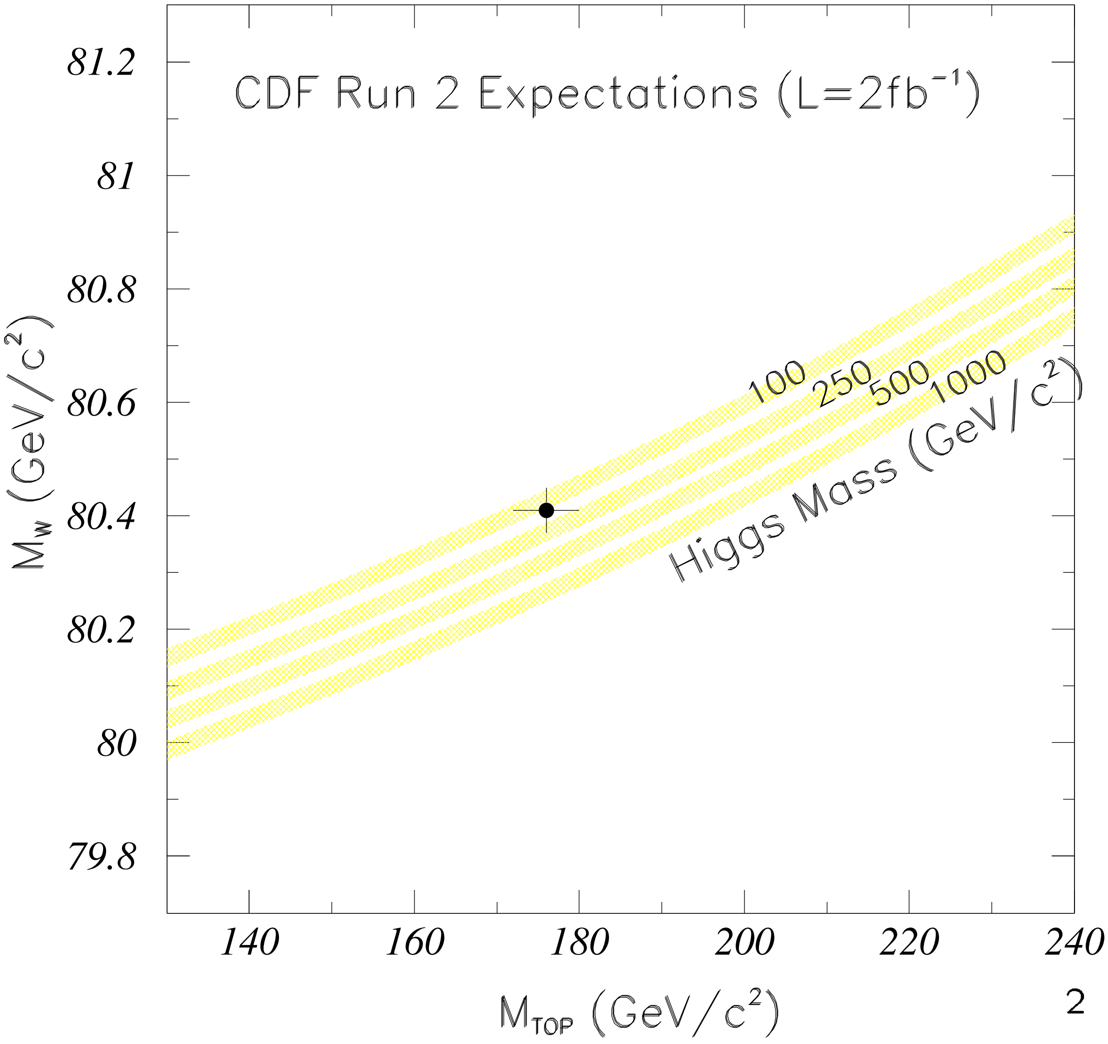
Prediction for M_W vs M_{top}

Can use all LEP data and low-energy data

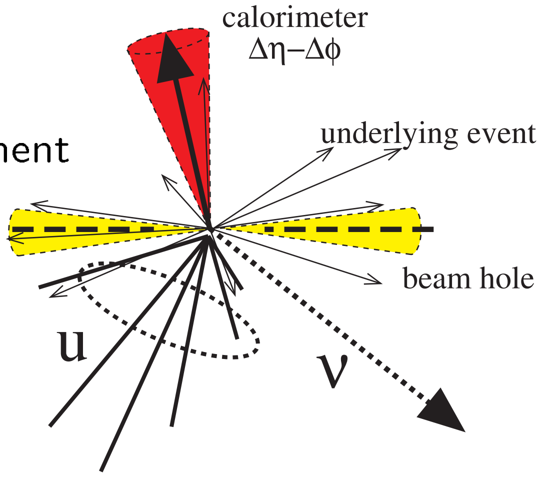
- Have to assume M_{Higgs}
- Clearly sensitive test!
  - point represents CDF accuracy after Run II



Effect of Underlying Event

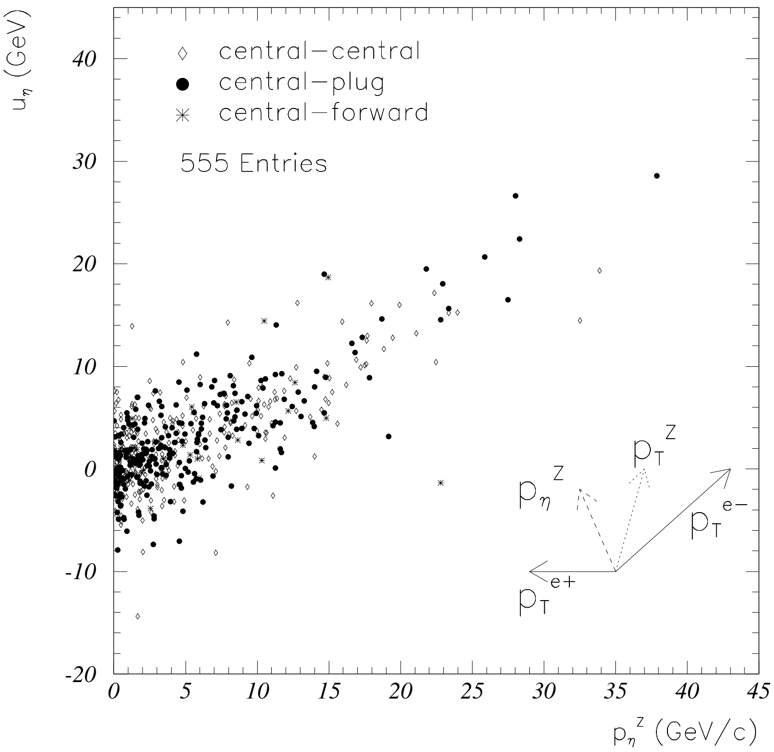
Have to understand effect of underlying event on M_T

- Enters in two ways:
  1. Modifies $\vec{u}$ (and therefore $\not{E}_T$)
  2. Modifies electron energy measurement



Can study $\vec{u}$ effects by looking at Z events

- Z momentum well measured by dilepton final state
- Can determine calorimeter response to given recoil



How Well Can We Do?

The statistical errors will decrease $\times 2$

- Already have $\times 5$ more data
- Will come done to $\lesssim$ 100 MeV/channel

Systematic uncertainties are the challenge

- Experience has shown them to also scale with sample size
  - All determined by other data
- Should hope to get to $\lesssim$ 50 MeV/c^2