STAR Update
March 4, 2011

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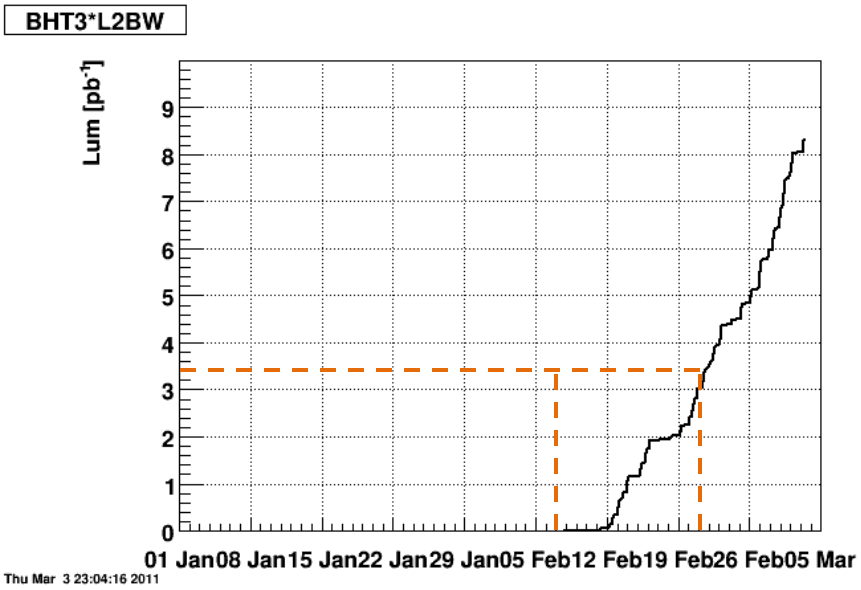
For the STAR Collaboration

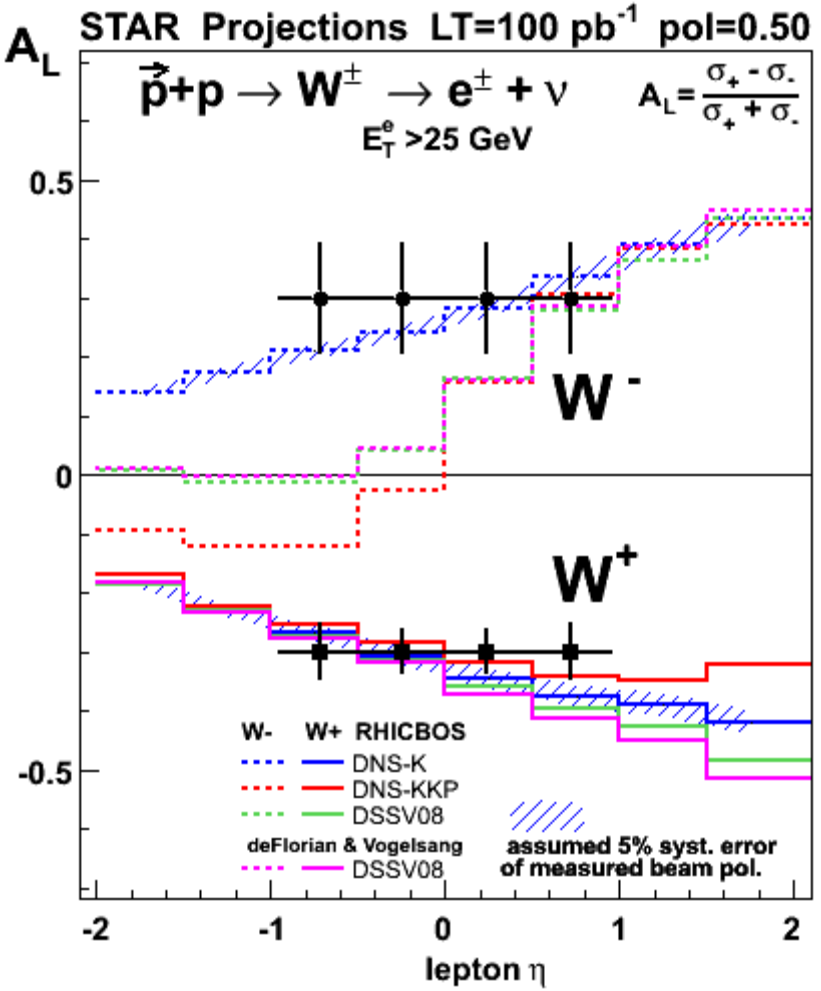
“Real Time” W Analysis Status

W Trigger Transverse Polarization Sampled Luminosity ~ 8.5 pb^{-1}



Only L~3.5 pb^{-1}, up to Feb 21 (10 days total), is used in online W analysis so far

Run 11 Projections

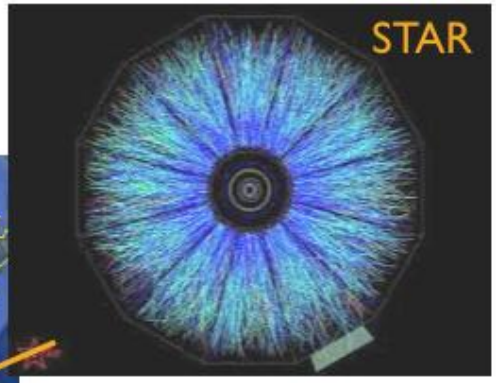


Longitudinal Run 11 goals:

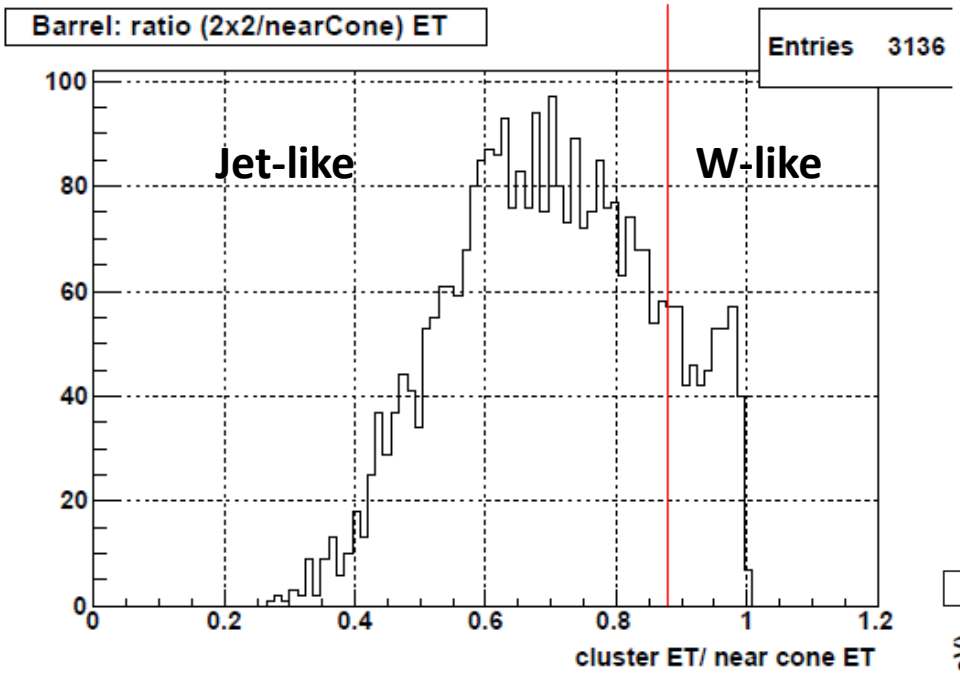
Sampled Luminosity = 80 pb^{-1}

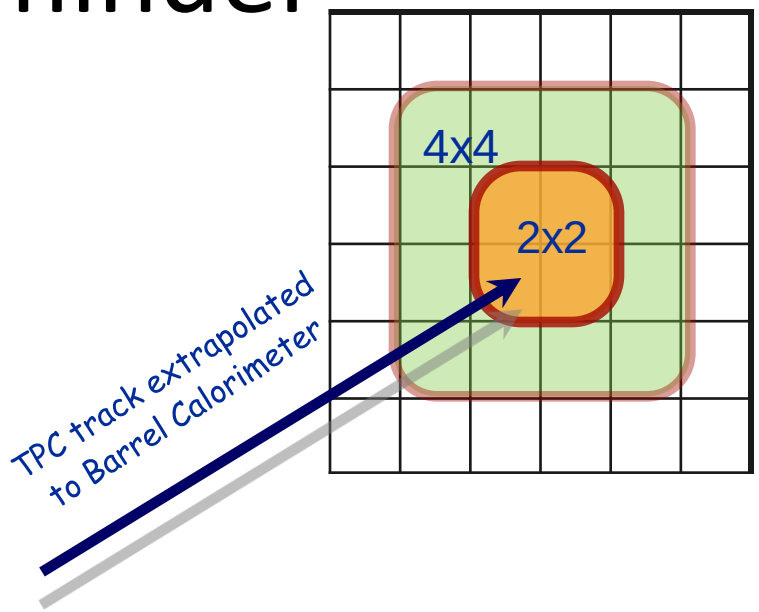
Sampled FOM P^{2}L = 20 pb^{-1}

Multi-site real time STAR data reco , March 2011

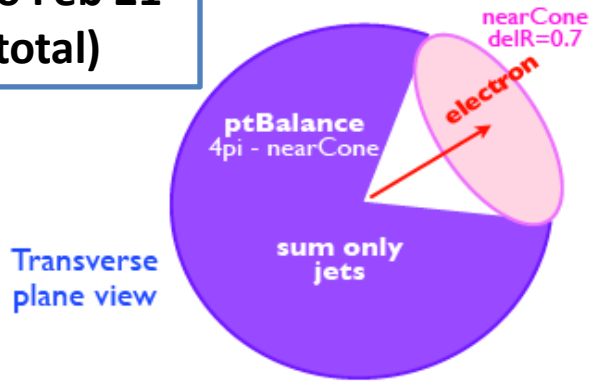


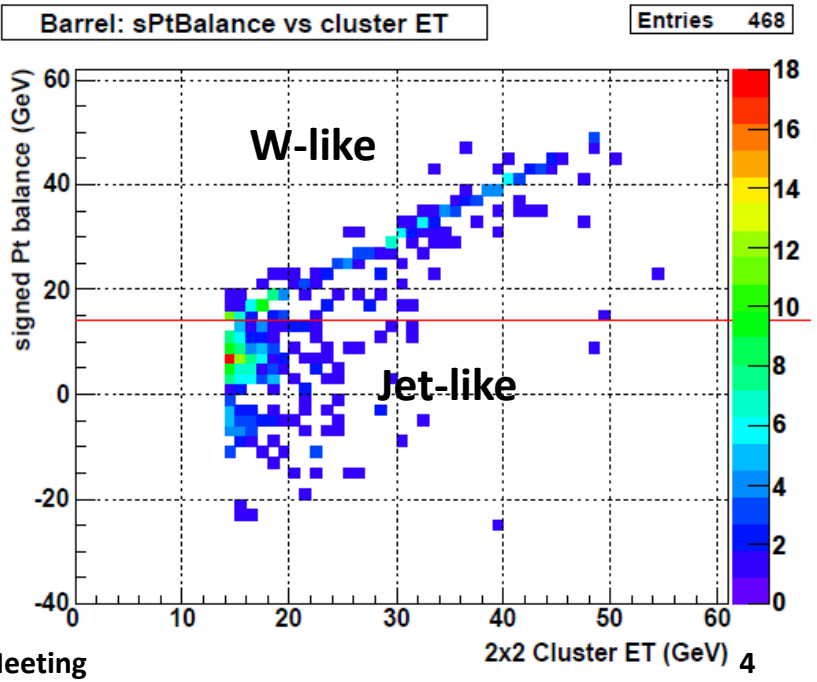
W Reconstruction Reminder





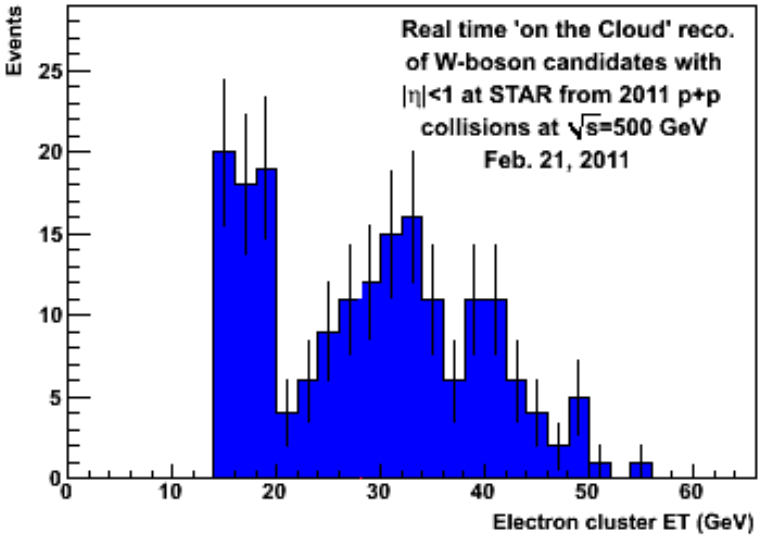
All plots are from Run 11 data up to Feb 21 (10 days total)



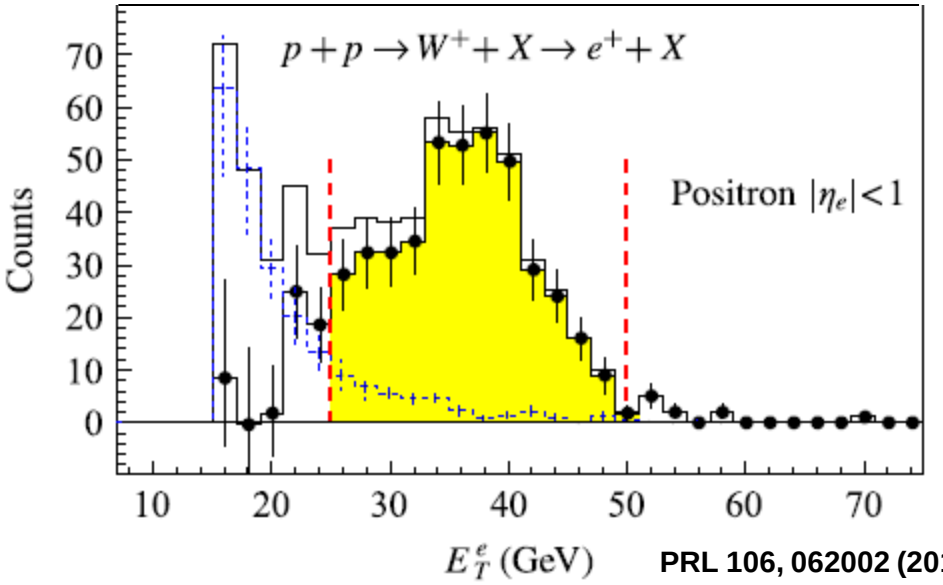


First ~100 Ws from STAR in Run 11

Run 11 "Real Time"
Analysis: L~3.5 pb^{-1}

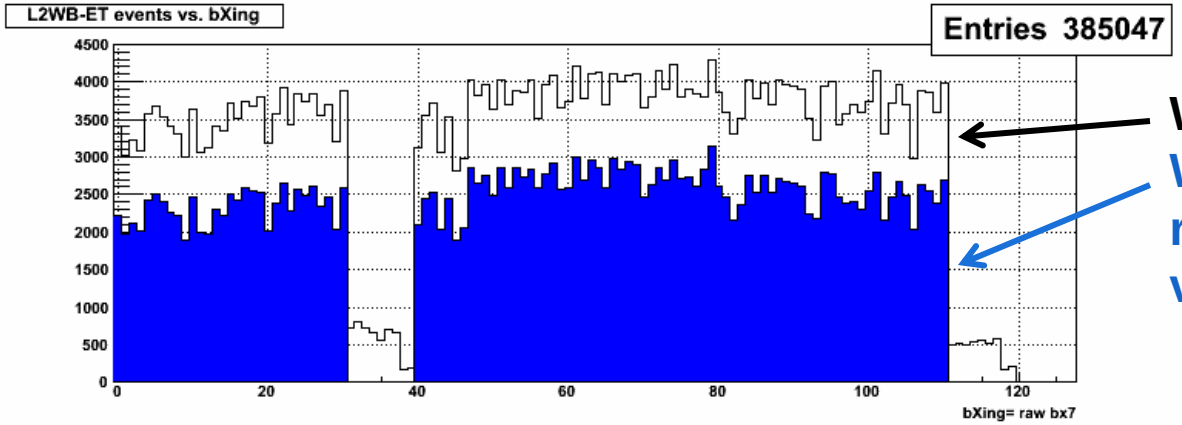


Run 9 Published
Results: L=13 pb^{-1}



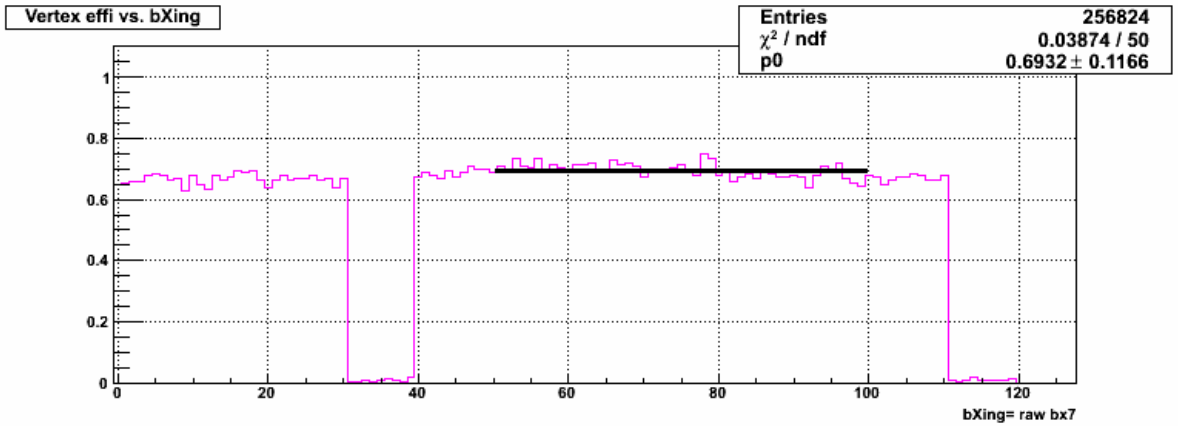
PRL 106, 062002 (2011)

Investigating Possible Backgrounds



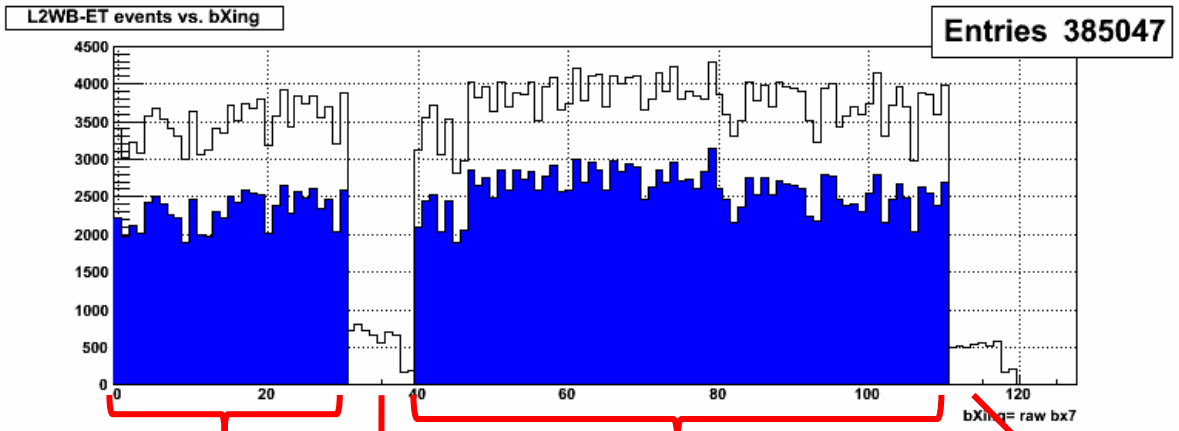
W Trigger Events

W Trigger events w/ a valid reconstructed collision vertex from TPC tracks



~70% of W trigger events have a good reconstructed vertex

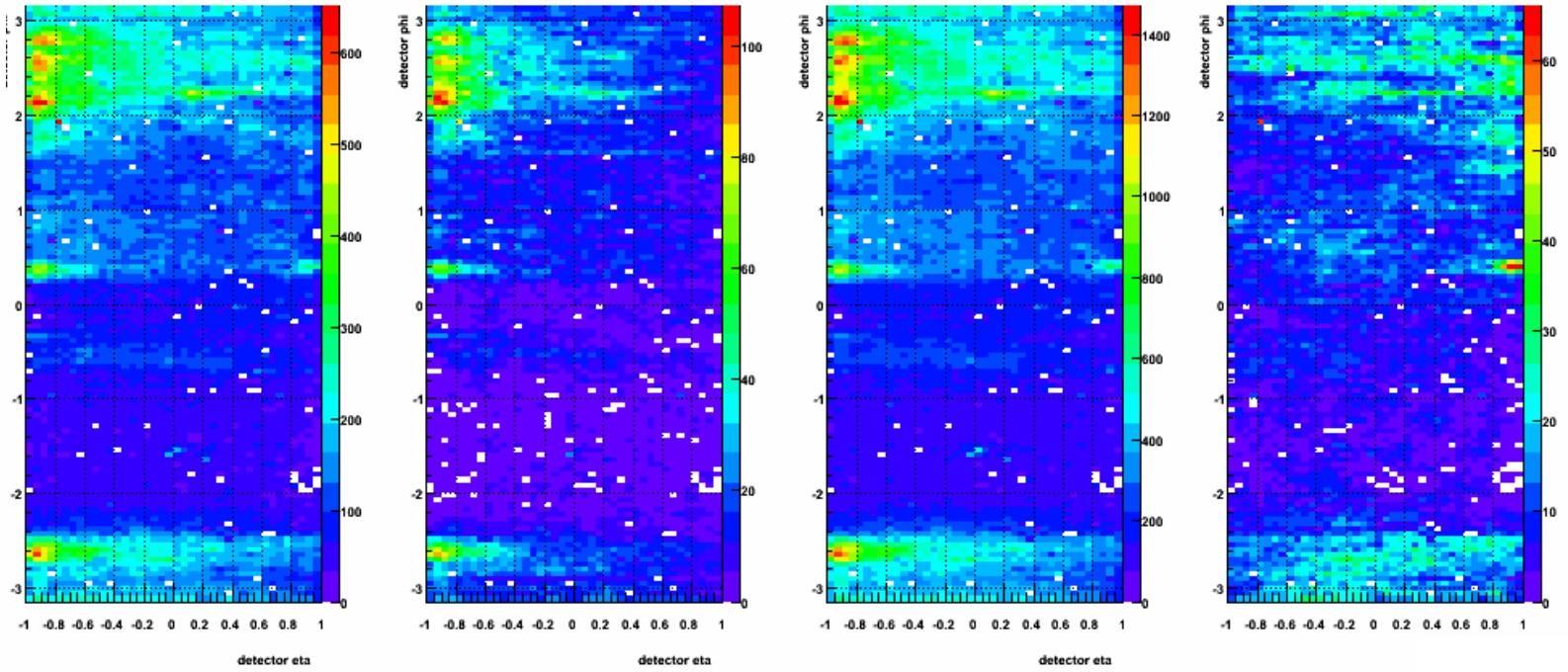
Barrel EMC ‘hits’ (η,Φ) for events w/ no reconstructed TPC vertex



Blue Abort Gap

Yellow Abort Gap

Φ



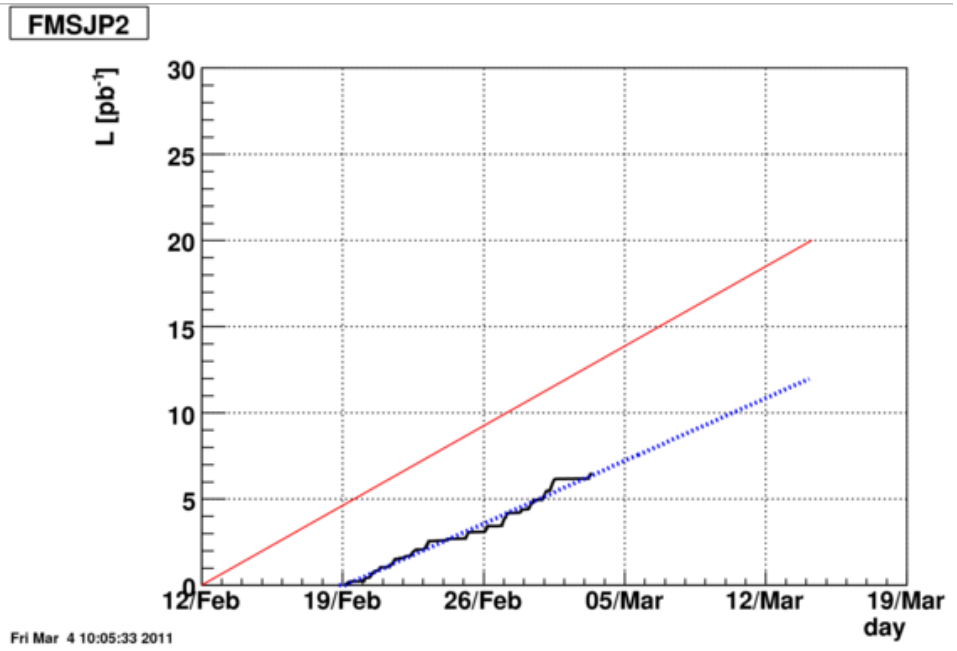
-Z (east)

+Z (west)

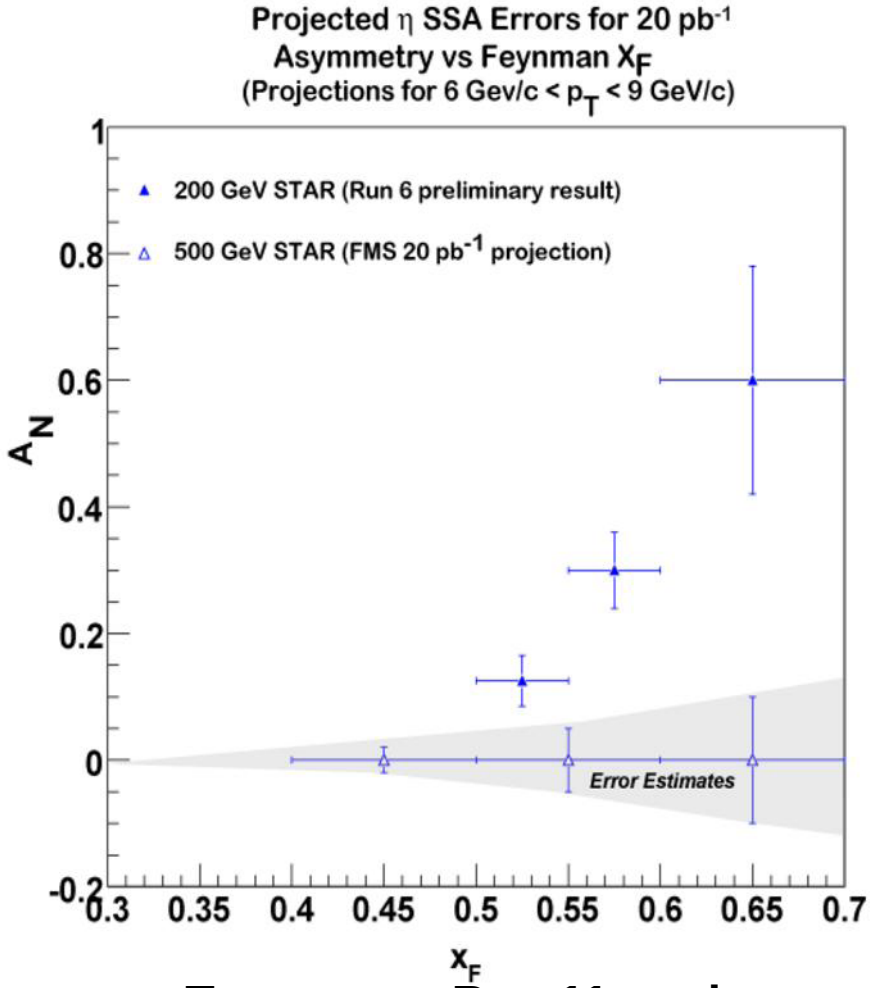
η

FMS Status

FMS Trigger Sampled Luminosity ~ 6.0 pb^{-1}



Only L~0.5 pb^{-1} is used in the online analysis on the following slides



Transverse Run 11 goals:

Sampled Luminosity = 20 pb^{-1}

Sampled FOM P^2L = 4 pb^{-1}

2 photon Mass (35GeV<E<55 GeV)

XF ~ 0.18

A) 3.5<Y<3.9

Pi0: Sig/Bck ~ 15,000/10,000

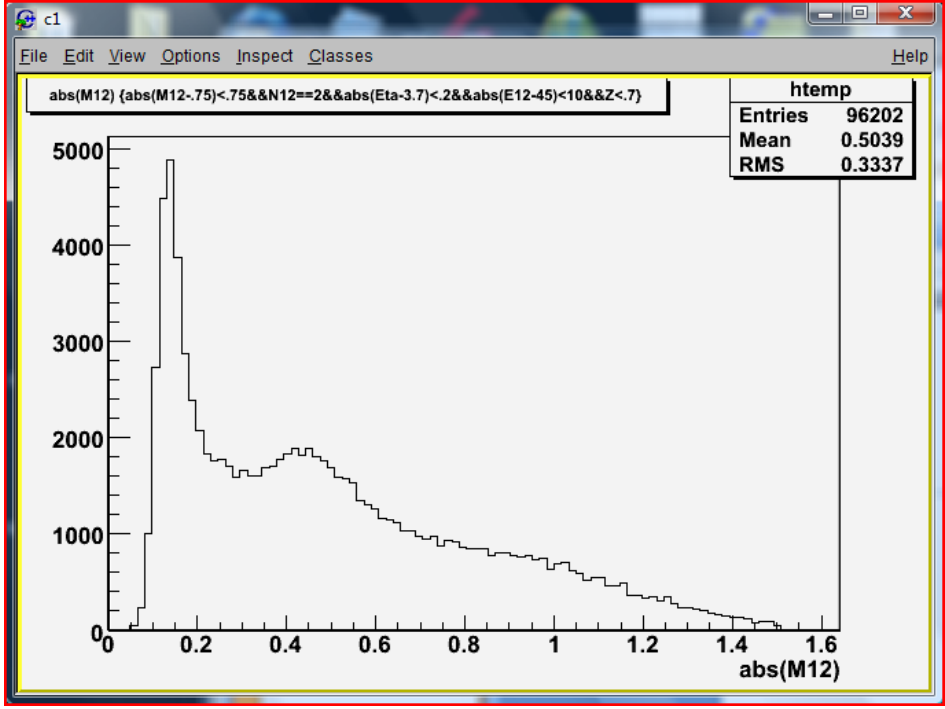
Eta: Sig/Bck ~ 8,000/20,000

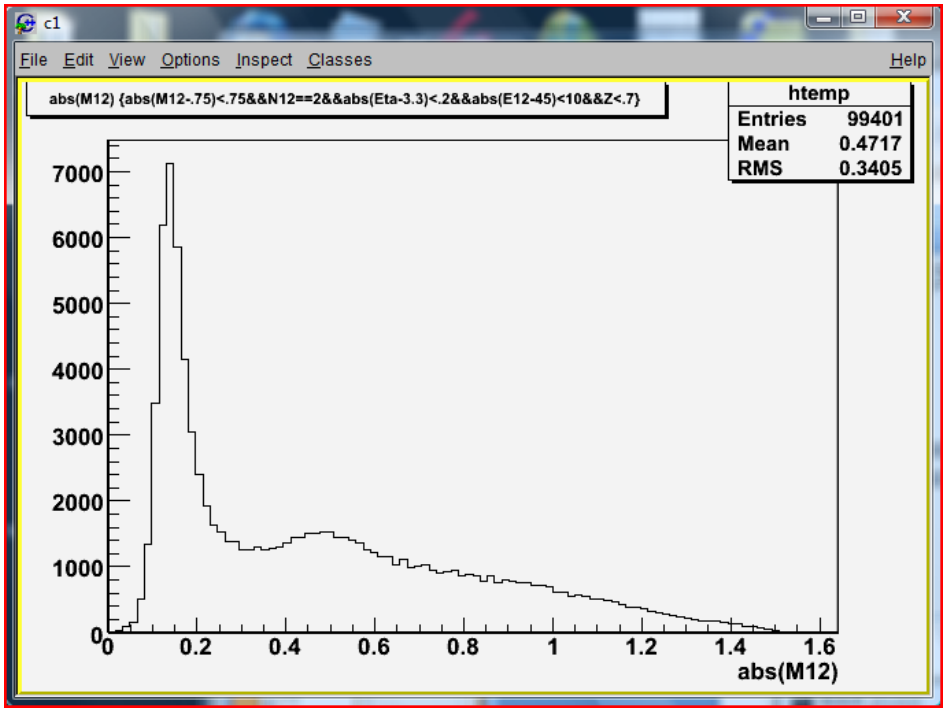
B) 3.1<Y<3.5

Pi0: Sig/Bck ~ 25,000/7,000

Eta: Sig/Bck ~ 4,000/22,000

Online Results
(Approximately 7M events)





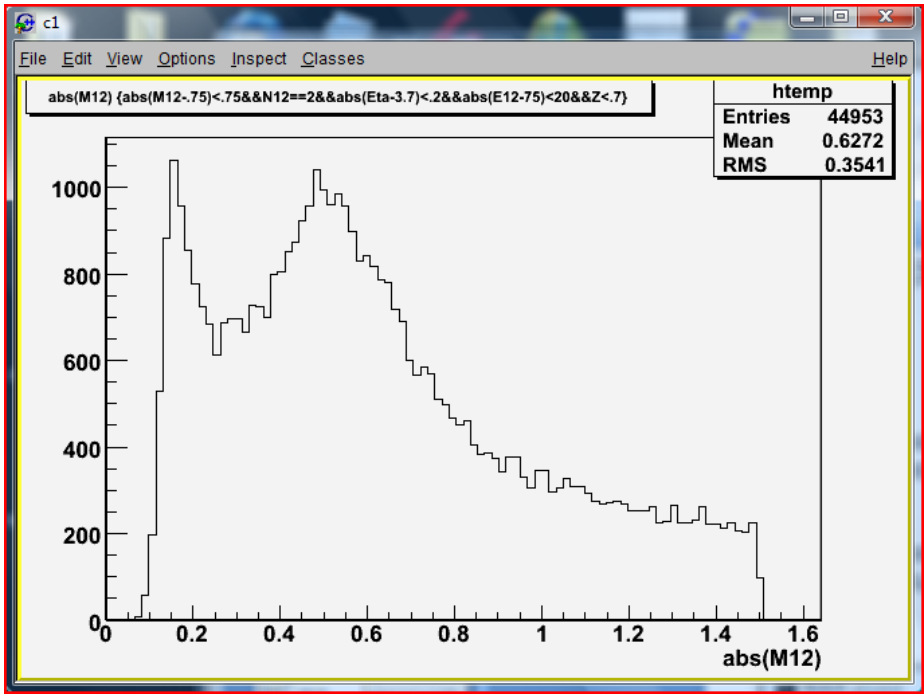
2 photon Mass (55GeV<E<95 GeV)

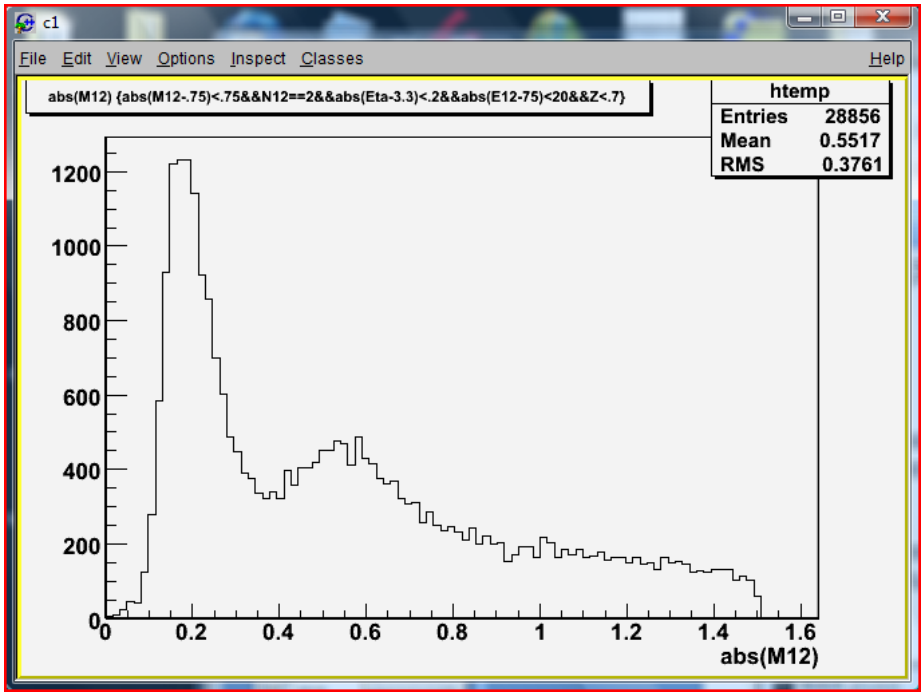
XF ~ 0.3

A) 3.5<Y<3.9
Pi0: Sig/Bck ~ 2,500/2,500
Eta: Sig/Bck ~ 6,000/9,000

B) 3.1<Y<3.5
Pi0: Sig/Bck ~ 3,000/3,000
Eta: Sig/Bck ~ 3,000/4,000

Online Results
(Approximately 7M events)





Transverse Run Update

- Approximately 6 pb^{-1} integrated luminosity for FMS triggers
- Approximately 80M FMS Triggers:
  - Jet Patch
  - Cluster type
- Estimate 7-10 days until switch to Longitudinal running
- Online-results with FMS and Barrel/TPC (Ws) encouraging
- Investigating possible backgrounds