Resonance
Howard Budd, Feb 12, 2009

Resonance

• What is the goal

• $W_{\text{rec}}$ is the invariant mass of the hadronic system, however calorimetry smearing smears out $W_{\text{rec}}$ enough that it is hard to see the structure of the $\Delta^{++}$. It doesn’t mean that $W_{\text{rec}}$ can’t be used to determine the cross section of the $W$. But this is another method

• Calculating an invariant mass with one hadron ranging out is inefficient

• The files I use are the same as before
Free nucleon, wtrue

Upper LE, lower ME
Free nucleon, W reconstructed from DIS,

- WREC, Free Nucleon, Detector Smearing

- Free nucleon, W reconstructed from DIS,
- Free nucleon, invariant Mass,
- Bd nuclei, Internuc
• Bd nuclei, Internuc
invariant Mass, Bound & Internuc

- Bd nuclei, Internuc
Inv Mass Eff, Bound & Internuc

- Top 3 tracks, Bottom adds range out hadron
- Fairly flat vs Wmass, but falls of at high mass
- Top LE, bottom ME, Stat error in this
- Resolution good enough to see $\Delta^{++}$
Discussion

- Not much difference in plots between LE and ME.
  - Hard numbers with more stat might see something
- The statistics in final my plots are small enough that it's hard to plot it vs another variable
- I can get eff and purities fairly easily
- In principle for a real analysis, one would fit for the peak and background.
- Would be good, if I could increase the stats in my final plots without completely rewriting the analysis code.