First Look at Effect of Decays on PFA

Ray Frey
University of Oregon

- Fast (Root-based) simulation
  - Cal clusters placed at center of hit cluster
  - Resolution smearing of momentum and cluster energy
  - Perfect pattern recognition and tracking efficiency
- $e^+e^- \rightarrow qq \rightarrow 2$ jets at $2E_{\text{beam}} = 200$ GeV
  - Arbitrary
  - Look at $E_{\text{jet}}$ and $M(2\text{-jet})$ distributions
Perfect $K_s^0$ efficiency

EM: $\sigma_E/E = 0.12/\sqrt{E} \pm 0.01$

HAD: $\sigma_E/E = 0.50/\sqrt{E} \pm 0.02$

$\sigma_{MJJ}/M_{JJ} = 0.20/\sqrt{M_{JJ}}$
$K_0^s$ not detected

$$\sigma_{M_{JJ}}/M_{JJ} = 0.30/\sqrt{M_{JJ}}$$
$K^0_s$ not detected in tracker, but detected in cal. as $h^0$

$$\frac{\sigma_{MJJ}}{M_{JJ}} = 0.24/\sqrt{M_{JJ}}$$