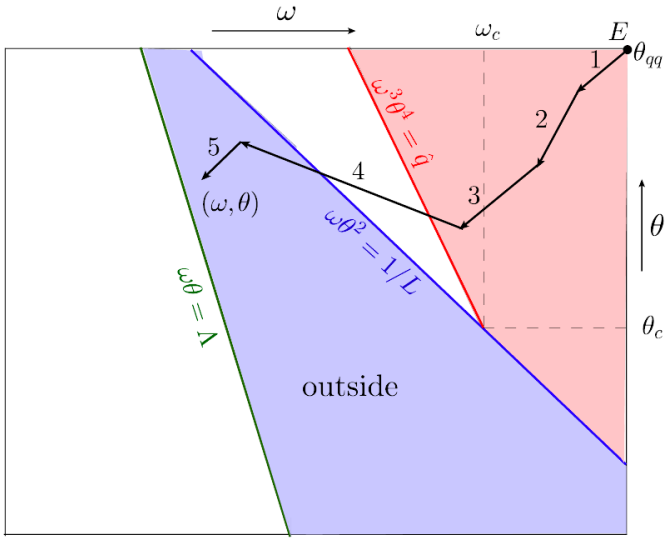
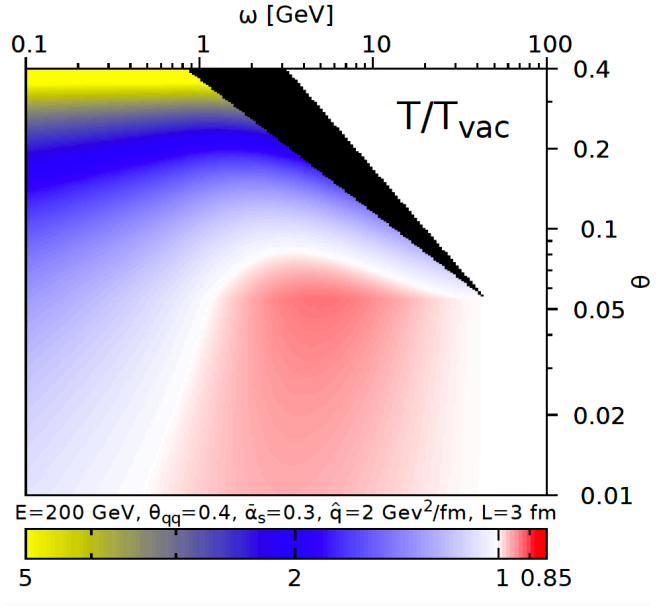


Fig. by Edmond Iancu

Reset of angular ordering when leaving the medium

How to measure this? / Can we measure this?

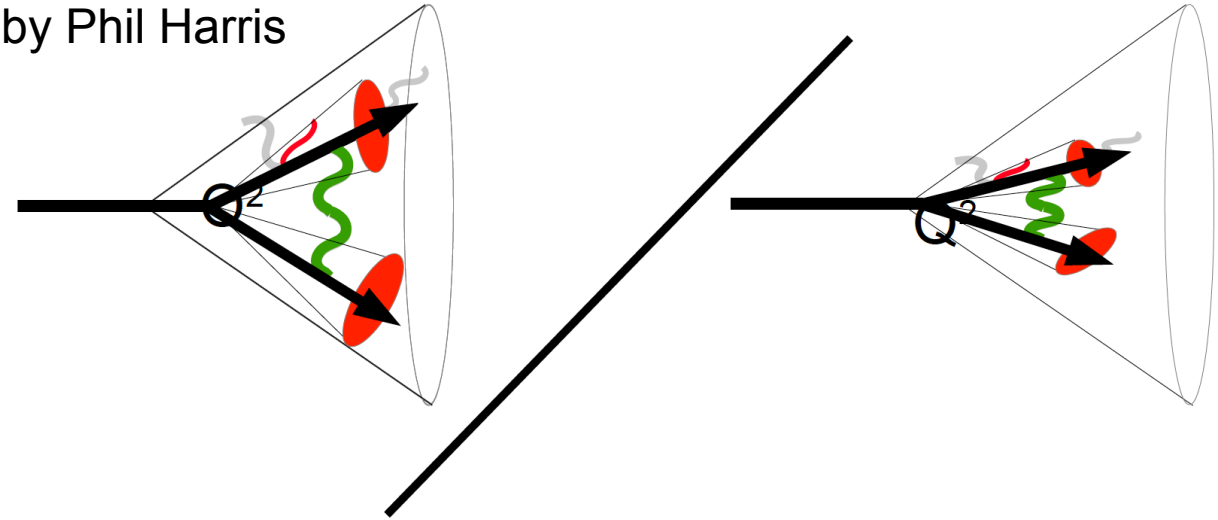




Talk by Edmond Iancu

Decorrelation techniques

Talk by Phil Harris

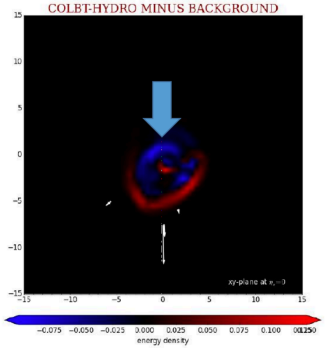


Many ideas to decorrelate jets against observables

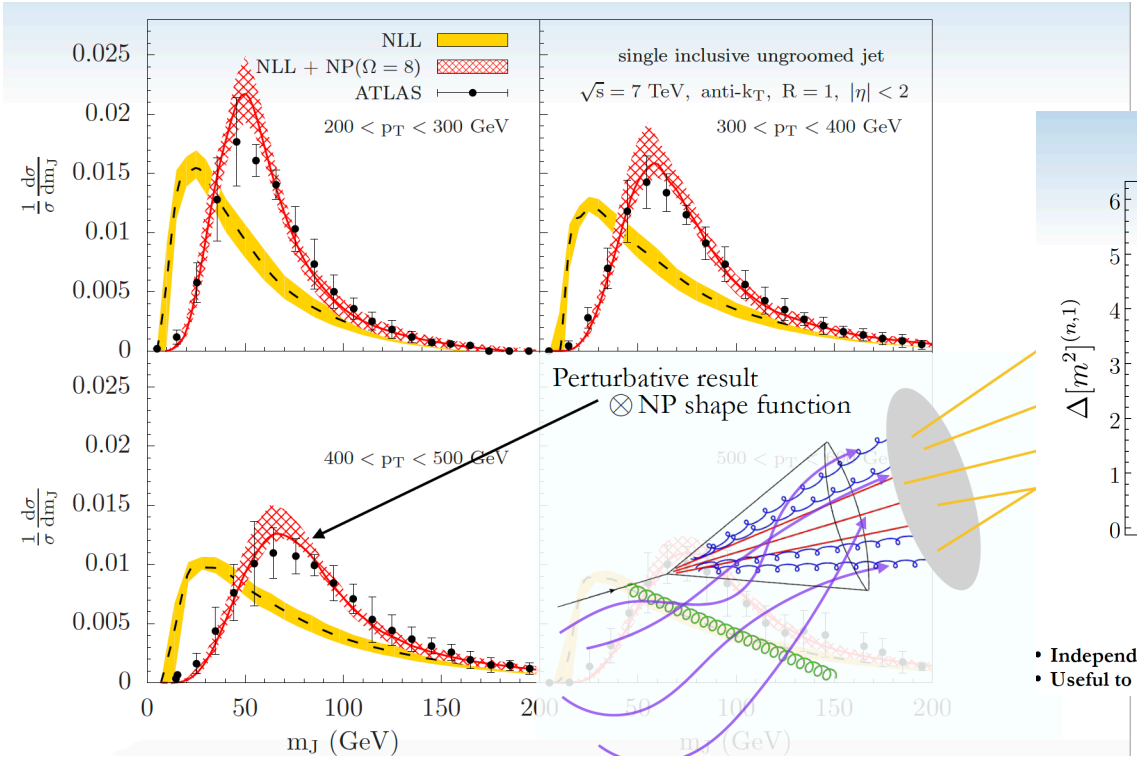
Decorrelation allows for data based ratios

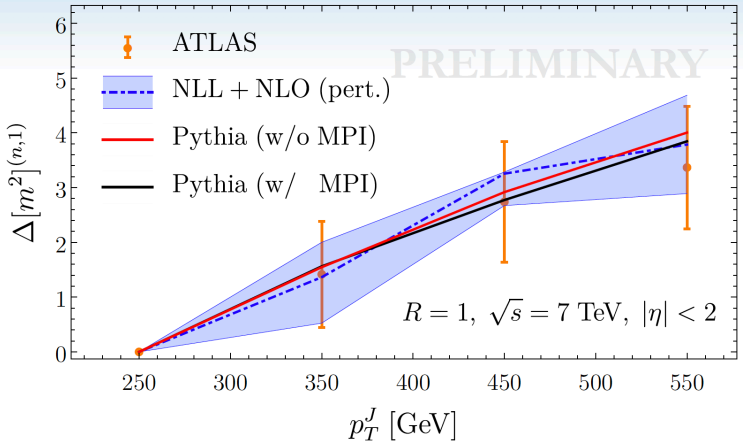
Allows us to be sensitive to small features

Useful for finding depletion due to medium response?



Jet Mass





- Independent of model, i.e. shape function.
- Useful to test modifications by medium with reduced sensitivity to uncorrelated radiations.

$$\Delta\tau^{(m,n)} \equiv [\tau]^{(m)} - [\tau]^{(n)} = [\tau]^{(m)}_{\text{pert}} - [\tau]^{(n)}_{\text{pert}} \equiv \Delta\tau^{(m,n)}_{\text{pert}}$$

Talk by Kyle Lee