W+ Jets

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UW Madison HEP Group meeting

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Outline of the Talk

- Jet Selection Cuts
- “Electron-Jet Removal”
- Properties of all Jets after “Electron-Jet” Removal
- Leading Jet and Next-to Leading Jet variable distributions
- Look at Next-to-Next Leading Jet properties
- Comparison Plots between COT-Only,SVX-Only and COT+SVX Tracks
- Track Z Error for the above mention three types of Tracks

Jet Selection Cuts

- Jets Clustered with JetClu R=0.4 algorithm
- Raw Jet Et corrected to L5 Jet Corrections(Absolute Jet Et Correction)
- Jets selected with Corrected Et >15 GeV and $|\eta_D| <= 2$

Selection of Tracks associated with a Jet

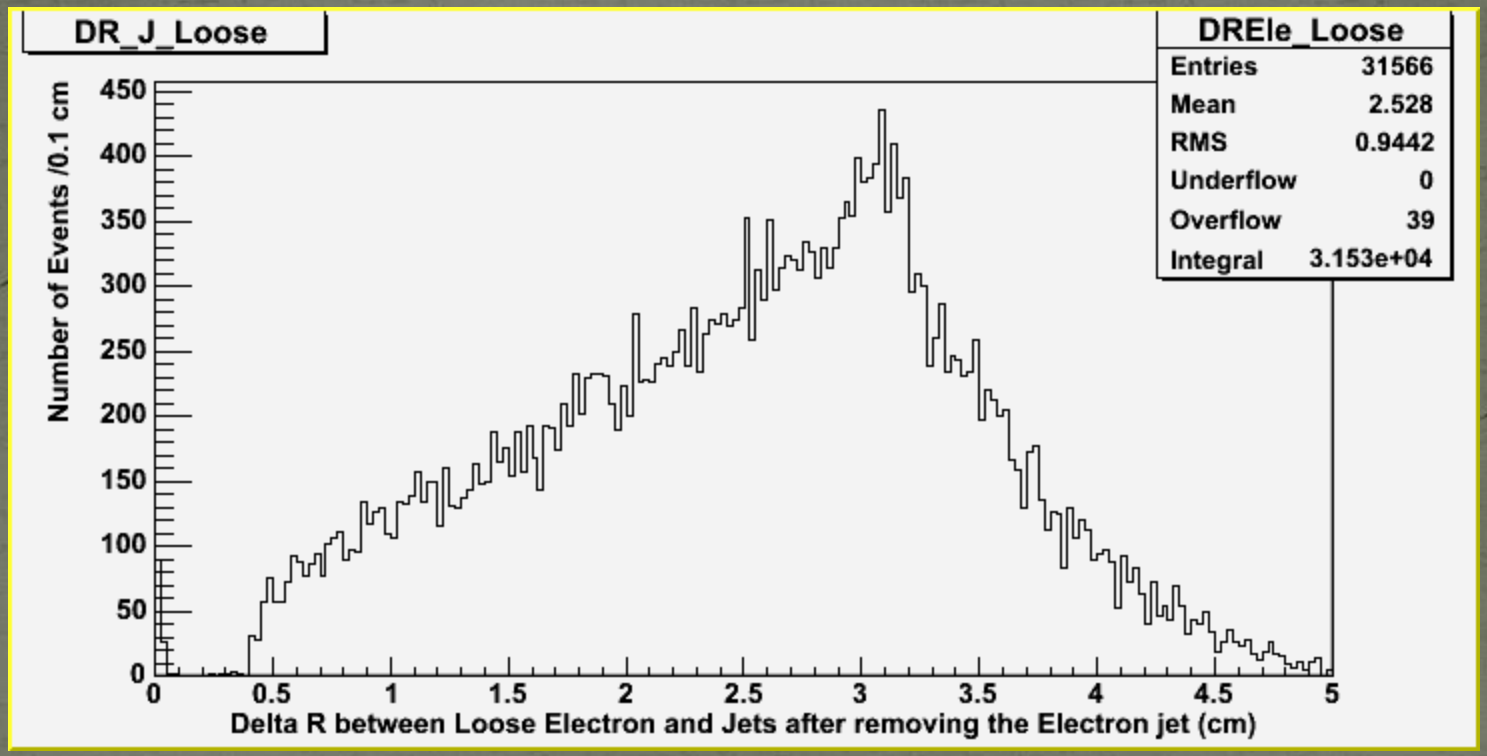
- Loop Over all the Tracks found inside Cone R =0.4 of the Jet
- Classify into three types of Tracks based of the Algorithm Used on these Tracks

"Electron Jet Removal"

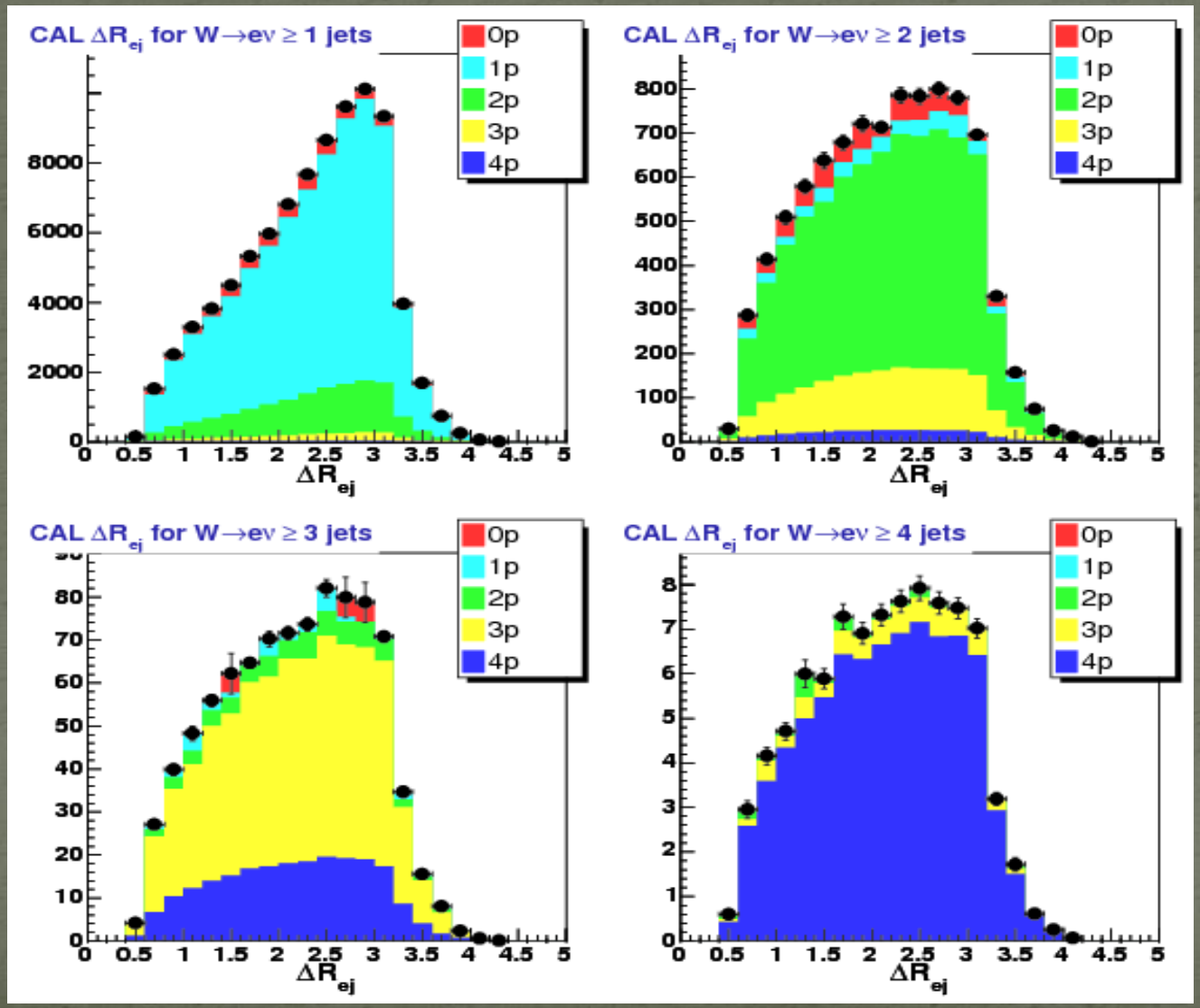
- Question to Ponder !!

1. Types of “electron” that need to be considered for “Electron Jet “ Removal
   i.e Plug, Loose,Non-Isolated Electron etc
2. Actual Process of removing “Electron Jet”
3. Loop over All the Jets and calculter DeltaR between Each Type of electron and Jets
4. ONLY the Highest Et Jet with DeltaR <0.4 is Removed

Delta R Between Elctron and Jet after "electron-Jet " removal



Dale Stentz W+jets analysis



For Jets With Corrected Et > 15 Gev and |Eta|<2.0

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)
=(147008/403009) 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

Ratio of (Tight Events/W events)
=(265/711) 0.37108

(nJet>=2)/(nJet>=1) 0.328767123

For Jets With Corrected Et > 5 Gev and |Eta|<2.0

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)

(147008/403009) 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	46	0.173584906
nJet>=2	93	7	0.026415094
nJet>=3	29	2	0.00754717
nJet>=4	5	Not enough stat	#VALUE!

Ratio of (Tight Events/W events) =(265/711) 0.37108

(nJet>=2)/(nJet>=1) 0.152173913

Conclusion:

• What Types of electron Do I consider for Electron Jet Removal ?
•Also Consider If any of the Electrons come from a Z Boson

•These factors affect the Electron Jet factor