New vs old data WH electron channel

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Outline

-Datasets.

-Selection.

-Event Yields.

-New vs Old data (2jets analysis, tight lepton).

-New DataVsMC (2jets analysis, tight lepton).

-Conclusion

Datasets

4.28 fb^{-1} { RunIIb-1 → up to Aug 2007 shutdown
RunIIb-2 → up to Jun 2009 shutdown } "old data"

0.571 fb^{-1} { RunIIb-3 → up to Mar 2010 } winter cutoff (up to Oct 2009) "new data"

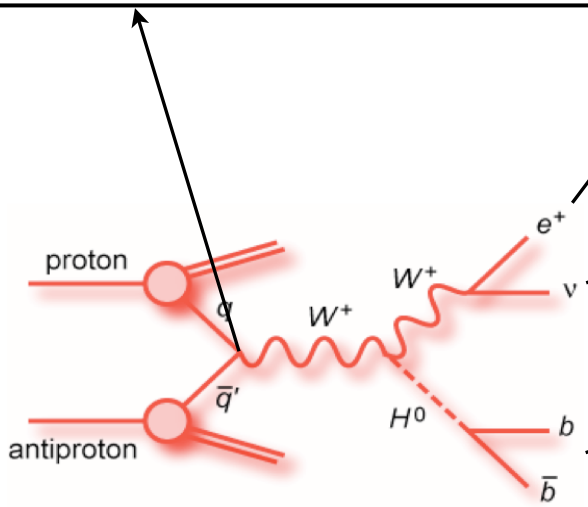
Release p21.18.00

vjets_cafe v04-00-08

Using Sebastien's new WH Framework

WH Analysis - electron channel

•Vertex d'interaction principale
- |z|Pv < 60 cm



•Electron Tight
- selected with the new EMID op. points : Point1 for CC
  Point2 for EC
- Pt > 15 GeV
- 0 <= |deta| <= 2.5

•Missing Et
- 20 <= met <= 1000 GeV

•Jets
- sample with exactly 2 jets / 3 jets
- Pt > 20 GeV
- 0 <= |deta| <= 2.5

•b-tag
- Single Tag : leading jet NN output > 0.775
- Double Tag : 1st and 2nd leading jets NN output > 0.5

•Other cuts
- triangular cut
- 60 <= HT <. 5000
- second lepton veto

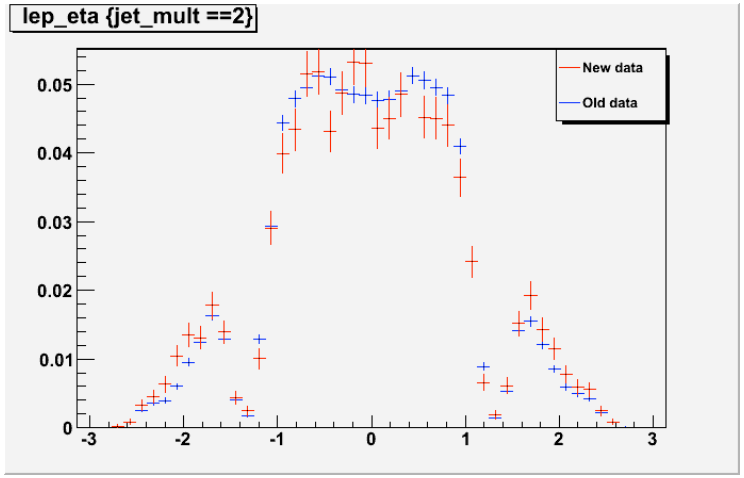
Event Yields (2 jets analysis)

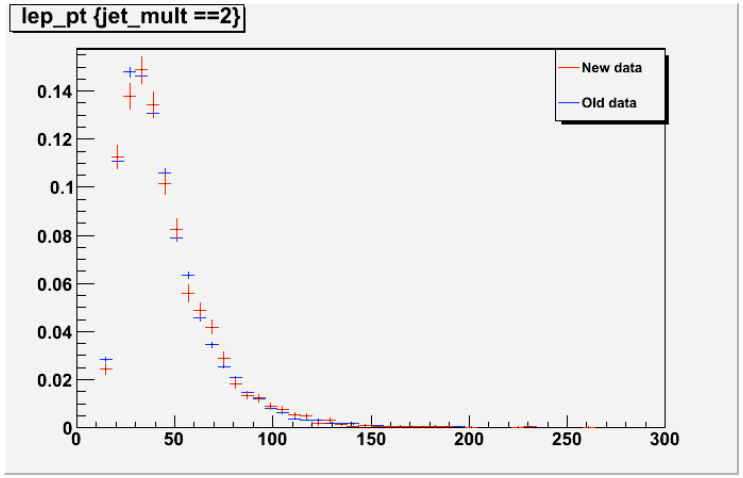
		RunIIb-1				RunIIb-2				RunIIb-3 (winter2010)			
integrated luminosity (fb^{-1})		1.2				3.1				0.57			
Detector		CC		EC		CC		EC		CC		EC	
Pretag	#events	11,026	+/-105	1,814	+/-42.6	24,782	+/-157.4	4,276	+/-65.4	4,856	+/-69.7	1,018	+/-31.9
	/fb $^{-1}$	9,188.3	+/-95.9	1,511.7	+/-38.9	7,994.2	+/-89.4	1,379.4	+/-37.1	8,504.4	+/-92.2	1,782.8	+/-42.2
	#events	12,849		+/-113.4		29,071		+/-170.5		5,874		+/-76.6	
	/fb $^{-1}$	10,707.5		+/-103.5		9,377.7		+/-96.8		10,287.2		+/-101.4	
Single Tag	#events	475		+/-21.8		1,196		+/-34.6		242		+/-15.6	
	/fb $^{-1}$	395.8		+/-19.9		385.8		+/-19.6		423.8		+/-20.6	
Double Tag	#events	150		+/-12.2		307		+/-17.5		74		+/-8.6	
	/fb $^{-1}$	125		+/-11.2		99		+/-10		129.6		+/-11.4	
	ST/Pre (%)	3.7		+/-0.2		4.1		+/-0.1		4.1		+/-0.3	
	DT/Pre (%)	1.2		+/-0.1		1.1		+/-0.1		1.3		+/-0.2	

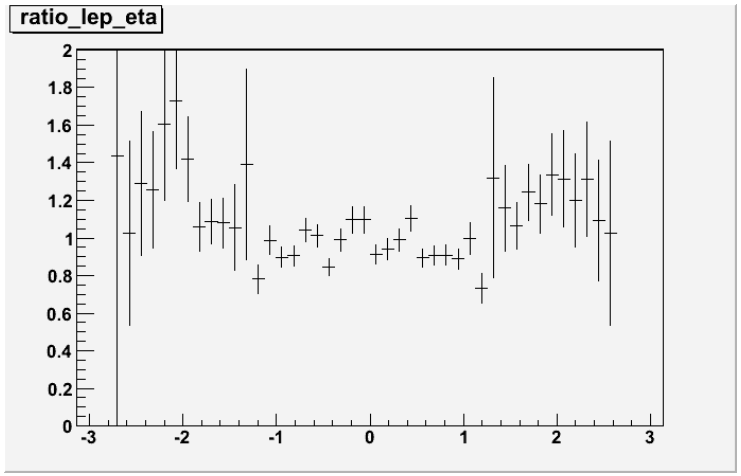
Old vs new data comparison

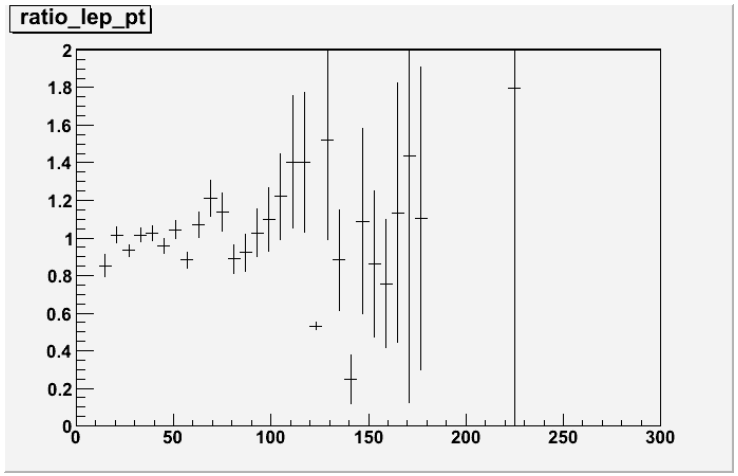
lepton

Old data
New data





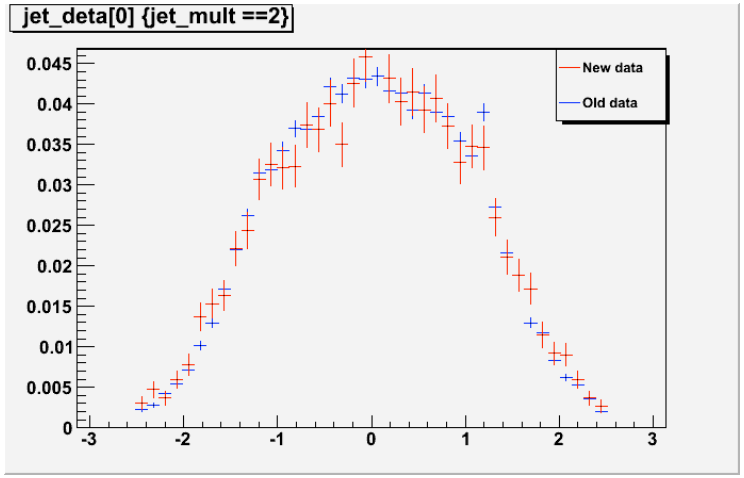


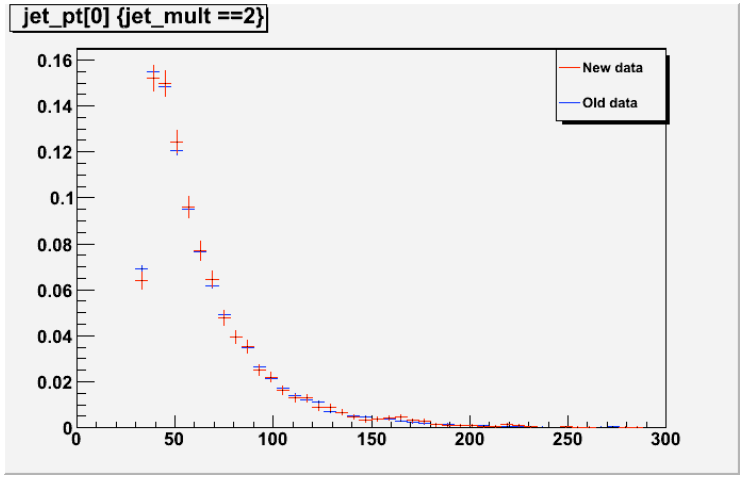


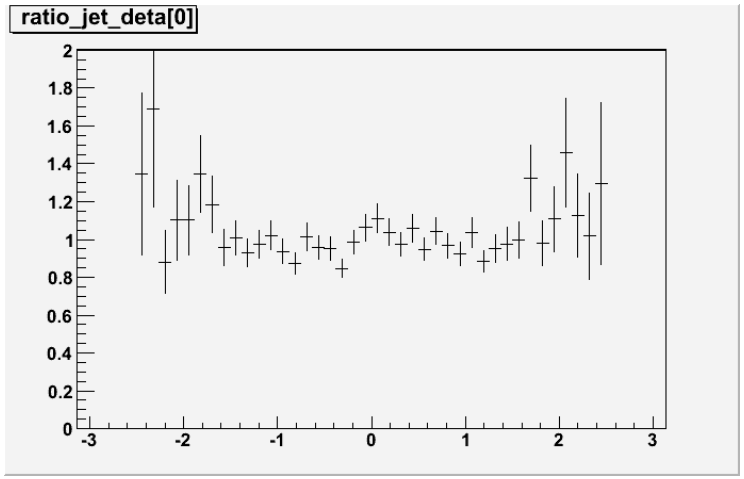
Old vs new data comparison

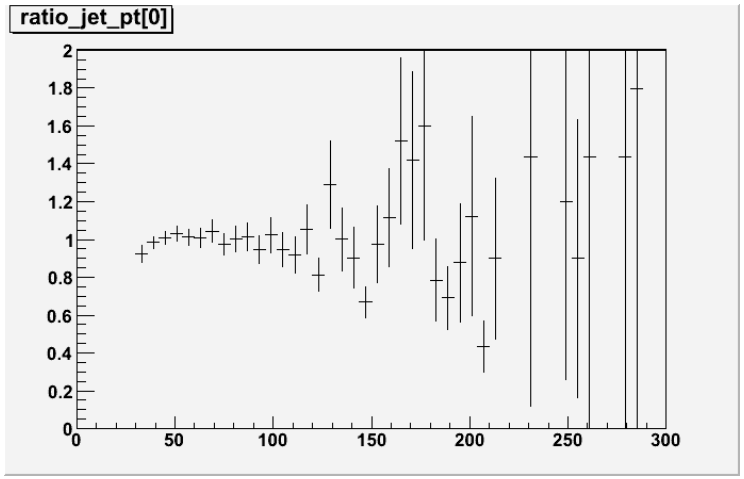
Leading jet

Old data
New data





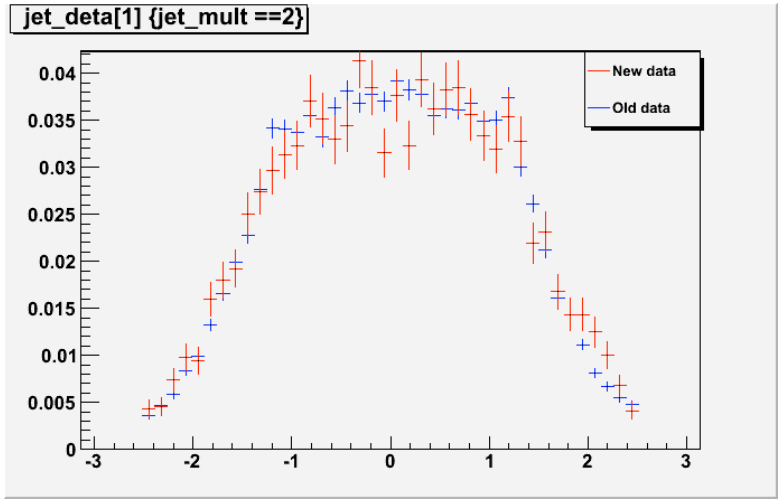


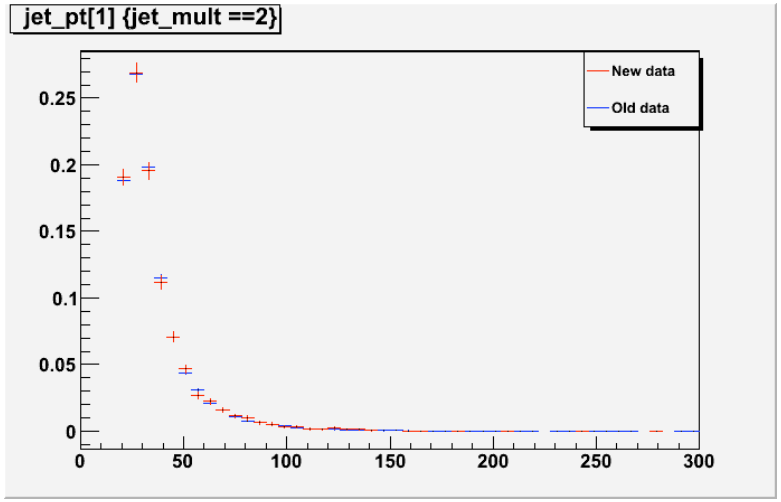


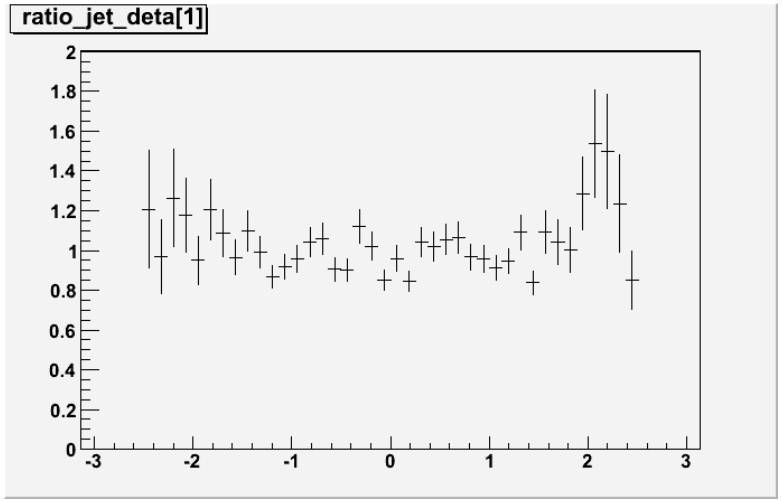
Old vs new data comparison

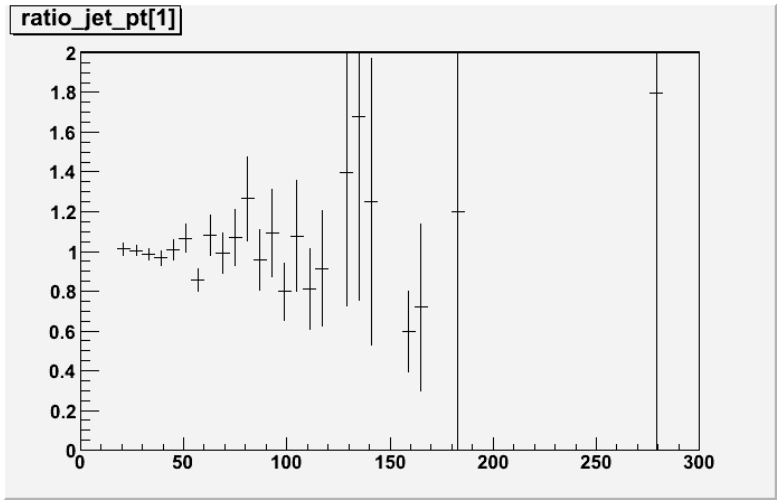
2nd jet

Old data
New data





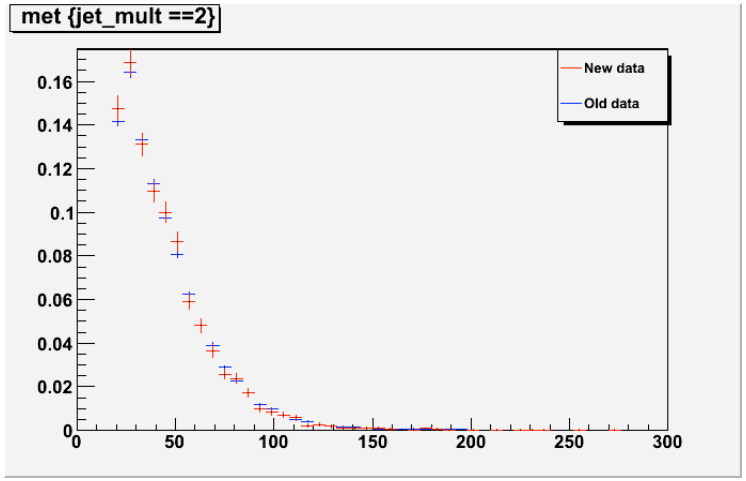


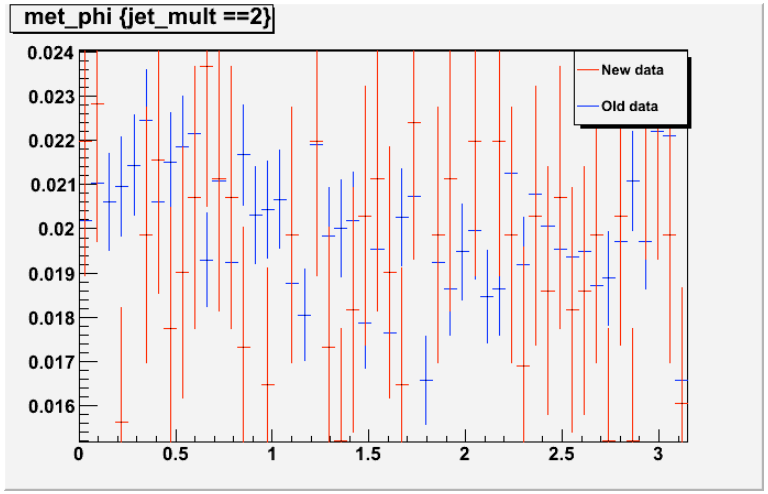


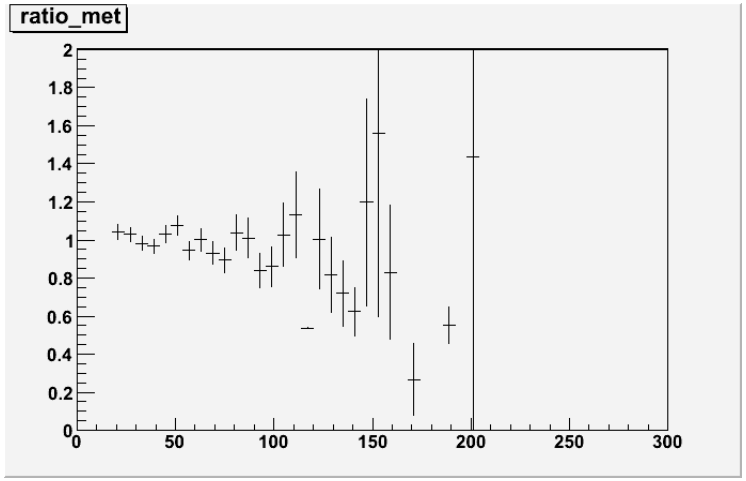
Old vs new data comparison

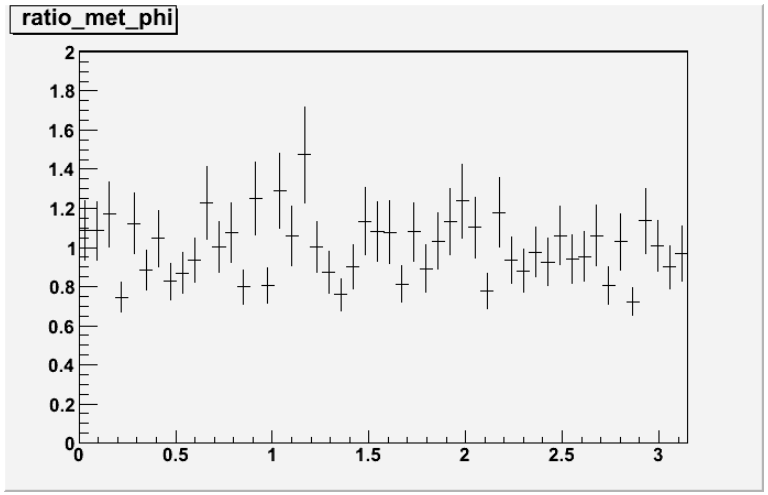
Missing Et

Old data
New data





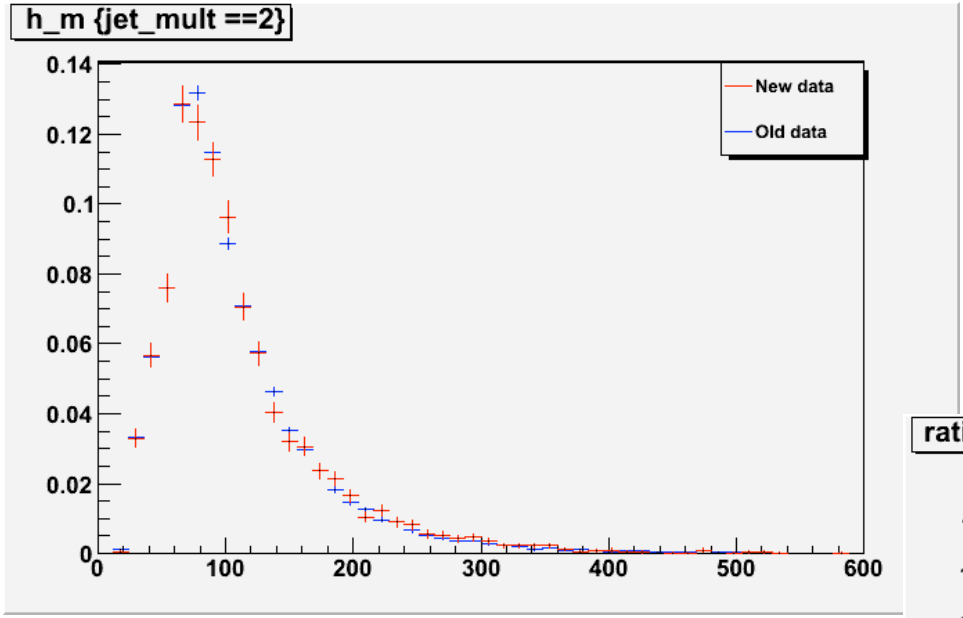


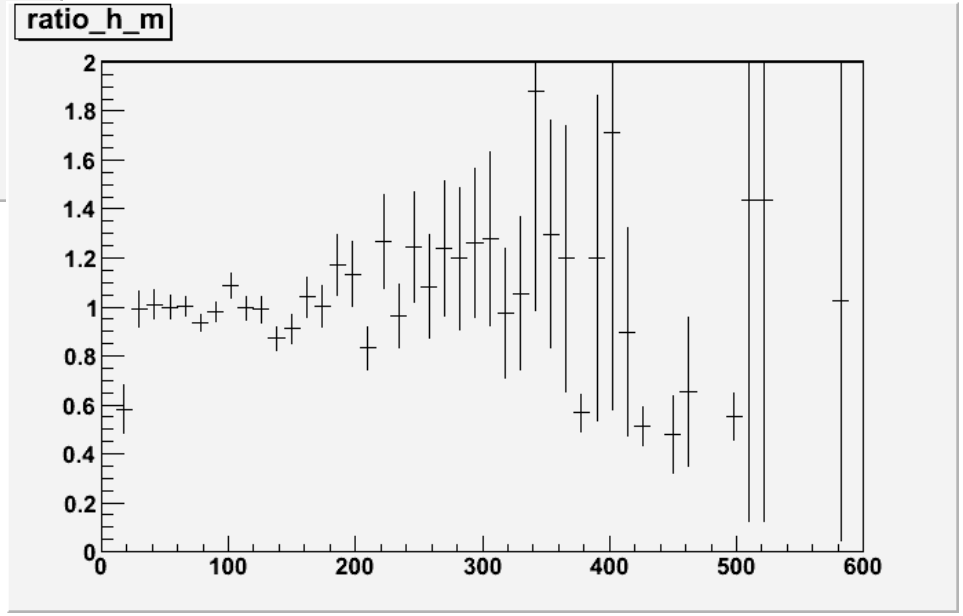


Old vs new data comparison

Dijets Mass

Old data
New data

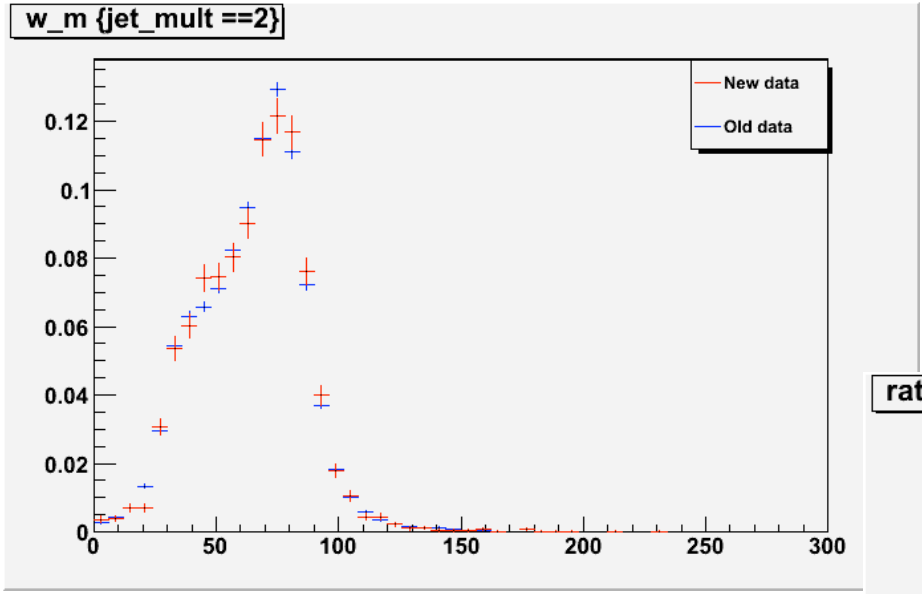


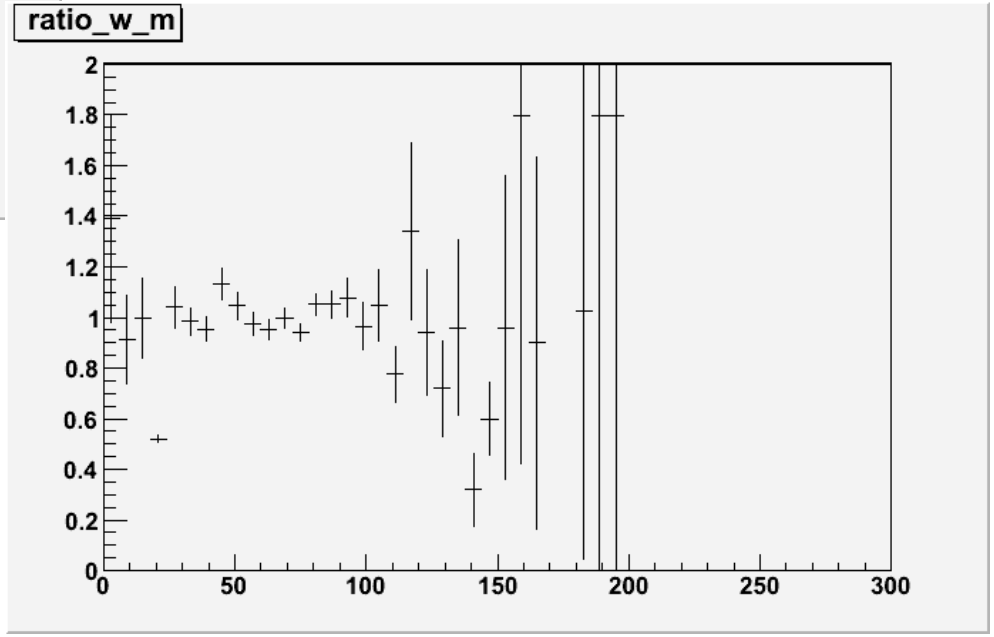


Old vs new data comparison

W transverse mass

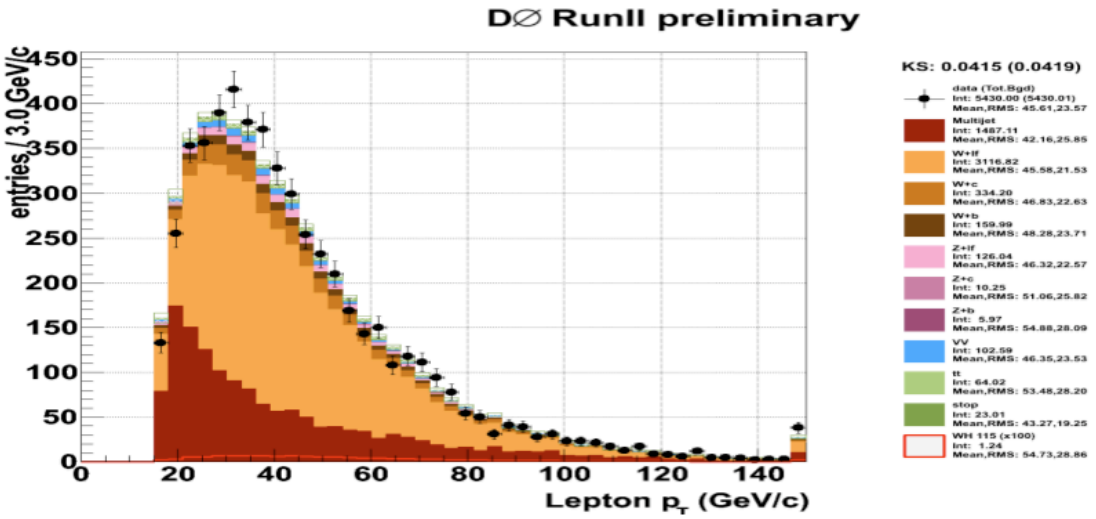
Old data
New data



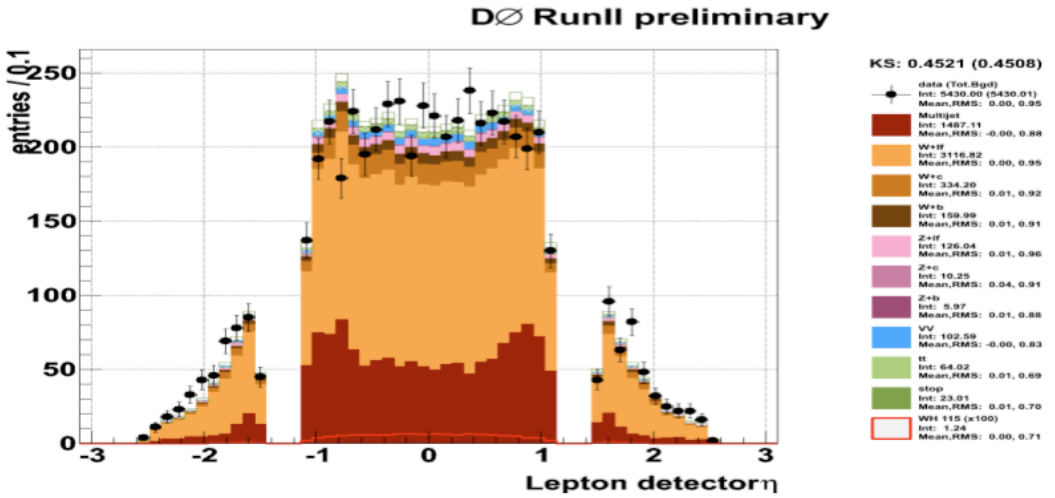


New DataVsMC

Lepton Pt

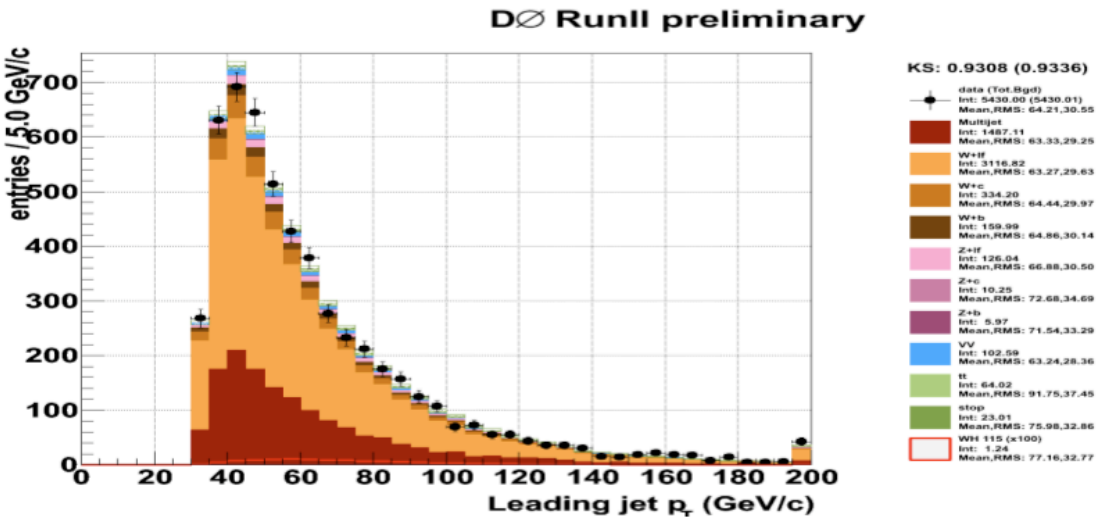


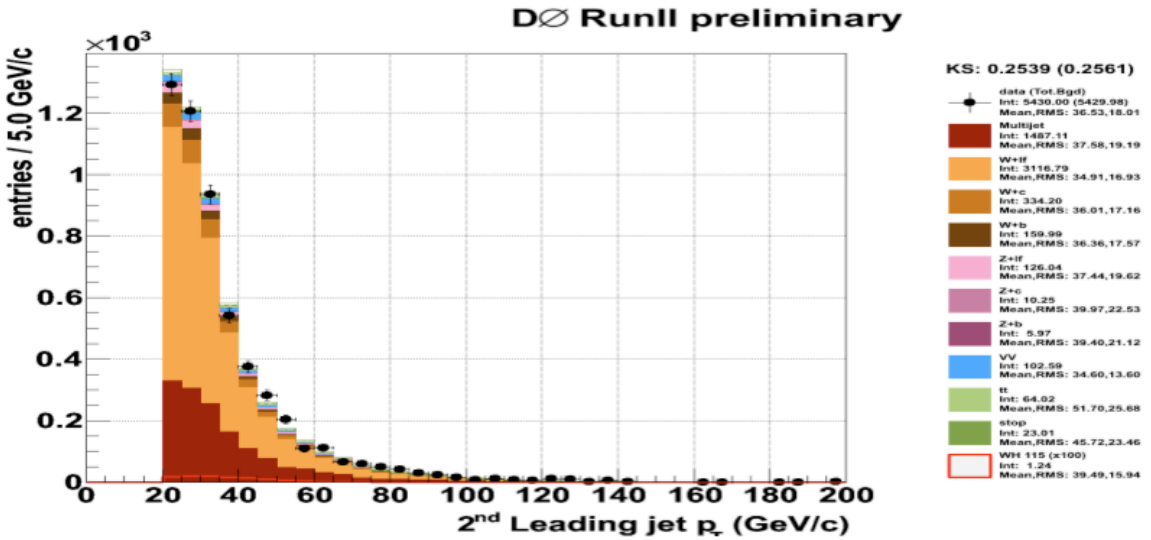
Data
Multijet
W + lf
W + c
W + b
Z + lf
Z + c
Z + b
VV
tt
single t
WH 115 (x100)



New DataVsMC

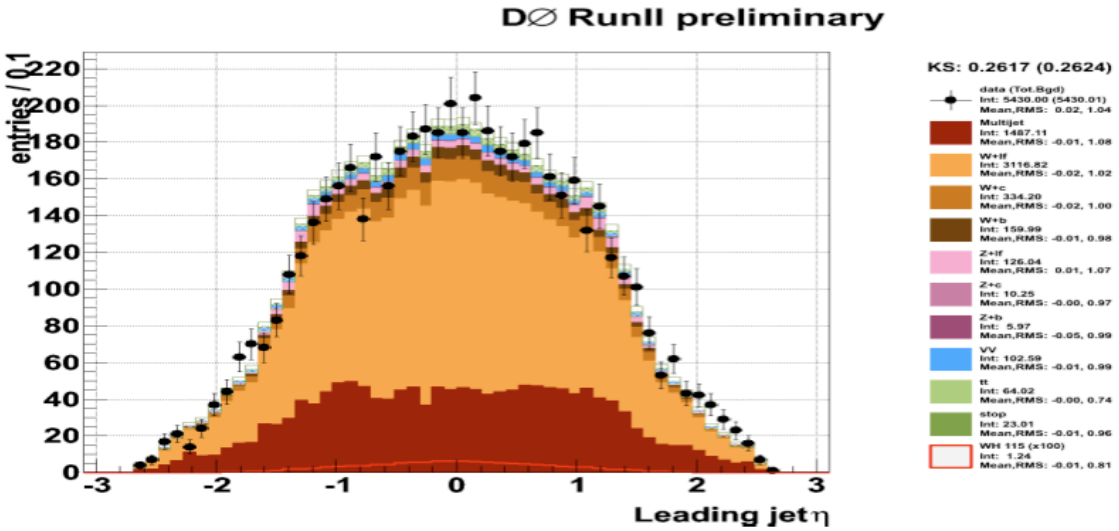
Leading and 2nd leading jet Pt

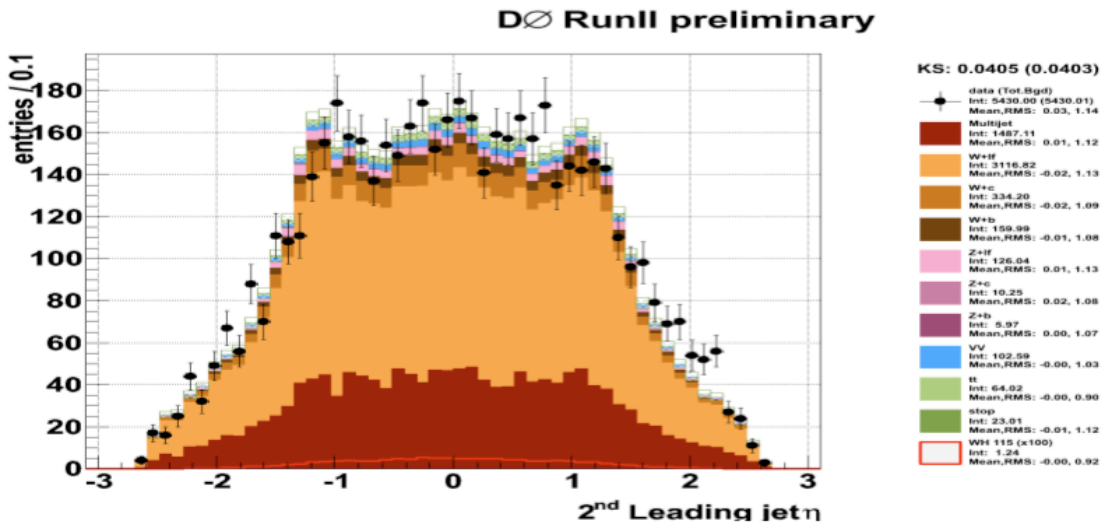




New DataVsMC

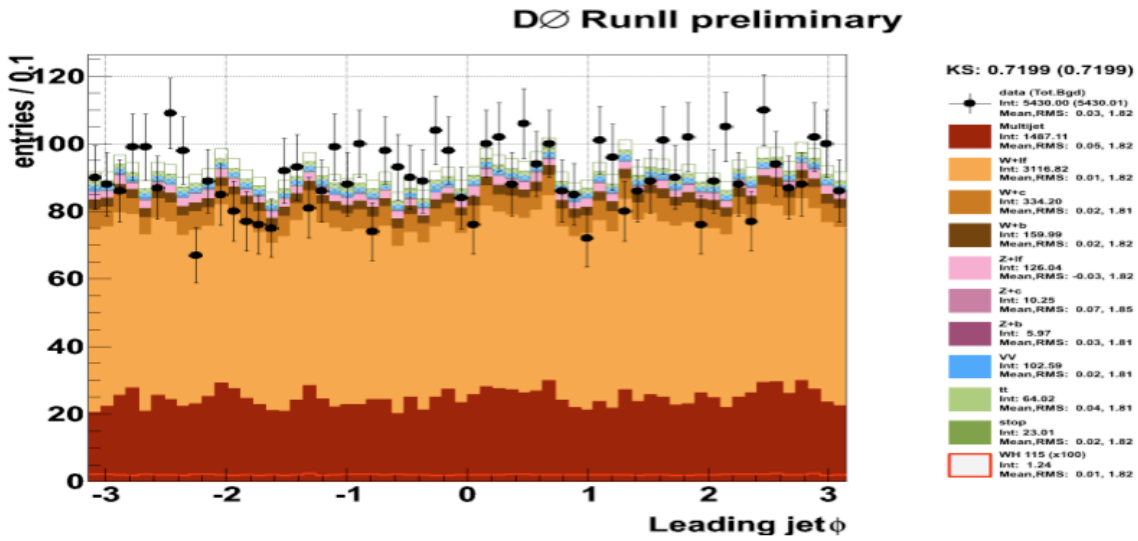
Leading and 2nd leading jet detector eta

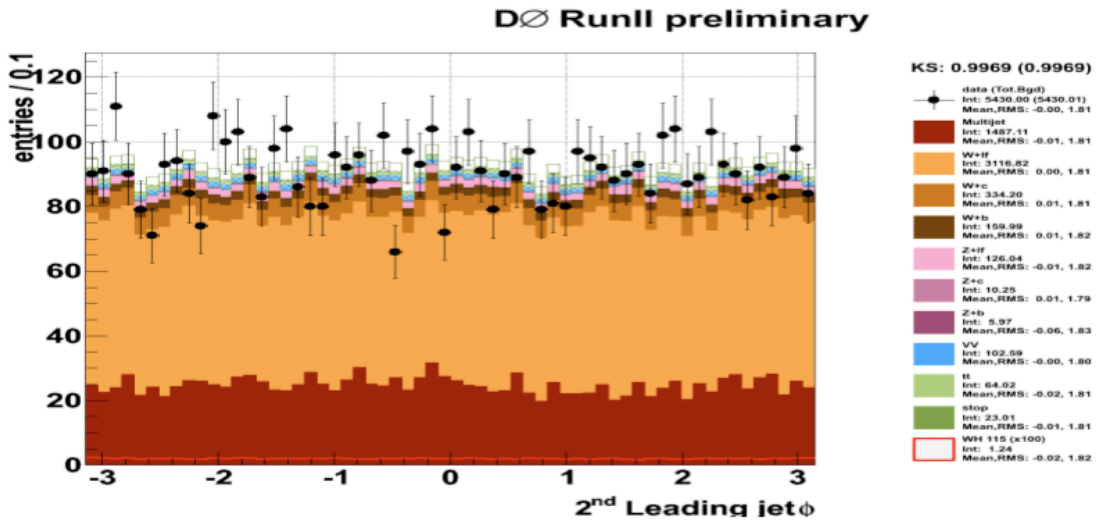




New DataVsMC

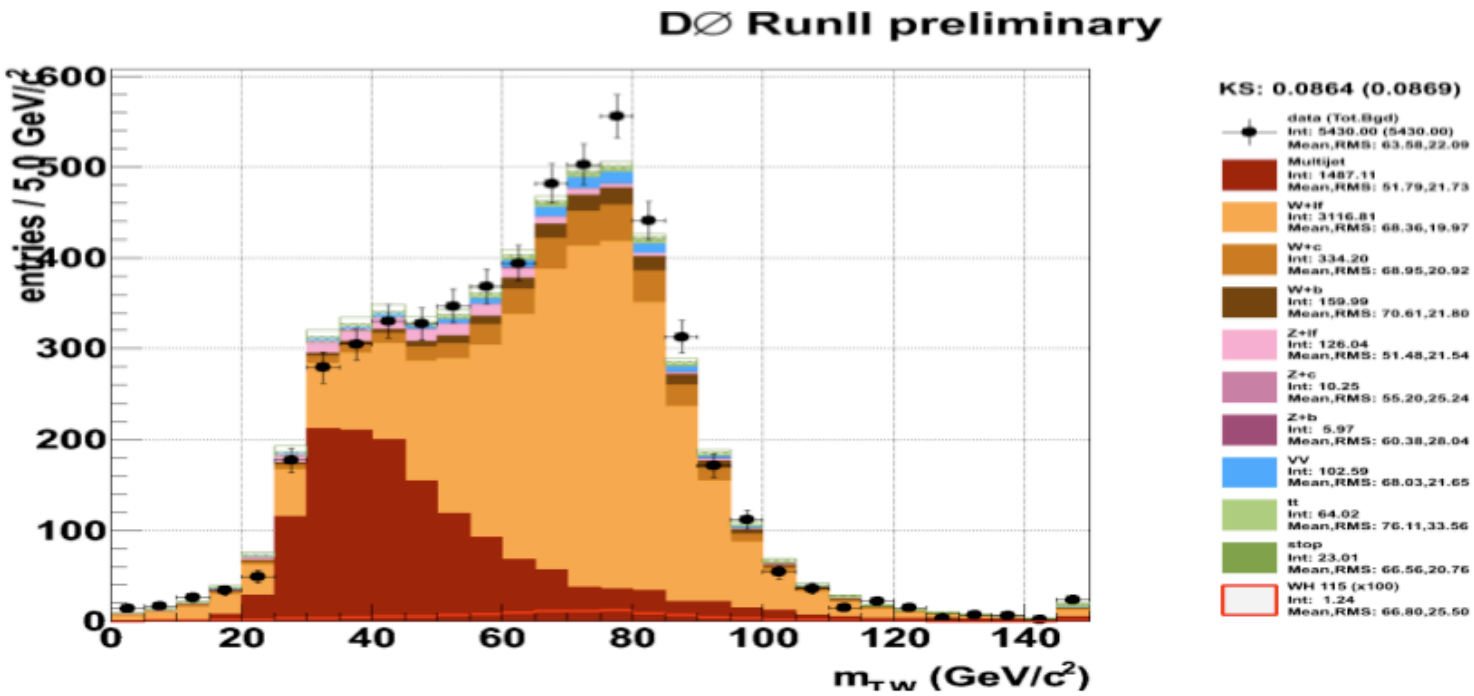
Leading and 2nd leading jet phi





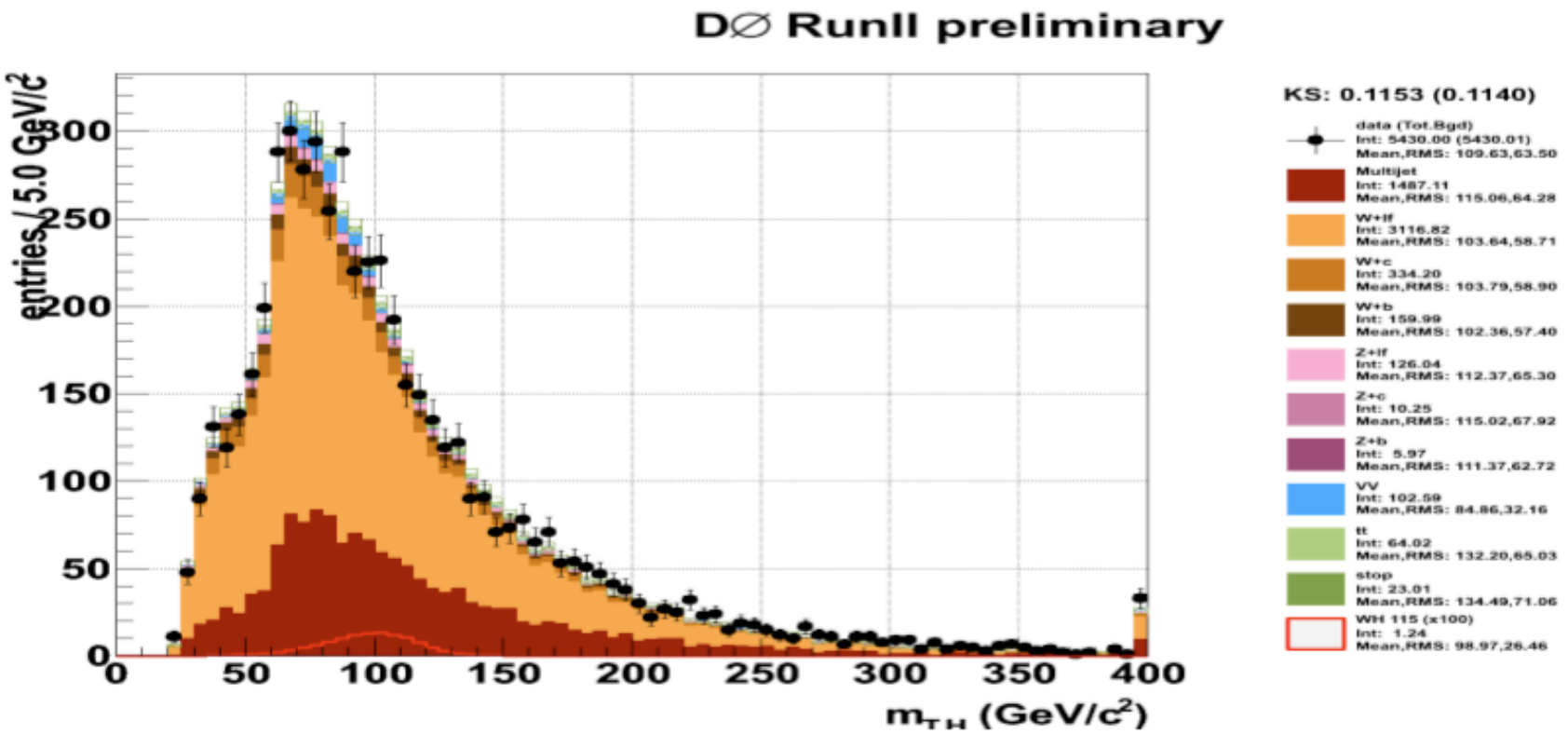
New DataVsMC

W transverse mass



New DataVsMC

Dijet mass



Conclusion and outlook

Conclusion :

-Old vs new data checked for 2, 3 jets (ST and DT).

-No big surprise, looks promising.

Outlook :

-Look at the newest data (summer 2010 dataset).

-Check the electron fake rate in EC.

New vs old data comparison for all variables available here :

2 jets :

EC only : http://www-clued0.fnal.gov/~fmiconi/pdf_run2b-3/WH_comp_data_run2b_vs2b3_tight_EC_Wtm50.pdf

CC only : http://www-clued0.fnal.gov/~fmiconi/pdf_run2b-3/WH_comp_data_run2b_vs2b3_tight_CC_Wtm50.pdf

ST : http://www-clued0.fnal.gov/~fmiconi/pdf_run2b-3/WH_comp_data_run2b_vs2b3_tight_2jets_ST.pdf

DT : http://www-clued0.fnal.gov/~fmiconi/pdf_run2b-3/WH_comp_data_run2b_vs2b3_tight_2jets_DT.pdf

3 jets :

EC only : http://www-clued0.fnal.gov/~fmiconi/pdf_run2b-3/WH_comp_data_run2b_vs2b3_tight_EC_3jets.pdf

CC only : http://www-clued0.fnal.gov/~fmiconi/pdf_run2b-3/WH_comp_data_run2b_vs2b3_tight_CC_3jets.pdf

ST : http://www-clued0.fnal.gov/~fmiconi/pdf_run2b-3/WH_comp_data_run2b_vs2b3_tight_3jets_ST.pdf

DT : http://www-clued0.fnal.gov/~fmiconi/pdf_run2b-3/WH_comp_data_run2b_vs2b3_tight_3jets_DT.pdf

DataVsMC new data, 2 jets :

http://www-clued0.fnal.gov/~fmiconi/pdf_run2b-3/WH_OutputManager_newdataFixed.pdf

Backup