

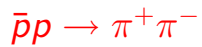
Central Tracker Benchmark: $\bar{p}p \rightarrow n(\pi^+\pi^-)$ ($n=1,2$)

Elisa Fioravanti

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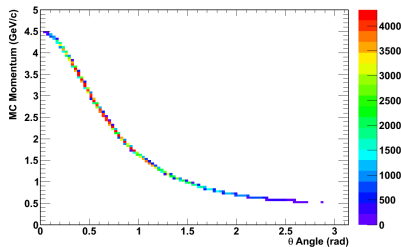
December 10, 2011



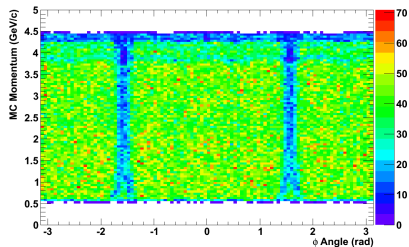


Single pion track reconstruction

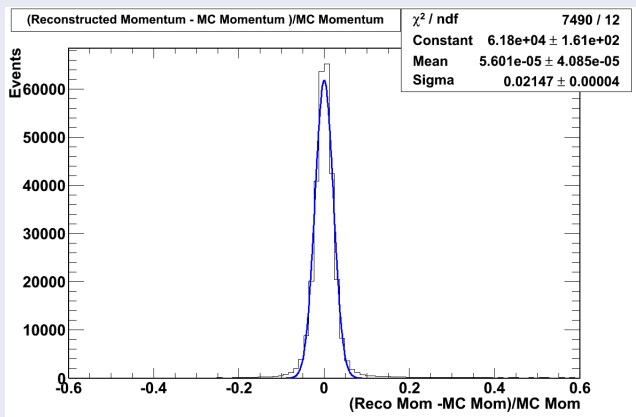
MC Momentum vs θ Angle



MC Momentum vs ϕ Angle

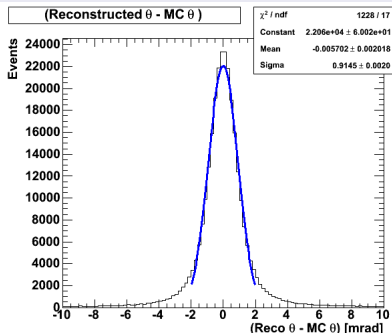
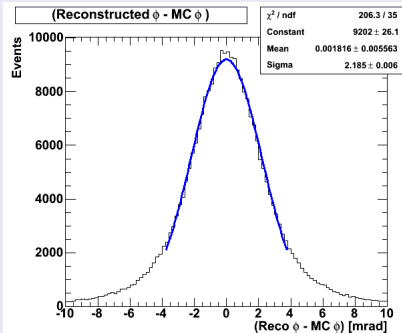


Single pion track reconstruction



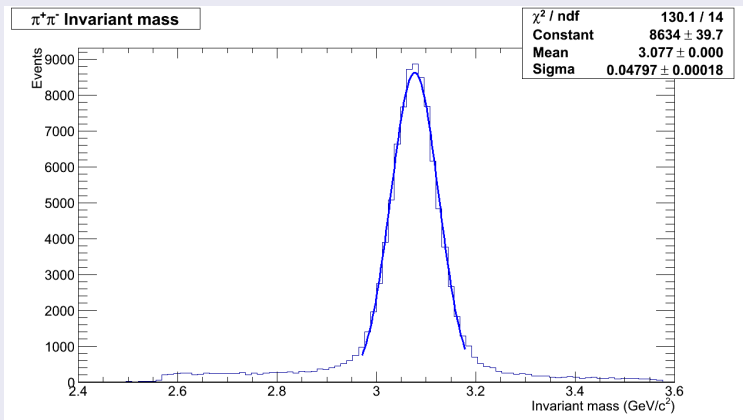
Resolution: $(2.15 \pm 0.01)\%$

θ, ϕ resolution



$$\sigma(\phi) = (2.185 \pm 0.006) \text{ mrad}$$
$$\sigma(\theta) = (0.915 \pm 0.002) \text{ mrad}$$

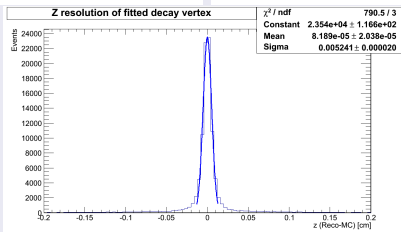
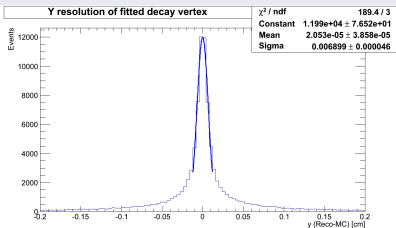
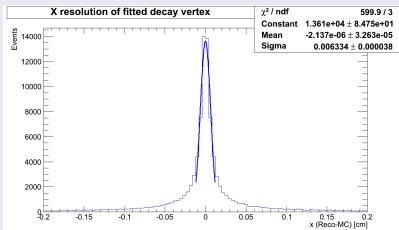
Invariant mass distribution



Resolution: $42.97 \pm 0.18 \text{ MeV}/c^2$
Efficiency (29.98 ± 0.17)%

Efficiency=Number of reconstructed events/ number of generated events.
RunMix103: Number of generated events: 343500

Vertex resolution



$\sigma_x : (63.34 \pm 0.38) \mu\text{m}; \sigma_y : (68.99 \pm 0.46) \mu\text{m}; \sigma_z : (52.41 \pm 0.20) \mu\text{m};$