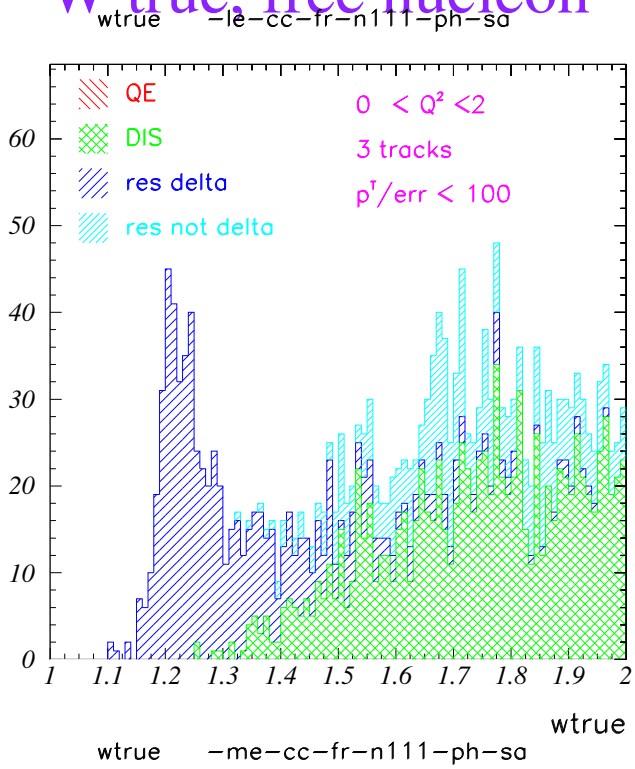
Resonance

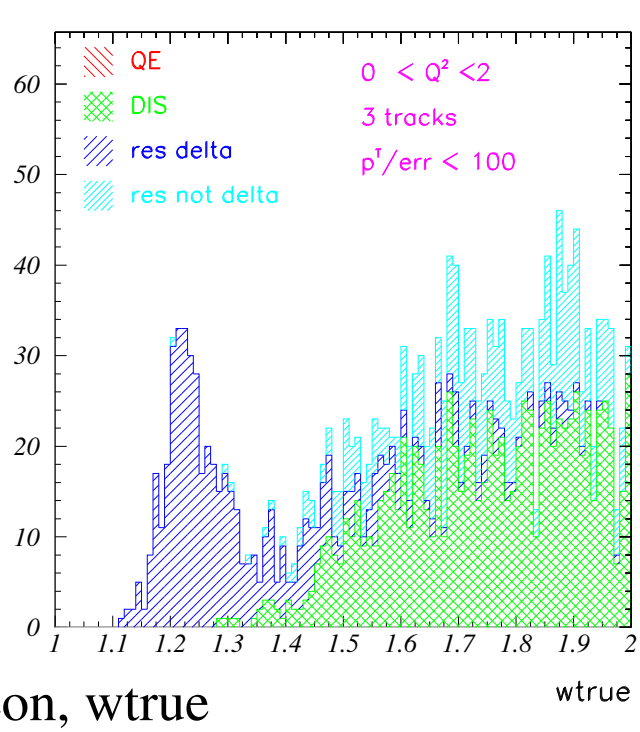
Howard Budd, Feb 12, 2009

Resonance

- What is the goal
- Wrec is the invariant mass of the hadronic system, However calorimetery smearing smears out wrec enough that it is hard to see the structure of the Δ^{++}. It doesn't mean that wrec 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

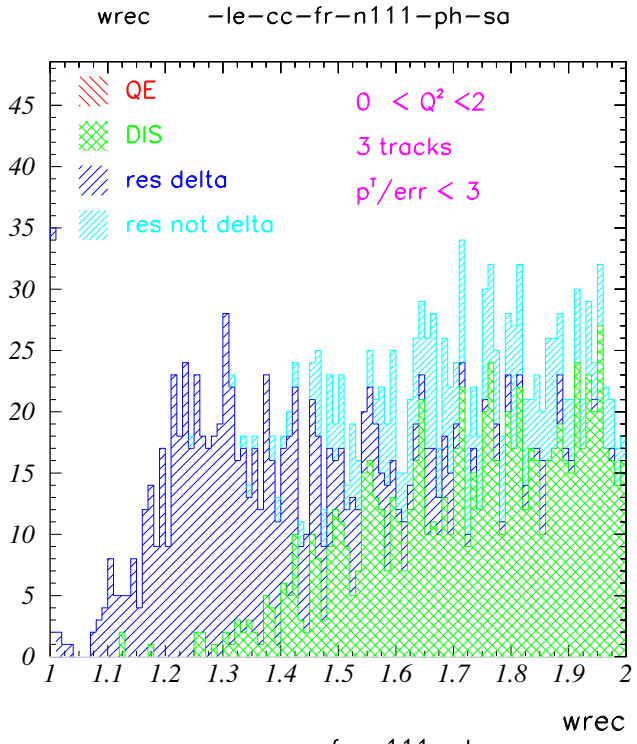
W true, free nucleon

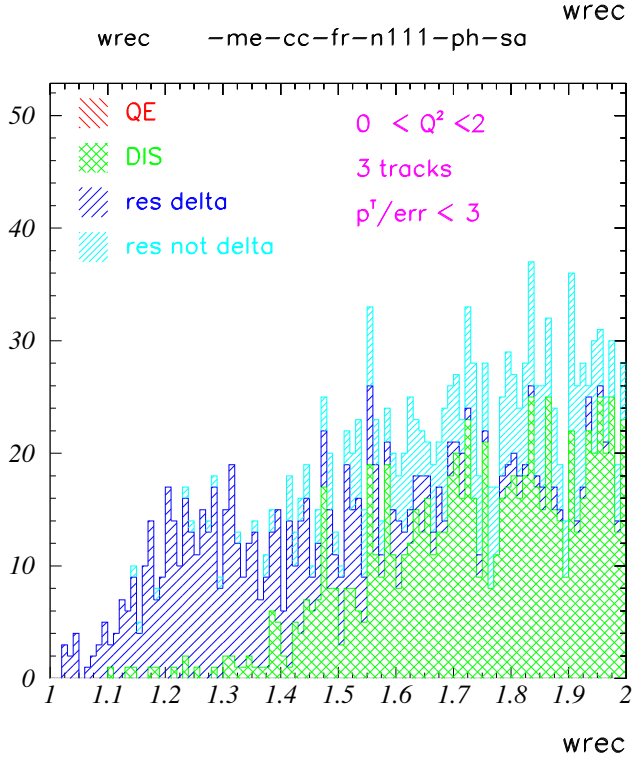




- Free nucleon, wtrue
- Upper LE, lower ME

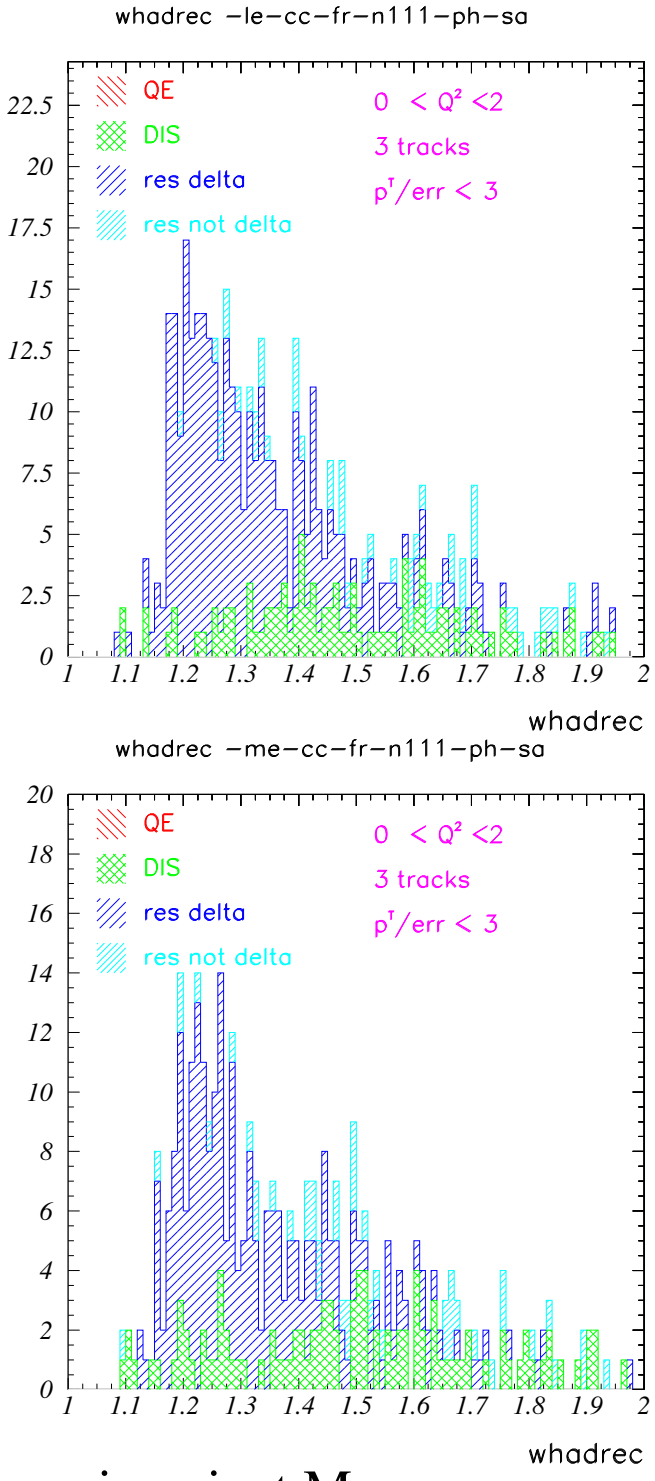
WREC, Free Nucleon, Detector Smearing





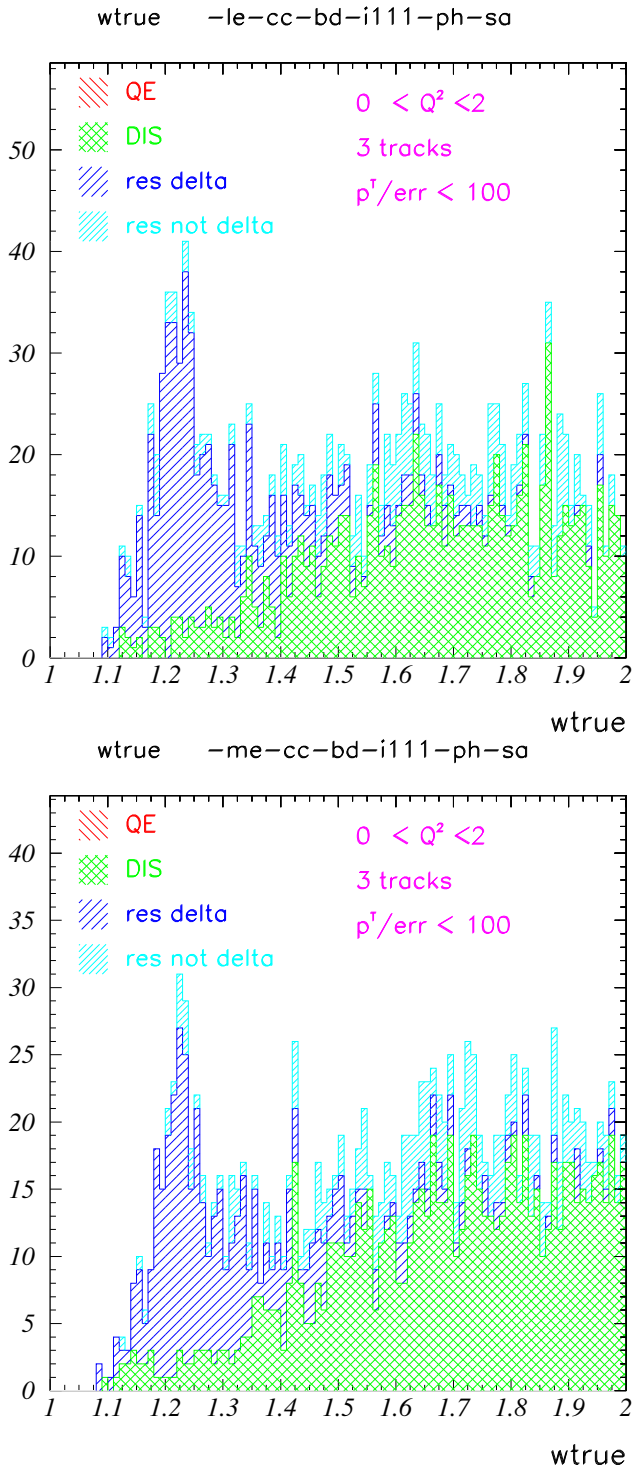
- Free nucleon, W reconstructed From DIS,

invariant Mass, free nuc, Det Smearing



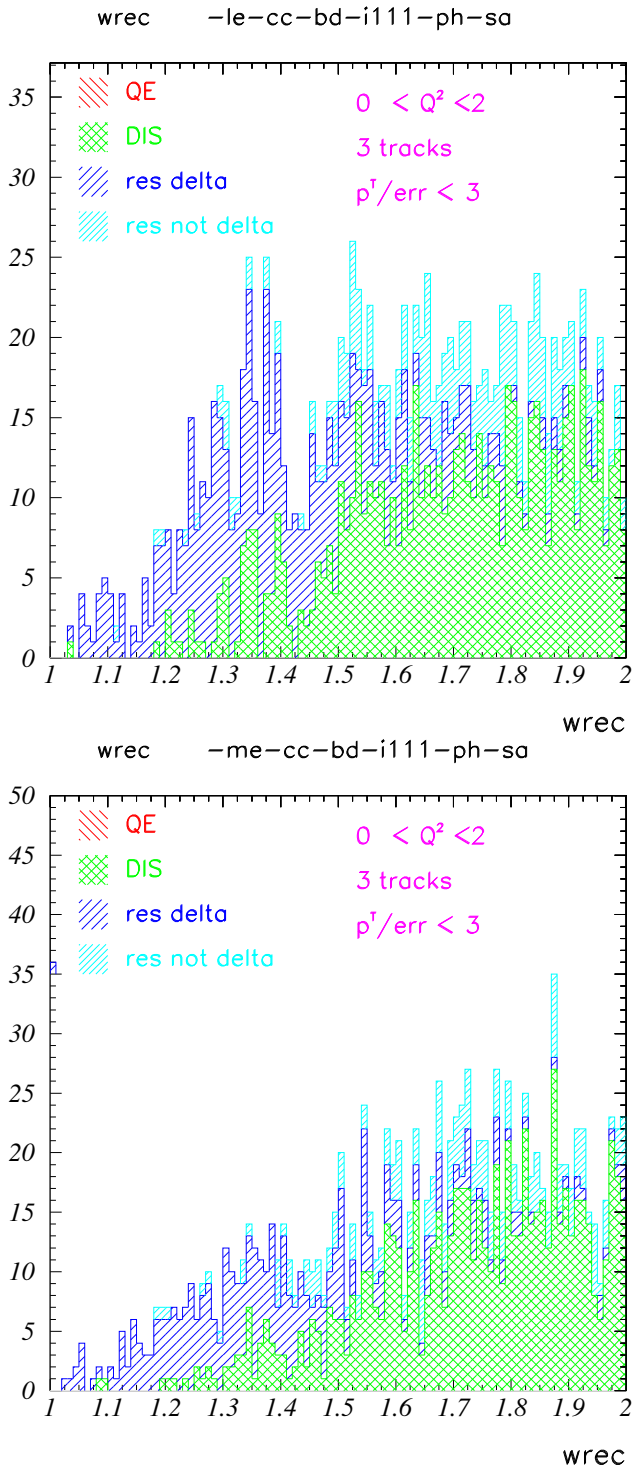
- Free nucleon, invariant Mass,

W true, Bound & Internuc



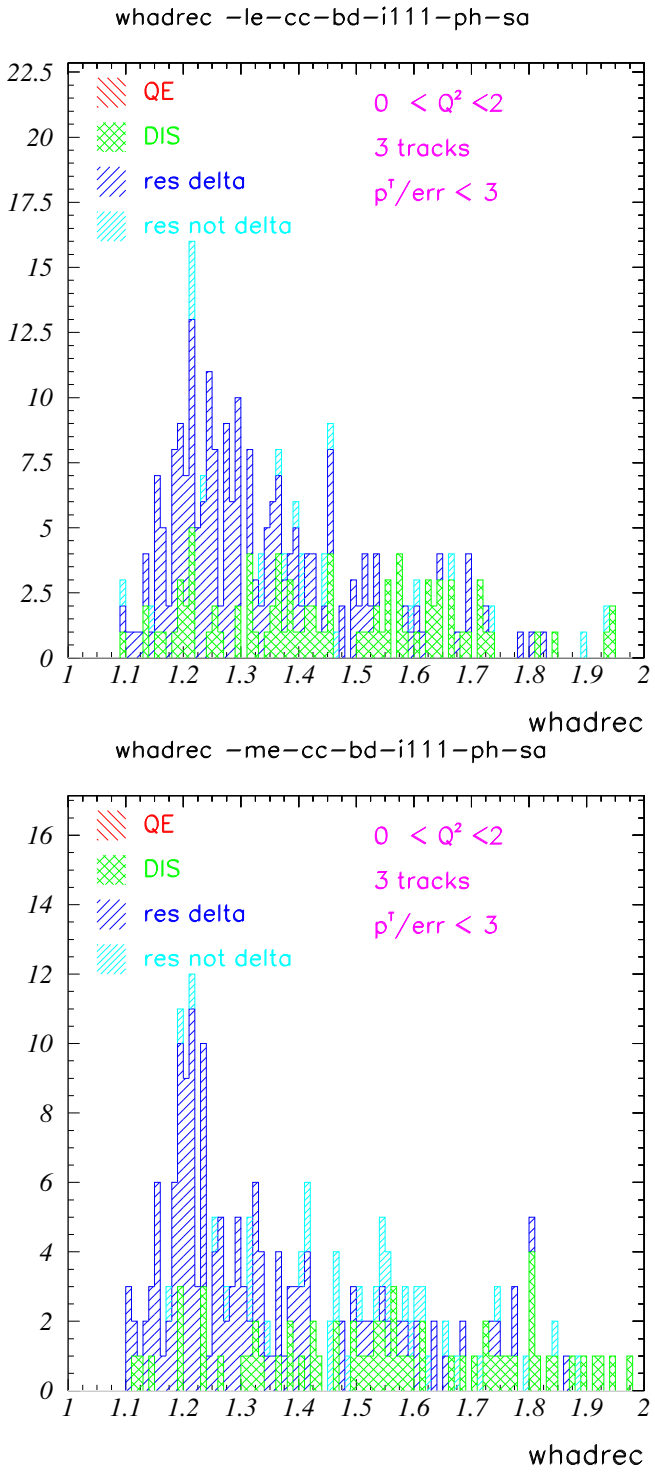
- Bd nuclei, Internuc

WREC, Bound & Internuc



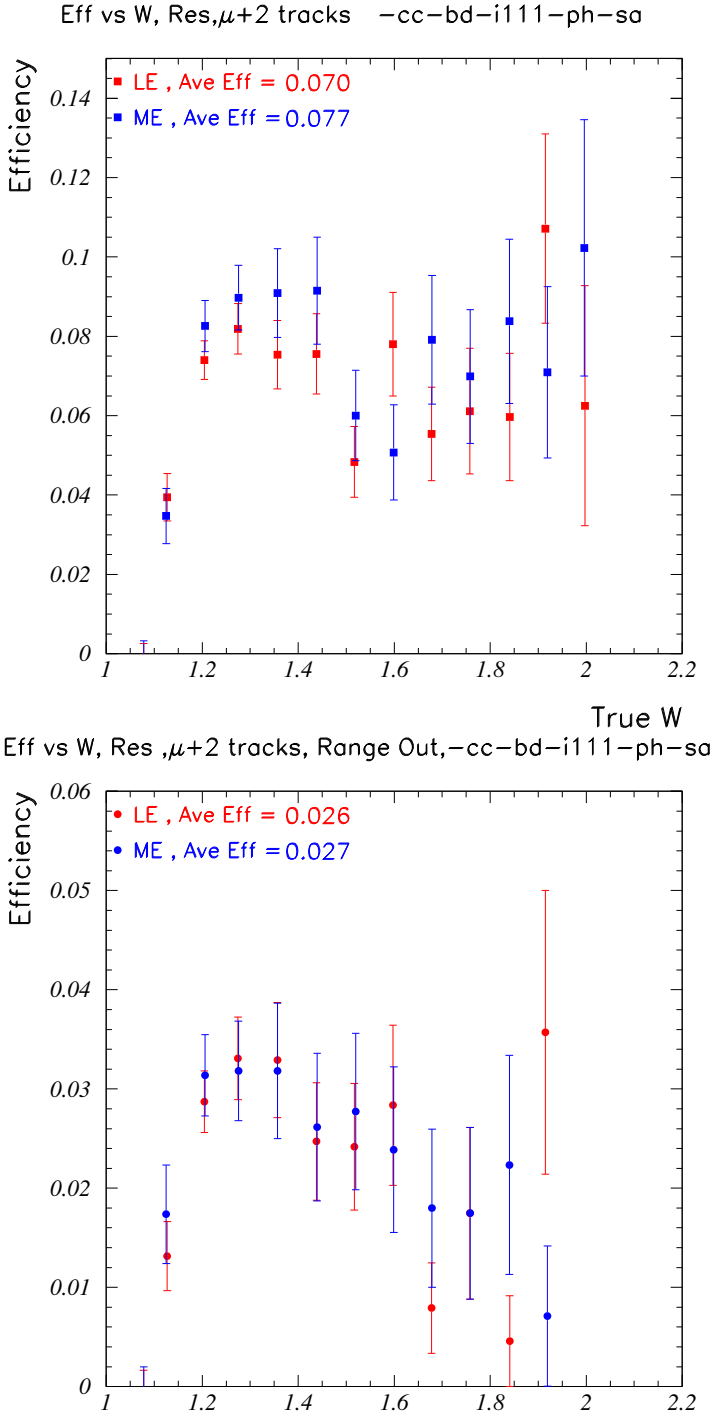
- Bd nuclei, Internuc

invariant Mass, Bound & Internuc



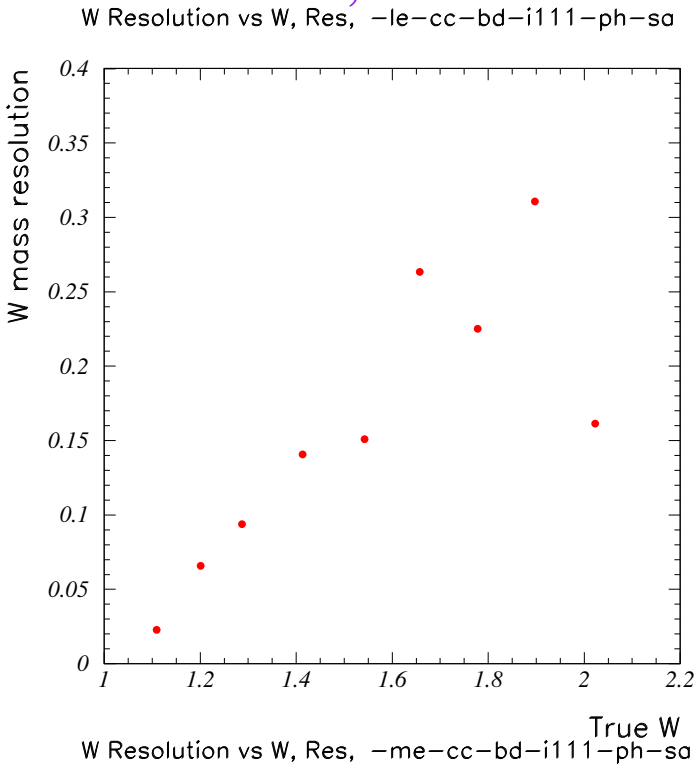
- Bd nuclei, Internuc

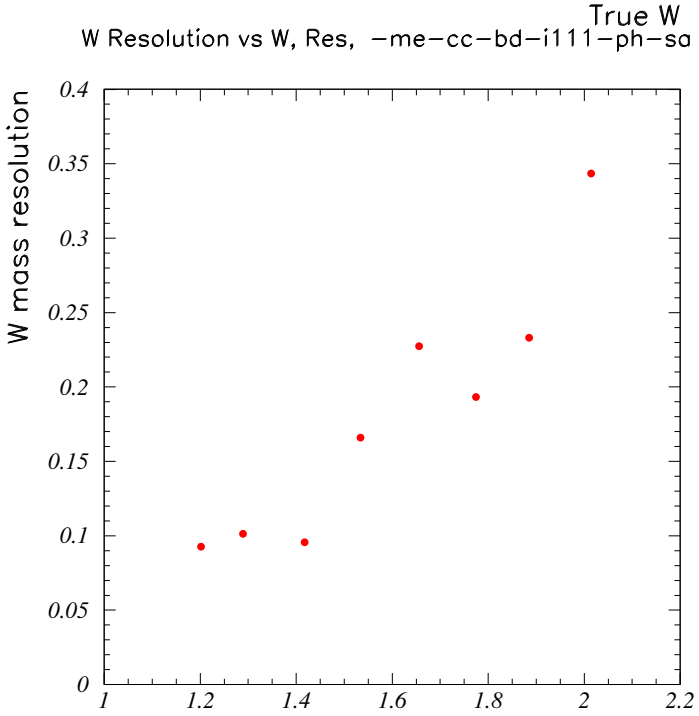
Inv Mass Eff, Bound & Internuc



- Top 3 tracks, Bottom adds range out hadron
- Fairly flat vs Wmass, but falls of at high mass

Invar Mass Resol, Bound & Internuc





- Top LE, bottom ME, Stat error in this
- Resolution good enough to see Δ^{++}

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 its 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.