W + Jets Study

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CDF HEP Group Meeting

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Outline of the Talk

- MET and W Boson Plots

- Properties of Jets with L5 Corrected Et > 5GeV and Et<10 GeV studied

- Tracks Selection for Above Jets described

- Track Properties

- Types of Tracks and their Respective Errors

- Look at Tracks for Jet Et > 5 GeV and < 10 GeV

Leading Jet Variables

L5 Corrected Et
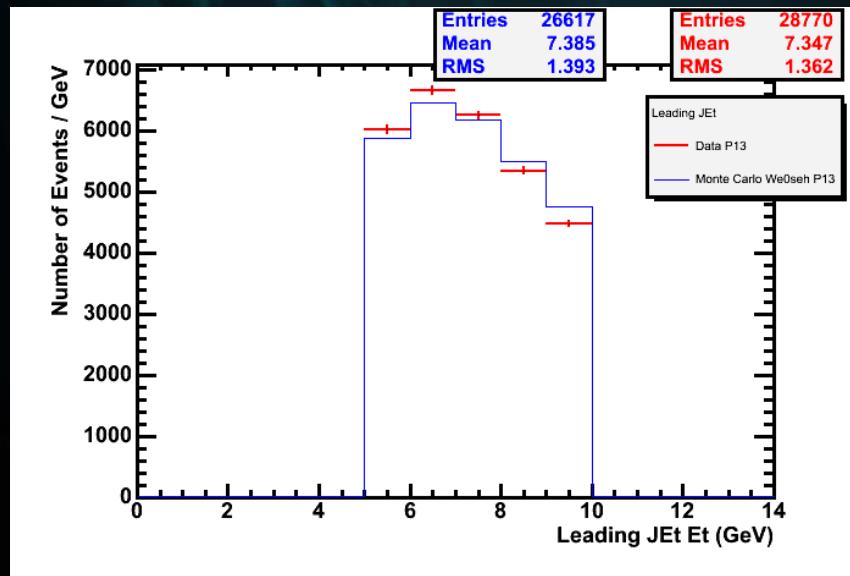
Leading Jet η
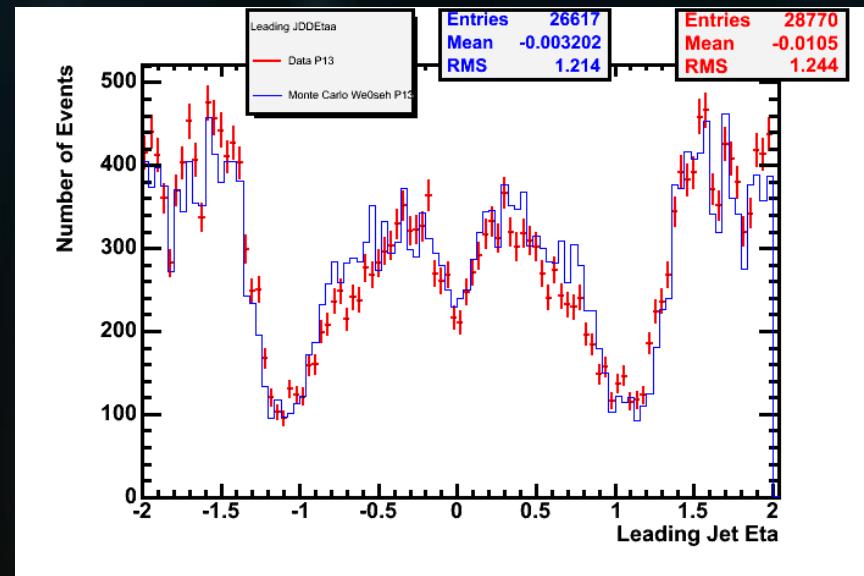
Leading Jet contd…..
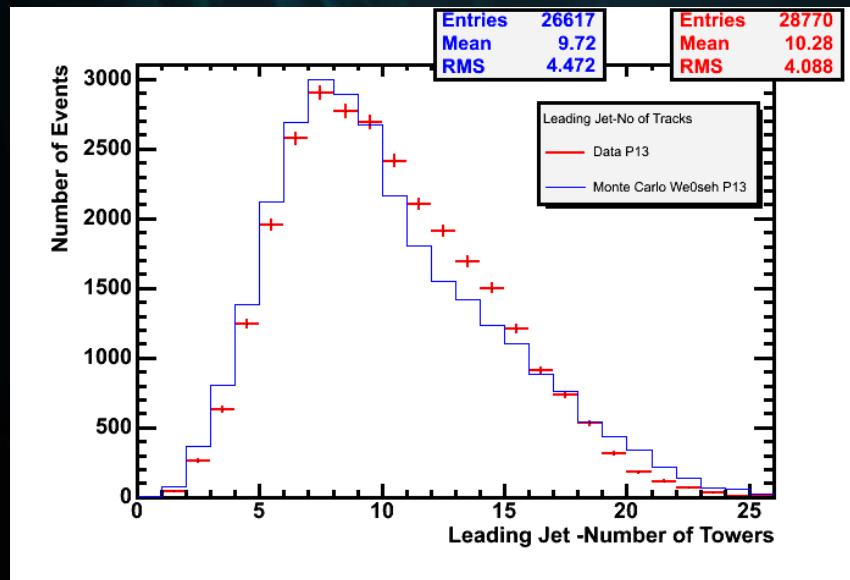
**Number of Towers**   **Number of Tracks**
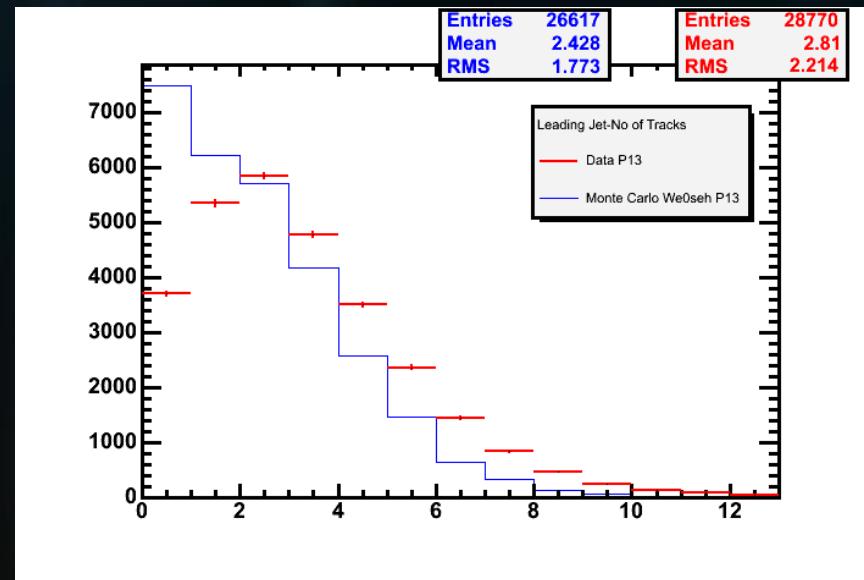
Leading Jet contd…

Data-Number of Tracks Vs Leading Jet Et
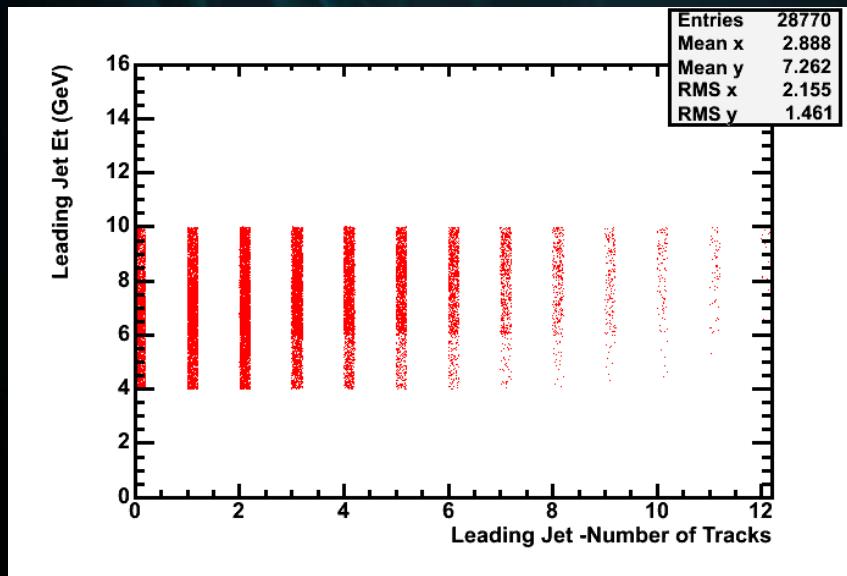
MC-Number of Tracks Vs Leading Jet Et
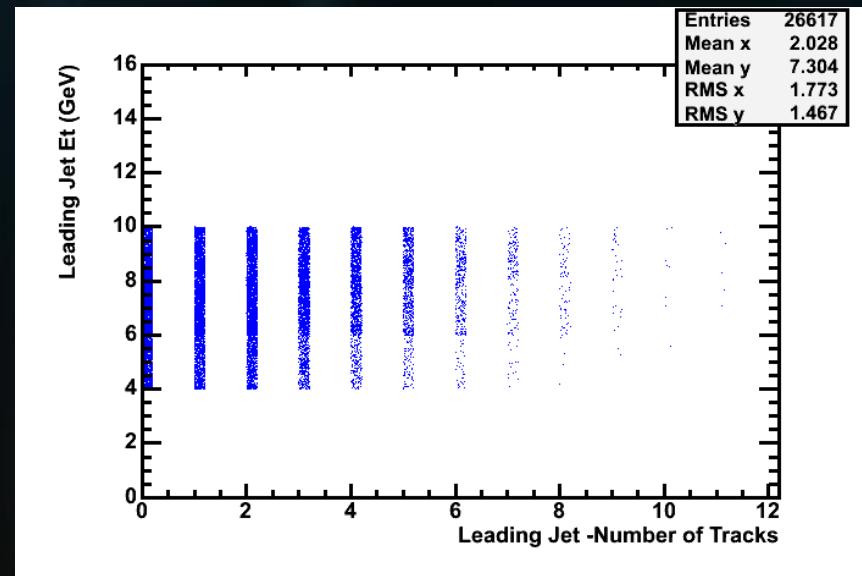
TRACK ALGORITHM

- Three Types of Tracks studied-COT Only, SVX Only and COT-SVX only
- Tracks classified into the above three types based on the Tracking Algorithm
- The Hyperlink illustrates my Track Selection
- COT Only Tracks correspond to Algorithm 2
- SVX Only Tracks correspond to Algorithm 16
- COT-SVX Tracks correspond to Algorithm 11 or 23
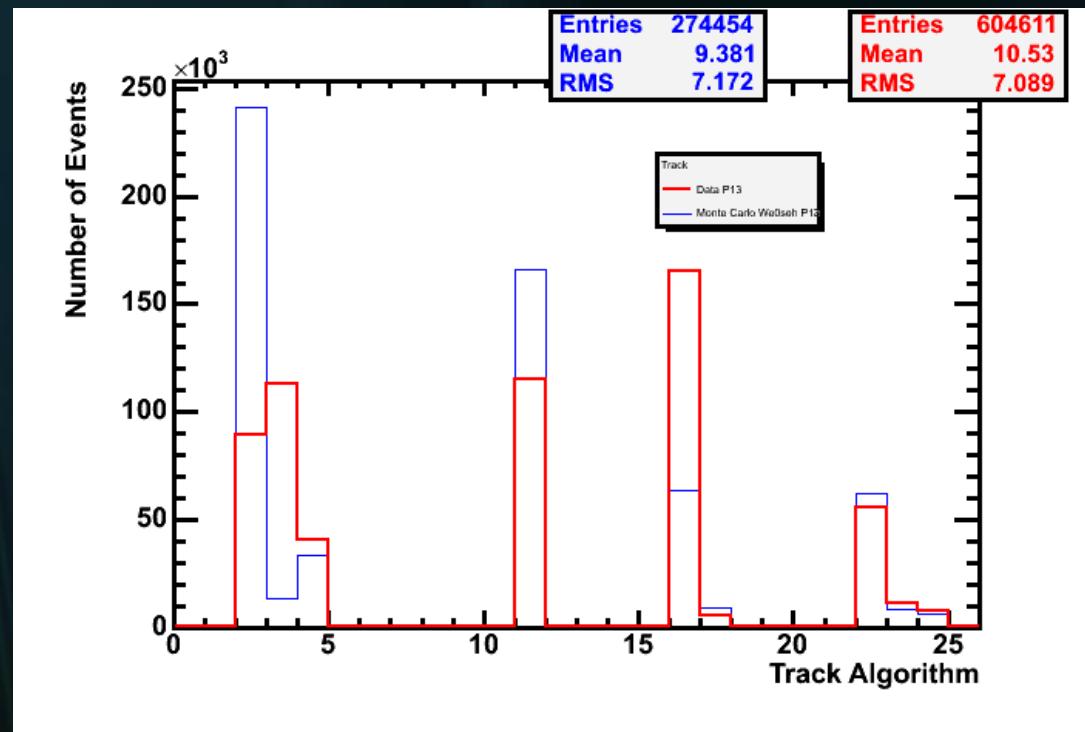
Maximum Track Pt Distribution in the Leading Jet Tracks

- Arrange the Tracks In the Leading in decreasing order of Pt
- Pick the First one on in the list - Maximum Track Pt
- This is the Variable that is plotted on left
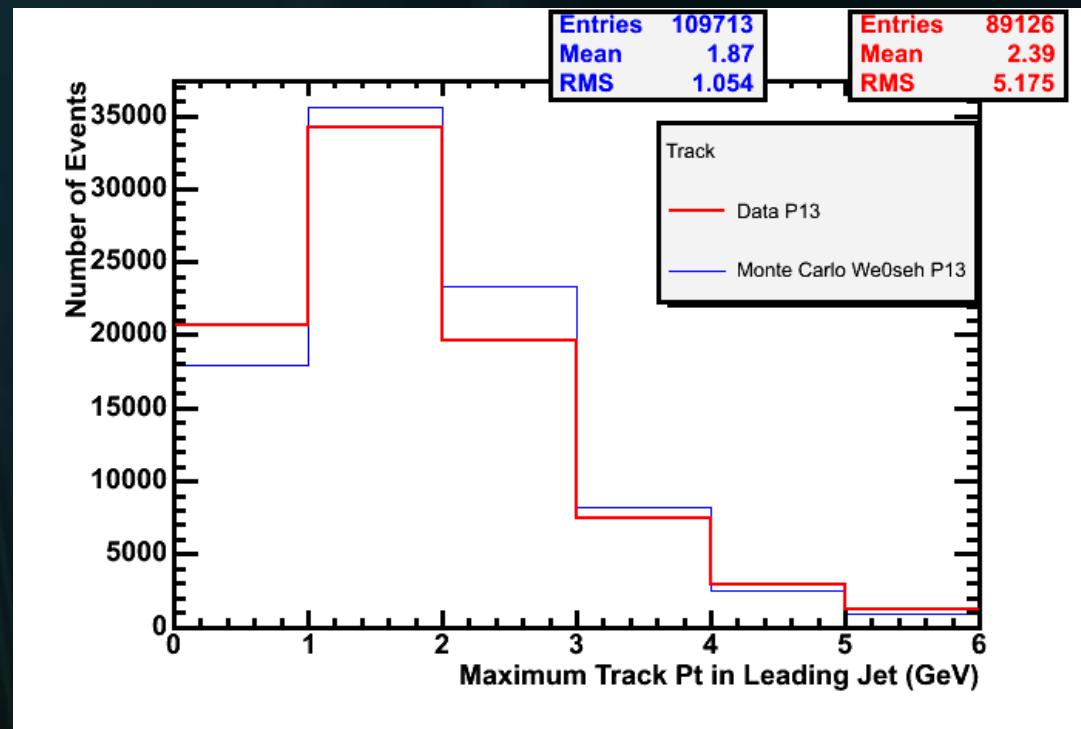
Delta R Between The Maximum Pt Track and All Other Tracks in the Leading Jet

•Jets Are Clustered with Cone of Radius =0.4 cm.

•The variable Delta R should be < 0.4 cm

•The Discrepancy in the Mean between MC and Data is not yet understood

•Could be that Data has a Tail that MC does not?
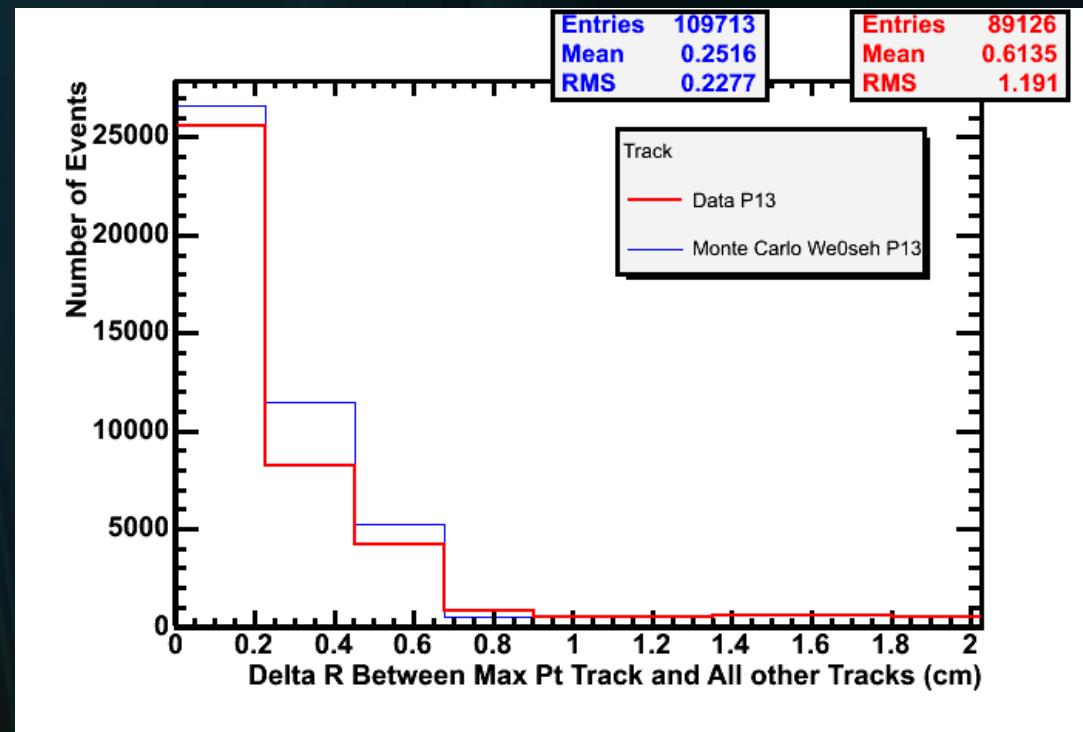
Conclusions

- Investigate the Criteria for choosing Tracks in the Jet (Algorithm of Number of Hits)
- W+njets >=1 plots for jets opening angle

PREVIOUS W+Jets Analysis
Number of Tight Events: 403009

	Number of Events	(nJet>=N)/(nJet>=0)
nJet>=0	147008	1
nJet>=1	22535	0.153290977
nJet>=2	4402	0.029943949
nJet>=3	885	0.006020081
nJet>=4	208	0.001414889

Ratio of (Tight Events/W events) =

0.3641

(nJet>=2)/(nJet>=1)   0.195340581

MY NUMBERS

	Tight Electron Evt	W Event	(nJet>=N)/(nJet>=0)
nJet>=0	711	265	1
nJet>=1	372	73	0.275471698
nJet>=2	93	24	0.090566038
nJet>=3	29	7	0.026415094
nJet>=4	5	2	0.00754717

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