



Summary report for the 'hadronic working group'



Actually done in working group (apart from discussions)

FastJet Tutorial (Gavin)
Caccari, Salam, Soyez
<http://www.lpthe.jussieu.fr/~salam/fastjet/>



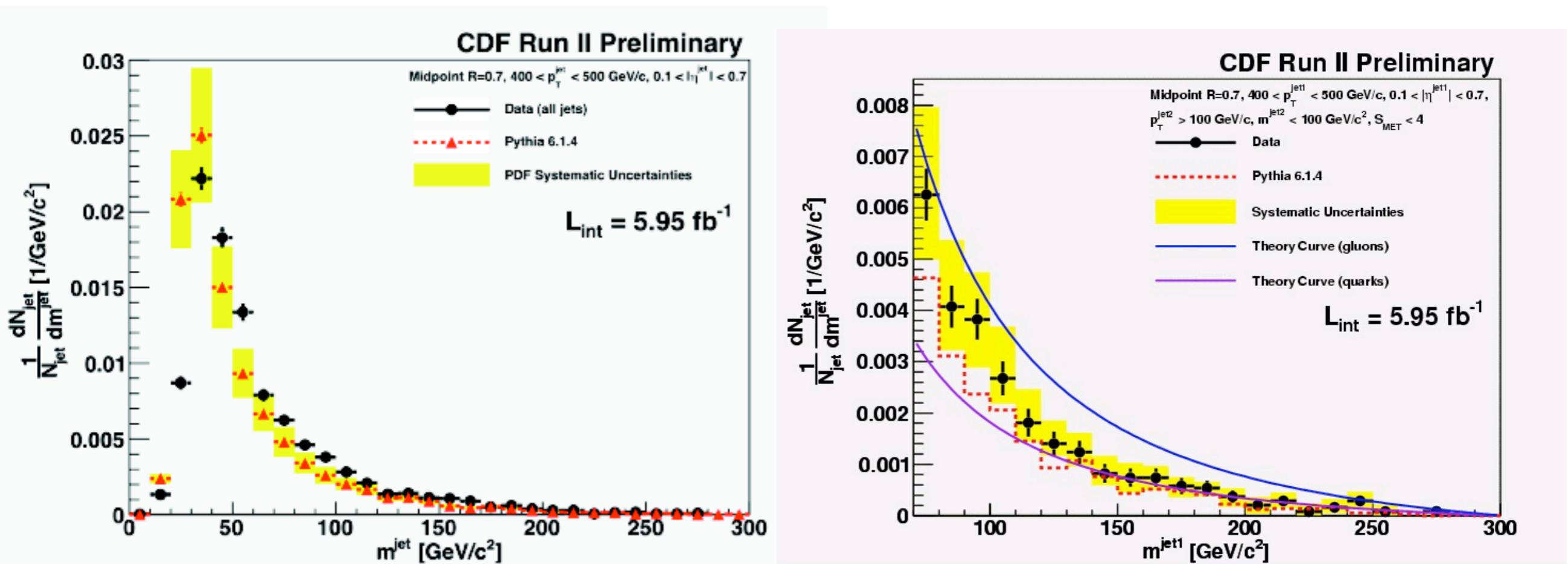
SpartyJet Tutorial (Chris)
<http://www.pa.msu.edu/~huston/SpartyJet/SpartyJet.html>



jet substructure faces nature

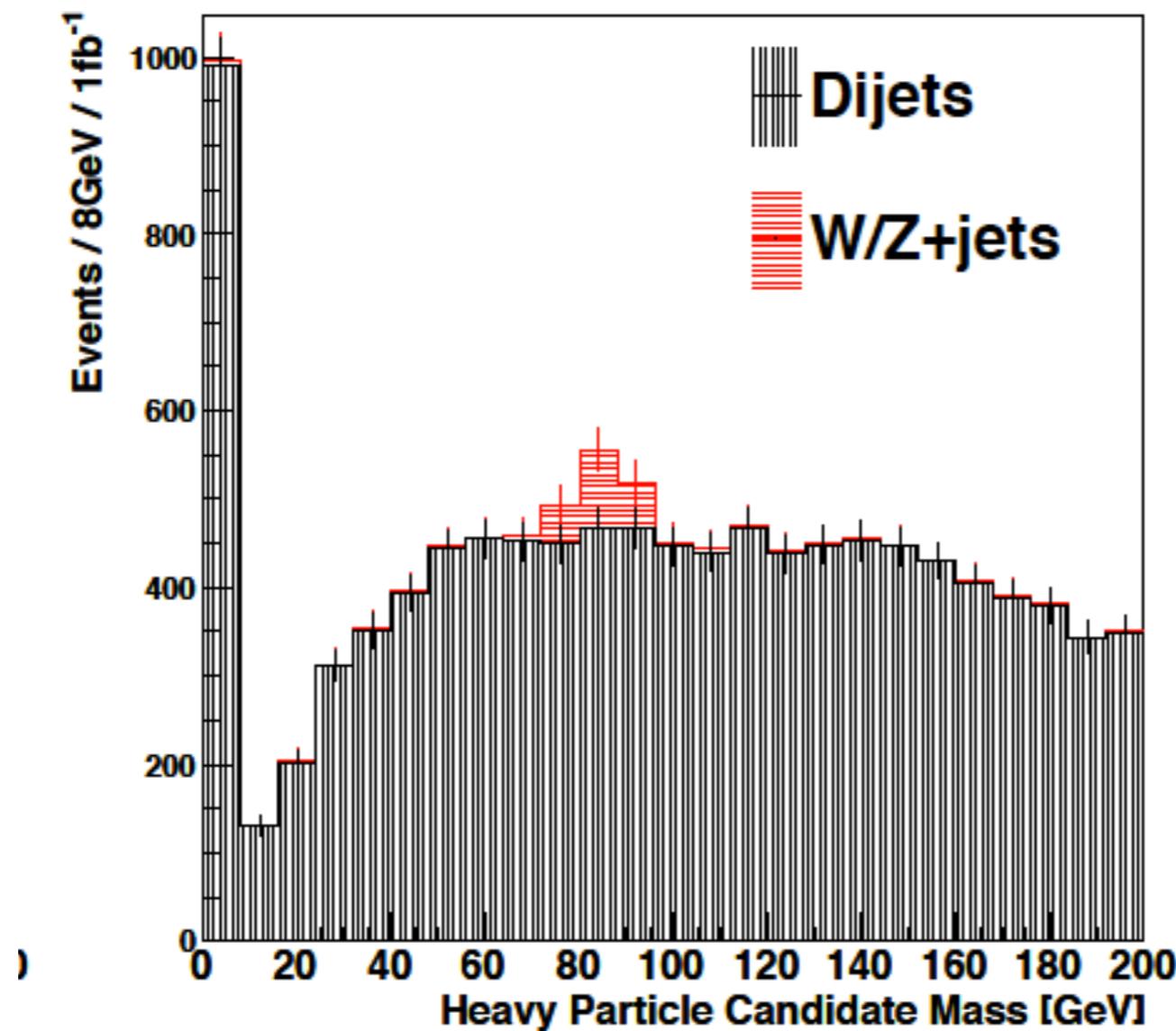
BOOST 2010

(P. Sinervo, G. Perez)



BOOST 2012

Hadronic boosted W observation

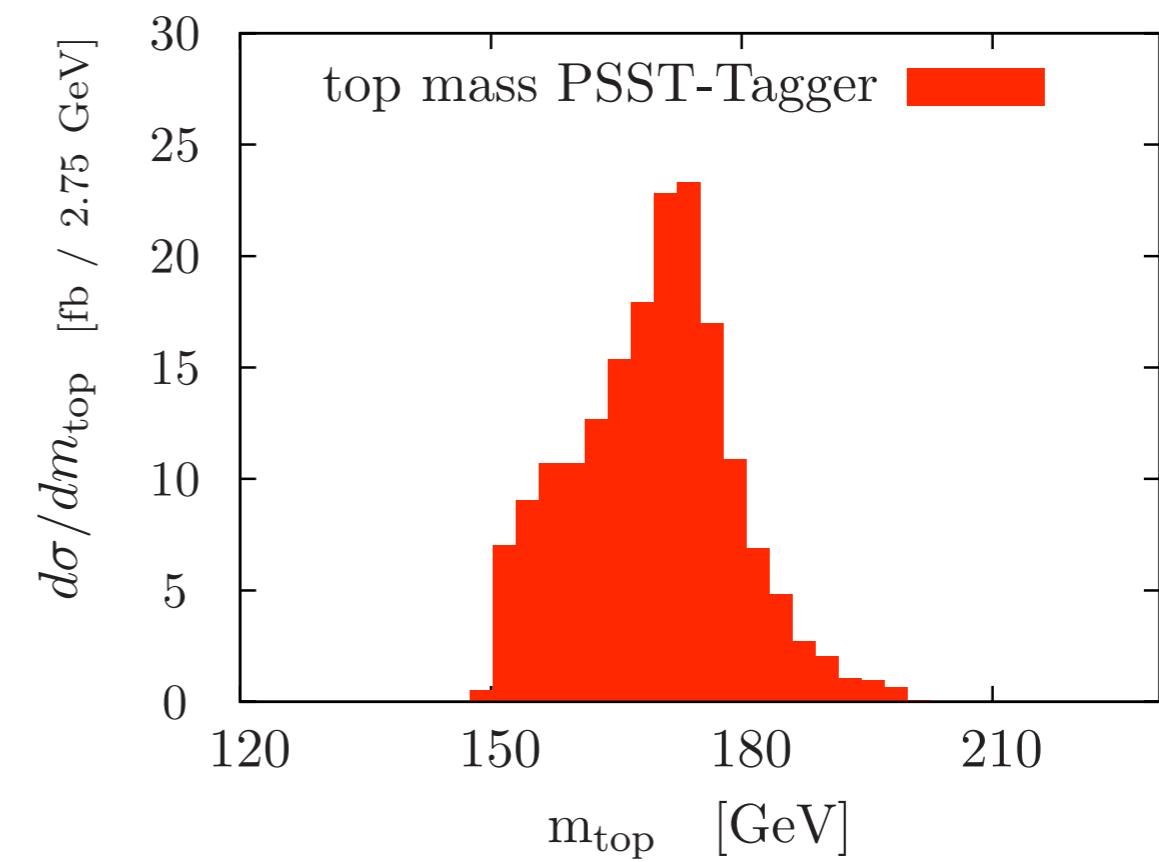
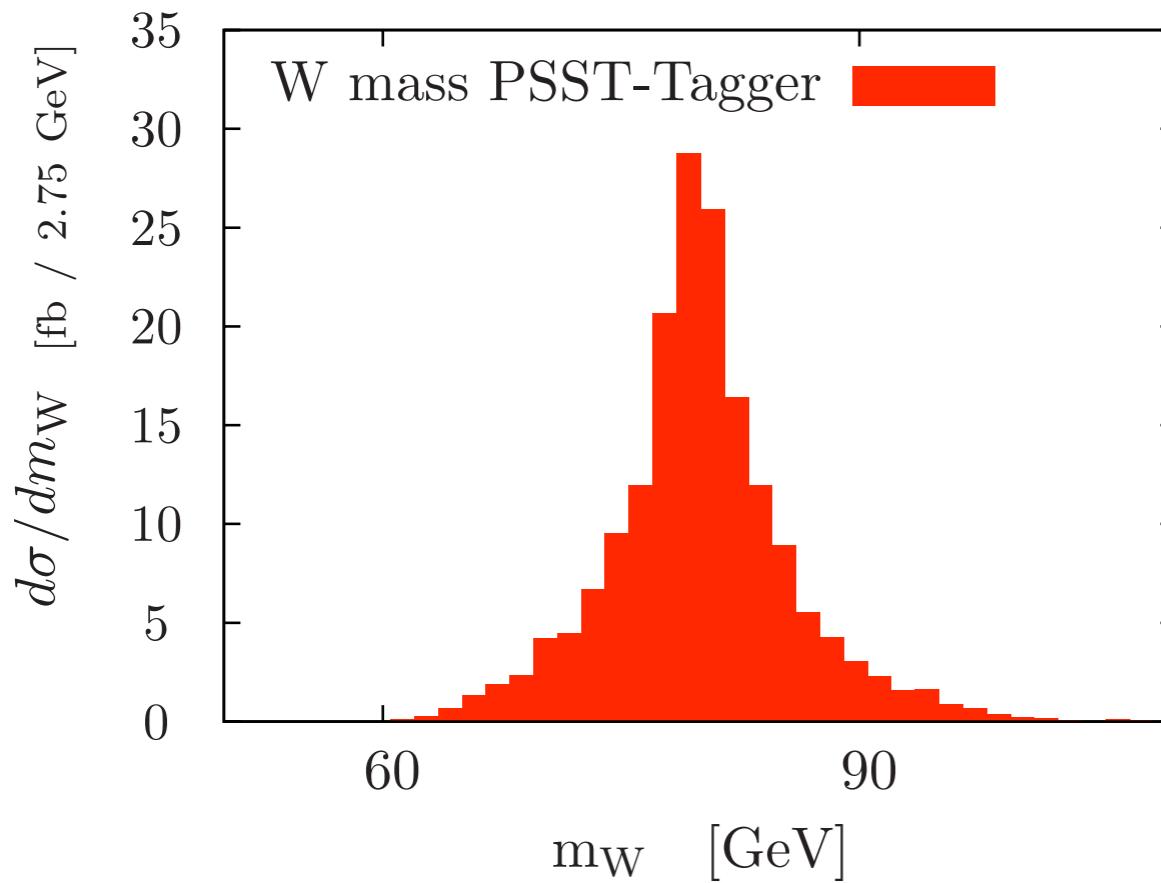


(A. Davison)

~5 sigma after 1/fb at 7 TeV

Boosted 2012

Cleanly isolated samples of boosted tops
and Ws from ttbar samples



Thats exciting!

Before BOOST 2010 many new tools
and analysis were published



many talks/presentations

Not much time to finish work
but
highly motivated to work

AGREED TO PRODUCE PROCEEDINGS

The roadmap

Main Goals:

Brief guide for oldies and newbies

Comparison of tools and techniques

Documentation and written representation
of our field of interest

For practical reasons: keep it short!

I. Introduction (Marcel)

2. List of physics cases and references

- What has been done (Elin, Jay, Michael)
- What can be done

3. List of tools

- Which tools and techniques are there
- What are they supposed to do

(Brock, Chris, Gavin, Steve)

4. Benchmark samples and robustness

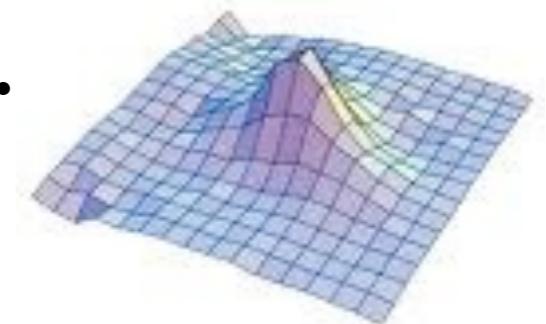
For practical reasons - limit to top, Higgs and QCD

- ttbar (Gustaaf)
- H(bb) W(l) Pythia, Herwig (Brock)
- QCD

Pile-up (Brock, Chris, Marcel)

h-cal smearing: the theorists' detector....

(Peter)



5. Actual analysis:

(Bertrand, Chris, Gavin, 2 x James, Jeannine)

Compare grooming techniques

- Filtering
- Pruning
- Trimming

How do they treat 'fat
jet' mass,
pile-up, UE

Compare top tagger

	"Extra"	eff.	fake
[from T&W]	just jet mass	50%	10%
Brooijmans '08	3,4 k_t subjets, d_{cut}	45%	5%
Thaler & Wang '08	2,3 k_t subjets, z_{cut} + various	40%	5%
Kaplan et al. '08	3,4 C/A subjets, z_{cut} + θ_h	40%	1%
Ellis et al. '09	C/A pruning	10%	0.05%
ATLAS '09	3,4 k_t subjets, d_{cut} MC likelihood	90%	15%
Chekanov & P. '10	Jet shapes	60%	10%
Almeida et al. '08–'10	Template + shapes	13%	0.02%
Plehn et al. '09–'10	C/A MD, θ_h /Dalitz [busy evs, $p_t \sim 300$]	35%	2%

Provide benchmark configuration for top taggers

DEADLINE: 15th of August



**Set your goals high, and don't
stop till you get there.**

- Bo Jackson



We need you!