



Kpi scattering study for KLF

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Outline

- **Kpi study; CG coefficient for charge and neutral pion exchange**

$$K_L \pi^+ \rightarrow K_L \pi^+ : \frac{a^2}{3} + \frac{2b^2}{3}$$

$$K_L \pi^+ \rightarrow K_S \pi^+ : \frac{a^2}{3} - \frac{b^2}{3}$$

$$K_L \pi^+ \rightarrow K^+ \pi^0 : -\frac{a^2}{3} + \frac{b^2}{3}$$

$$K_L \pi^0 \rightarrow K_L \pi^0 : \frac{a^2}{3} + \frac{2b^2}{3}$$

$$K_L \pi^0 \rightarrow K^+ \pi^- : -\frac{a^2}{3} + \frac{b^2}{3}$$

$$K_L \pi^0 \rightarrow K^- \pi^+ : -\frac{a^2}{3} + \frac{b^2}{3}$$

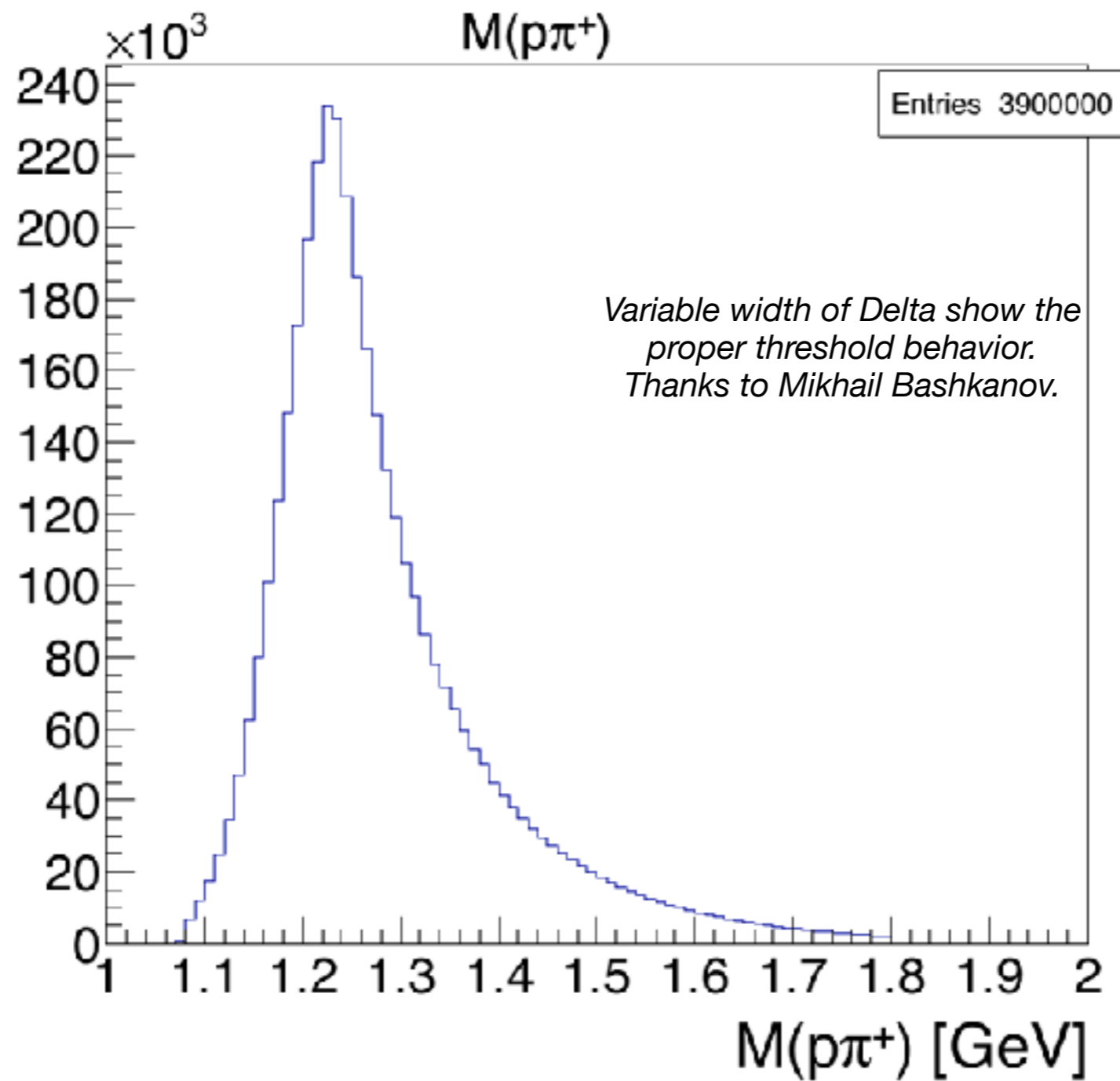
$$K_L \pi^- \rightarrow K_L \pi^- : \frac{a^2}{3} + \frac{2b^2}{3}$$

$$K_L \pi^- \rightarrow K_S \pi^- : -\frac{a^2}{3} + \frac{b^2}{3}$$

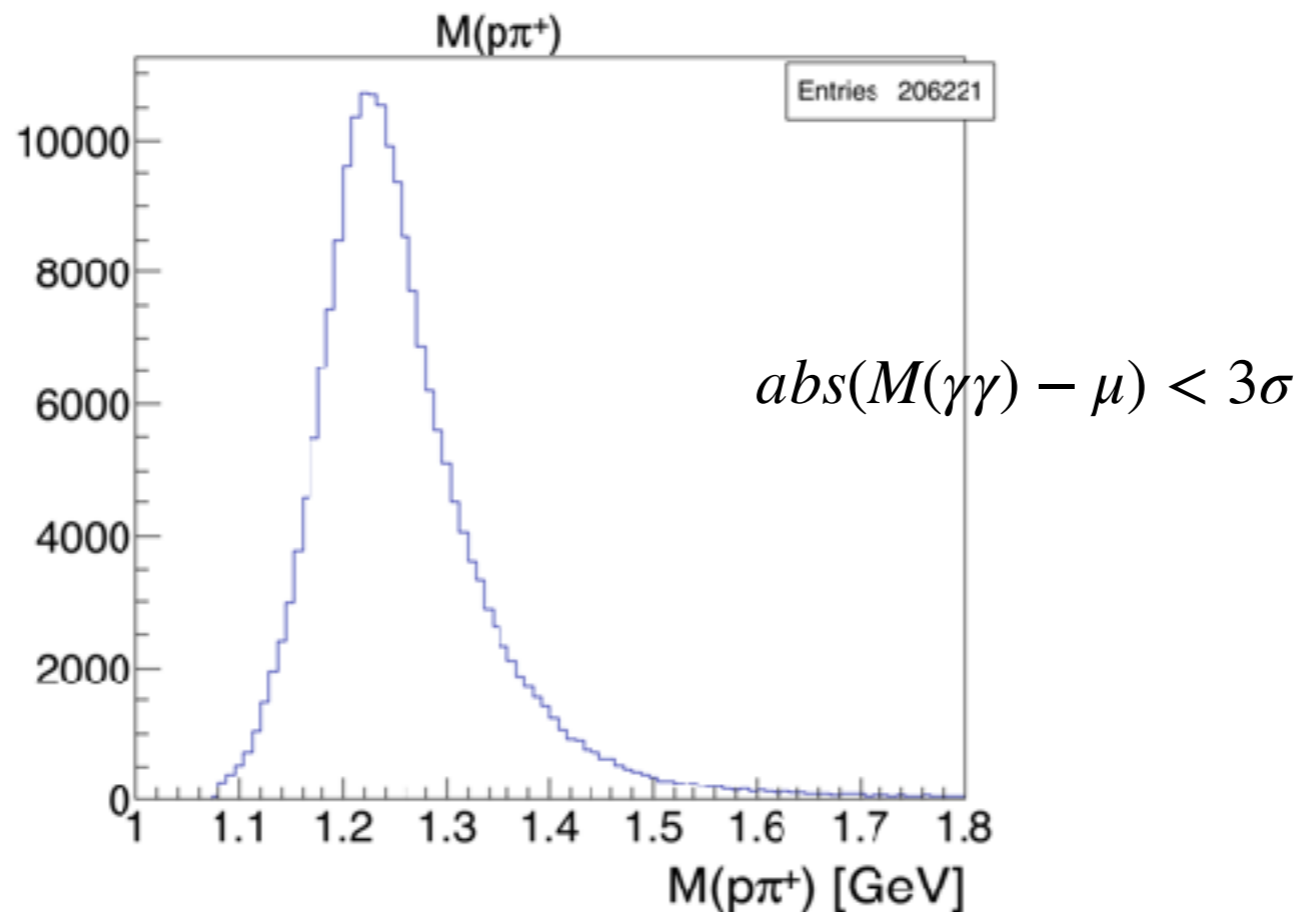
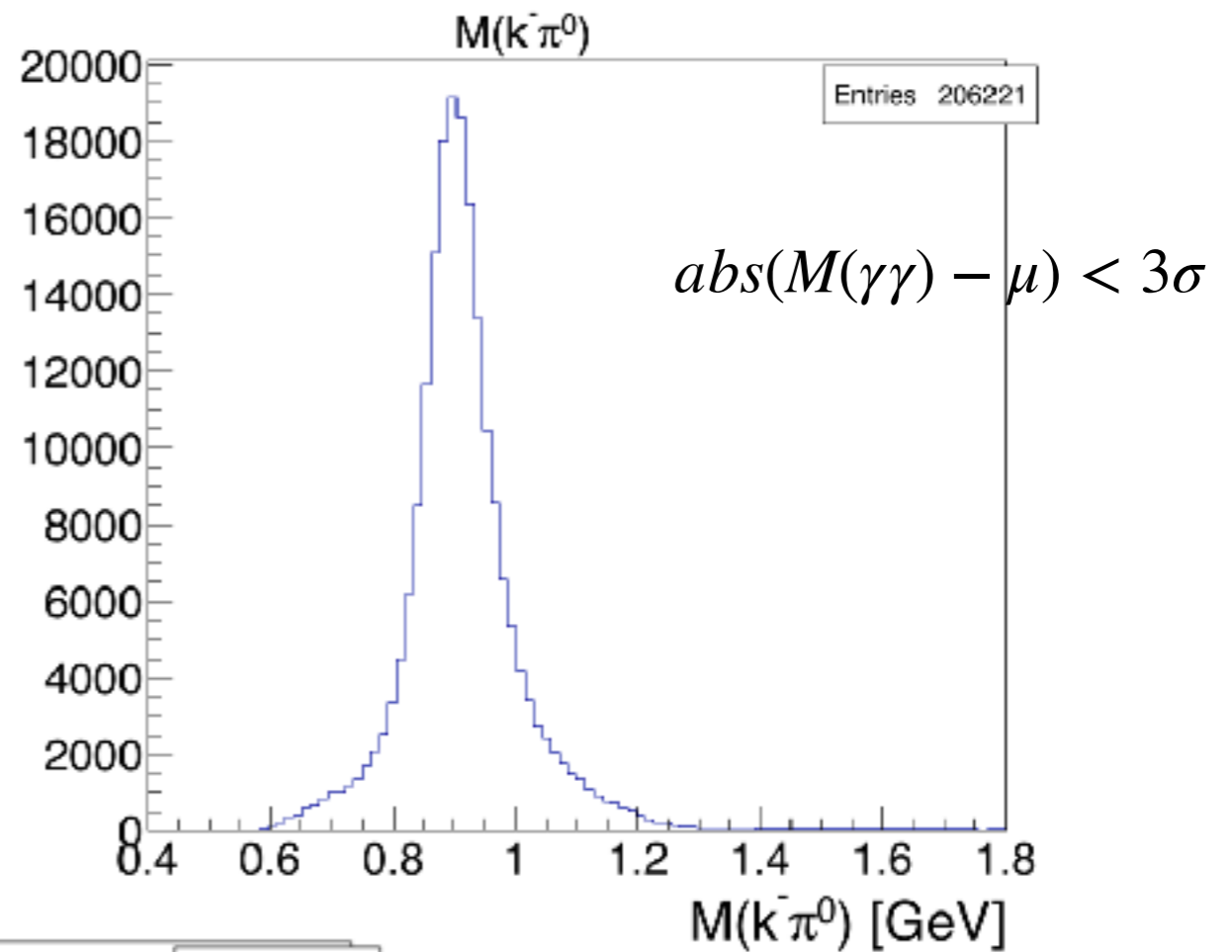
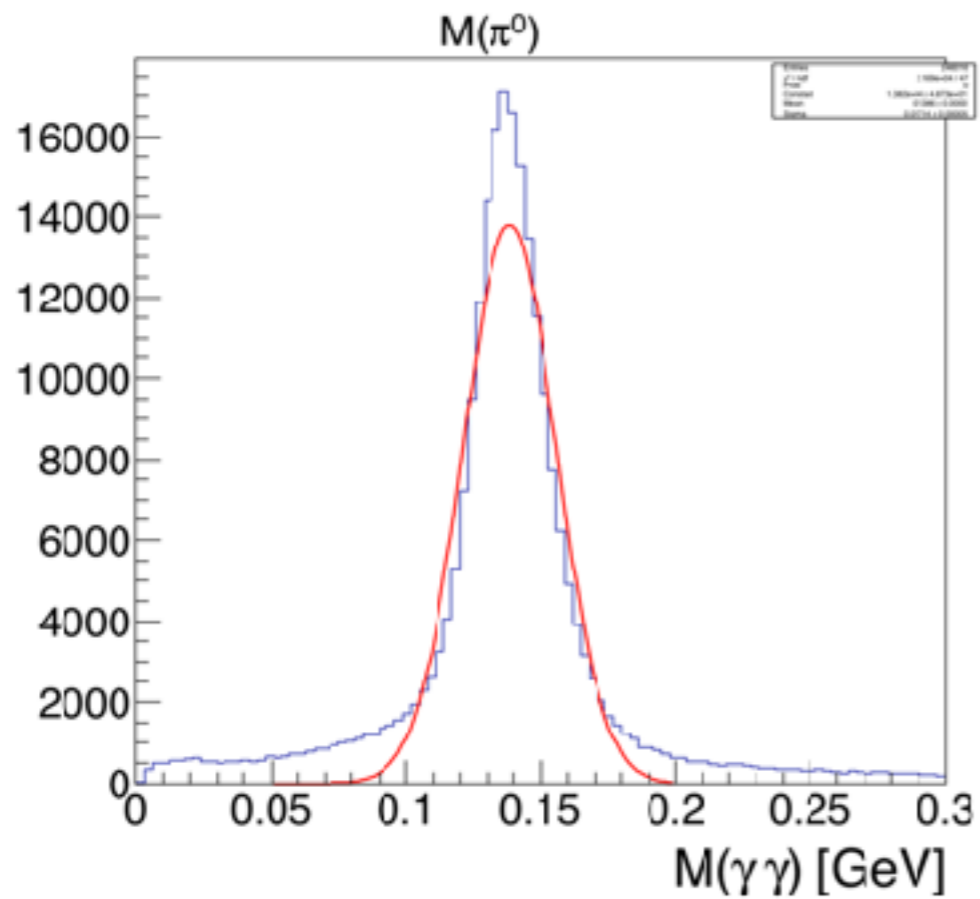
$$K_L \pi^- \rightarrow K^- \pi^0 : -\frac{a^2}{3} + \frac{b^2}{3}$$

$$K_L p \rightarrow K^- \pi^0 \Delta^{++} (p \pi^+)$$

Thrown Kinematics update

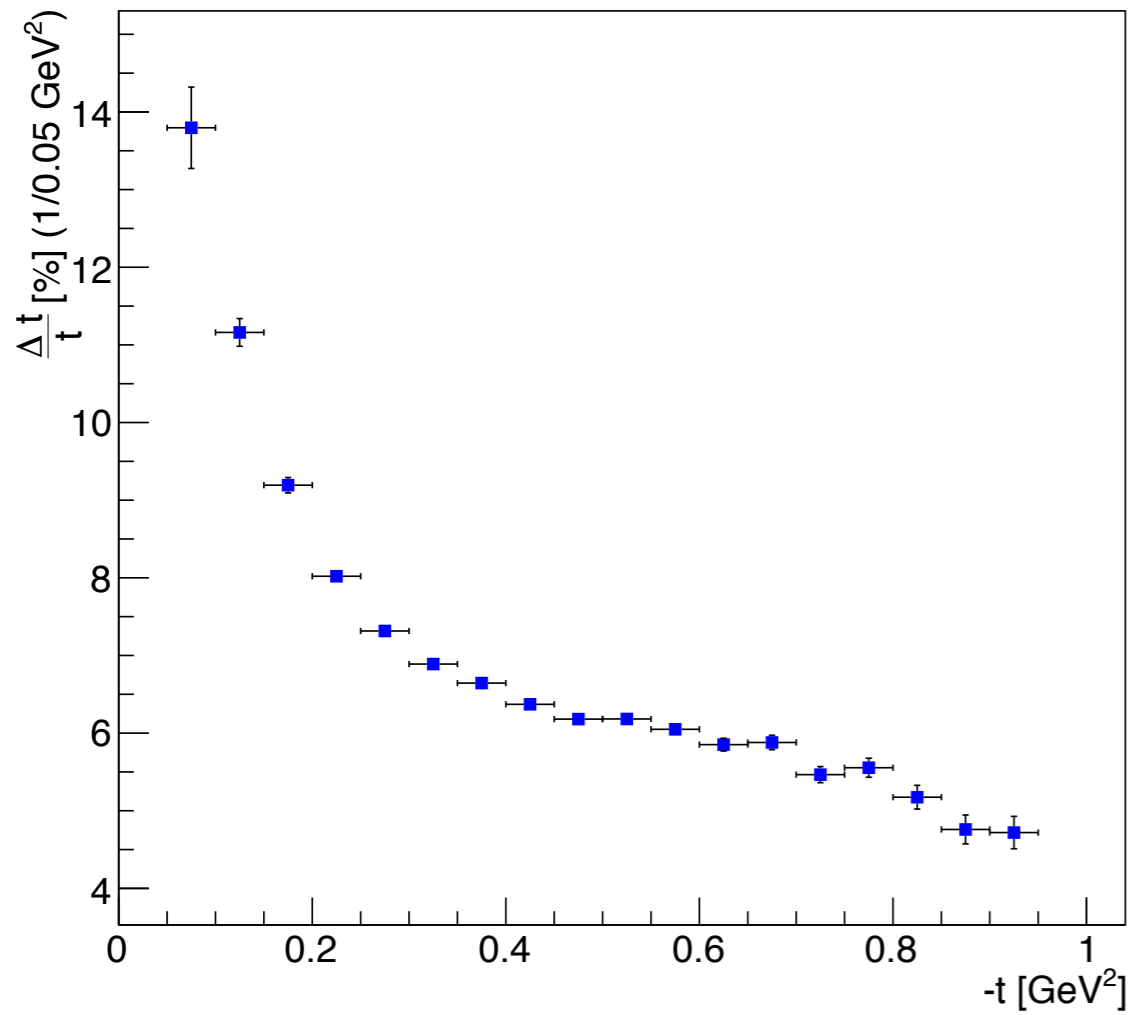


Kinematics of Reconstruction

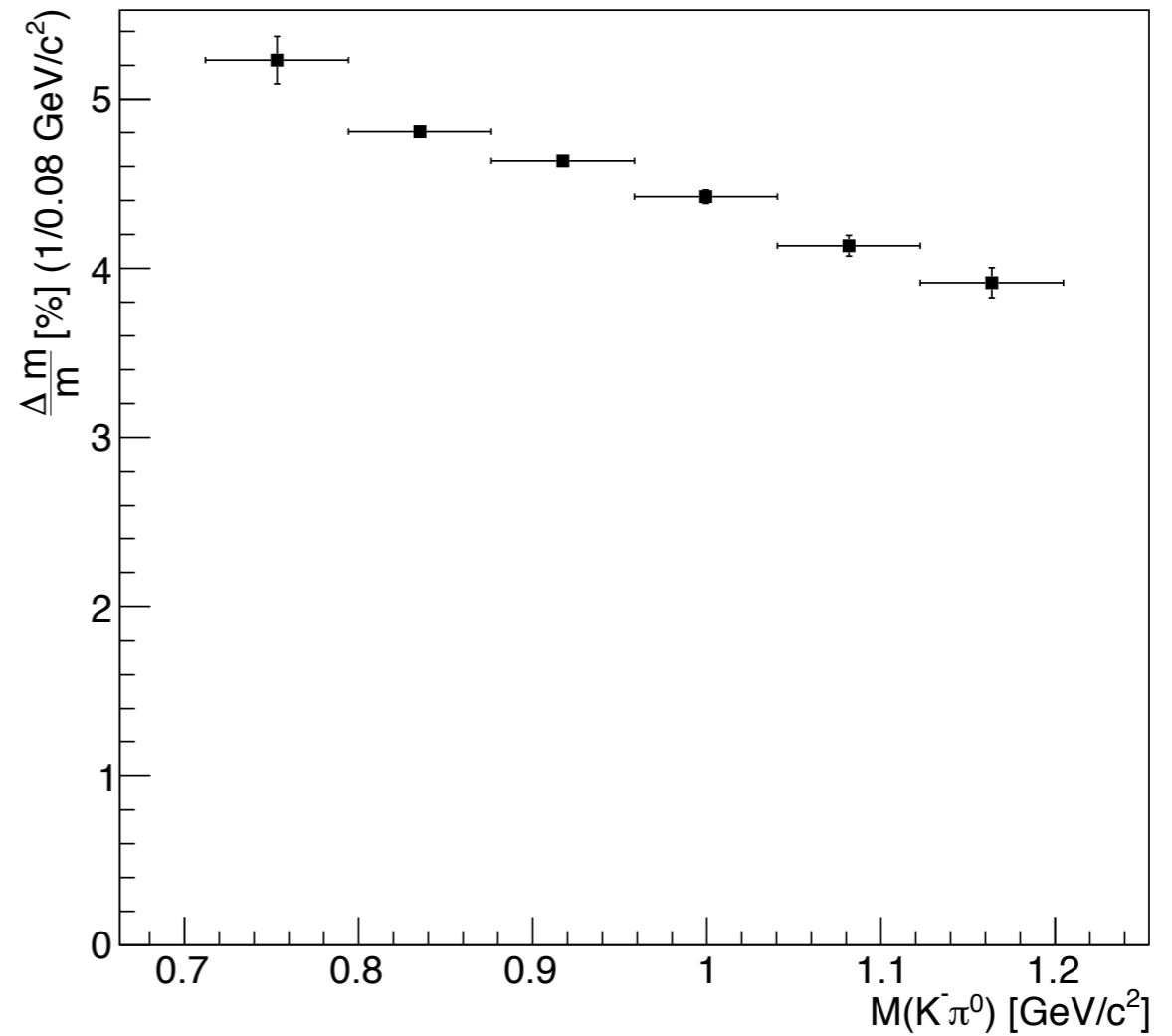


Resolution

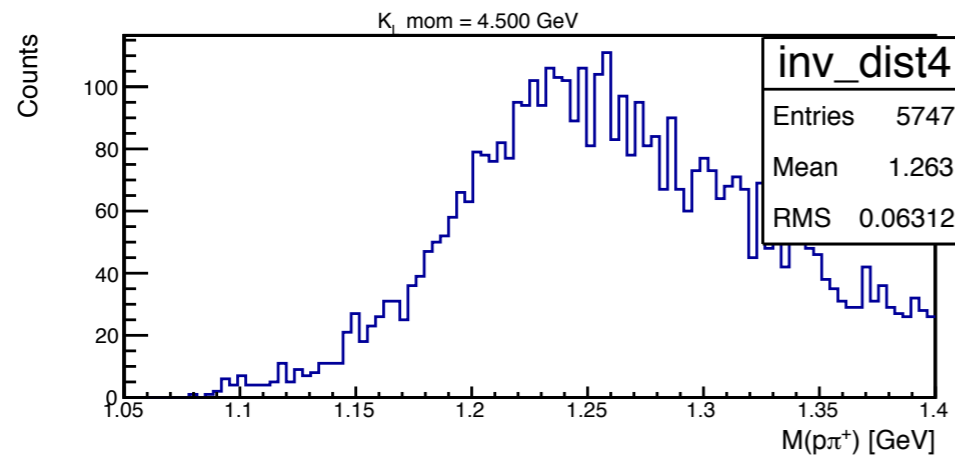
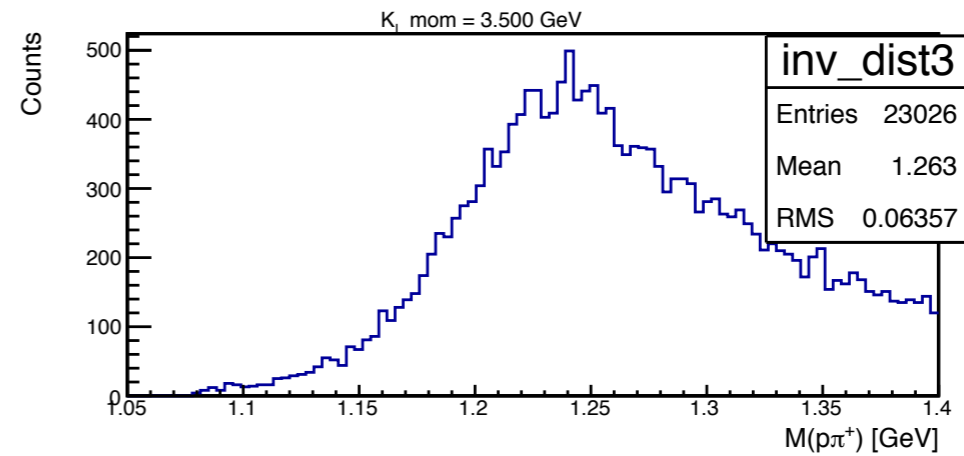
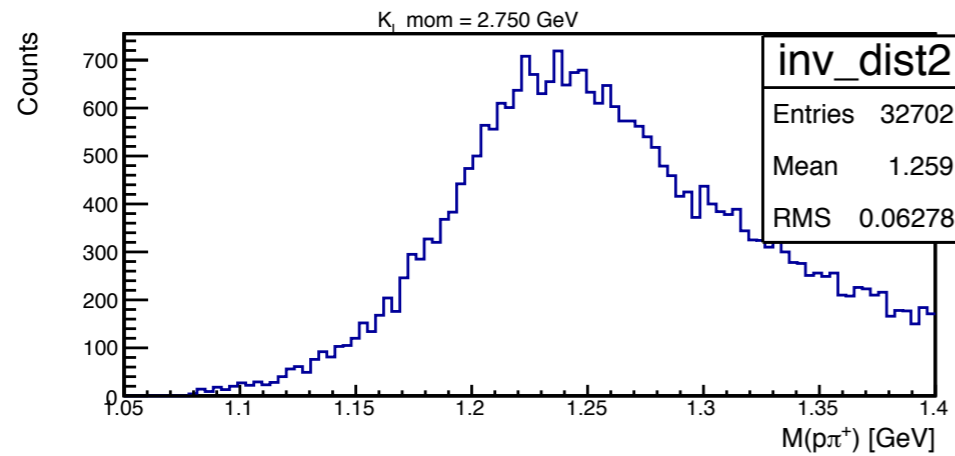
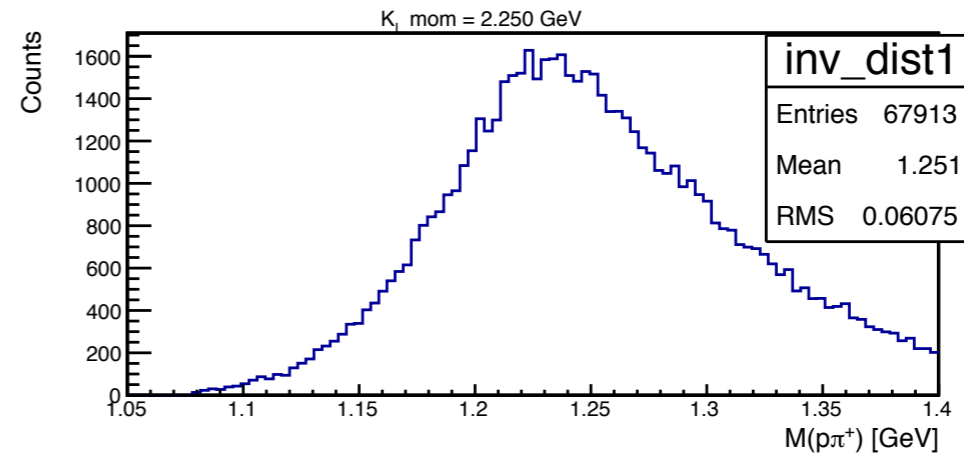
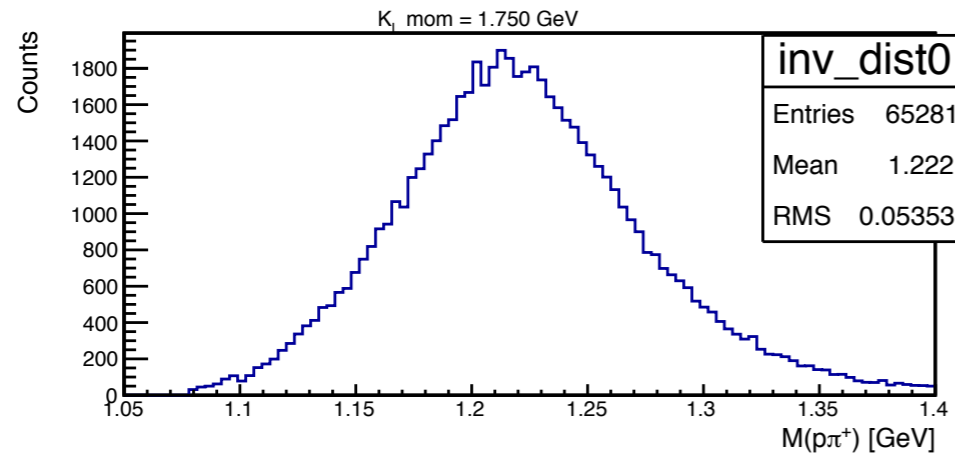
Four Momentum Resolution for $K_L p \rightarrow K^- \pi^0 \Delta^{++}$



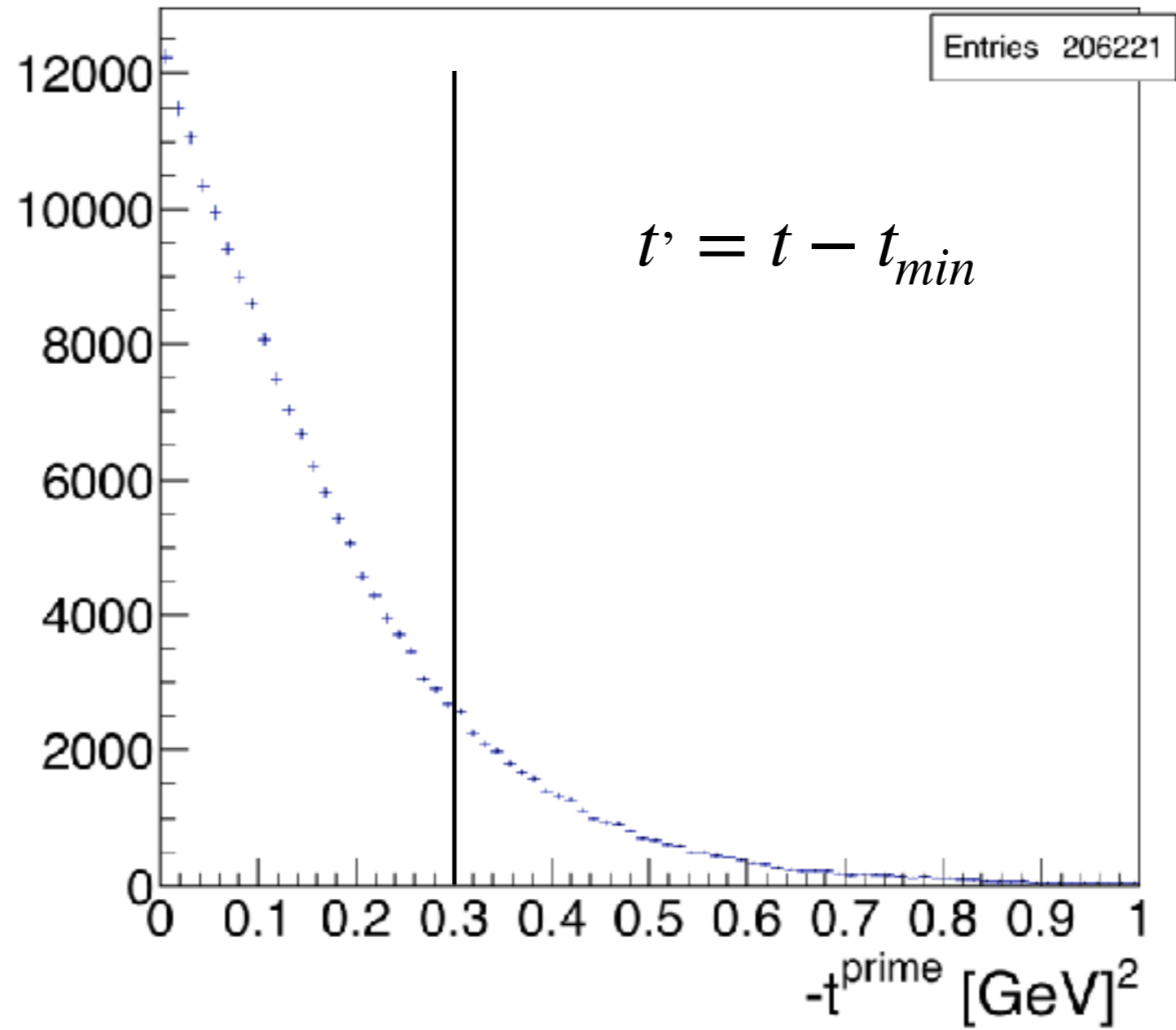
$K^- \pi^0$ Invariant Mass Resolution for $K_L p \rightarrow K^- \pi^0 \Delta^{++}$



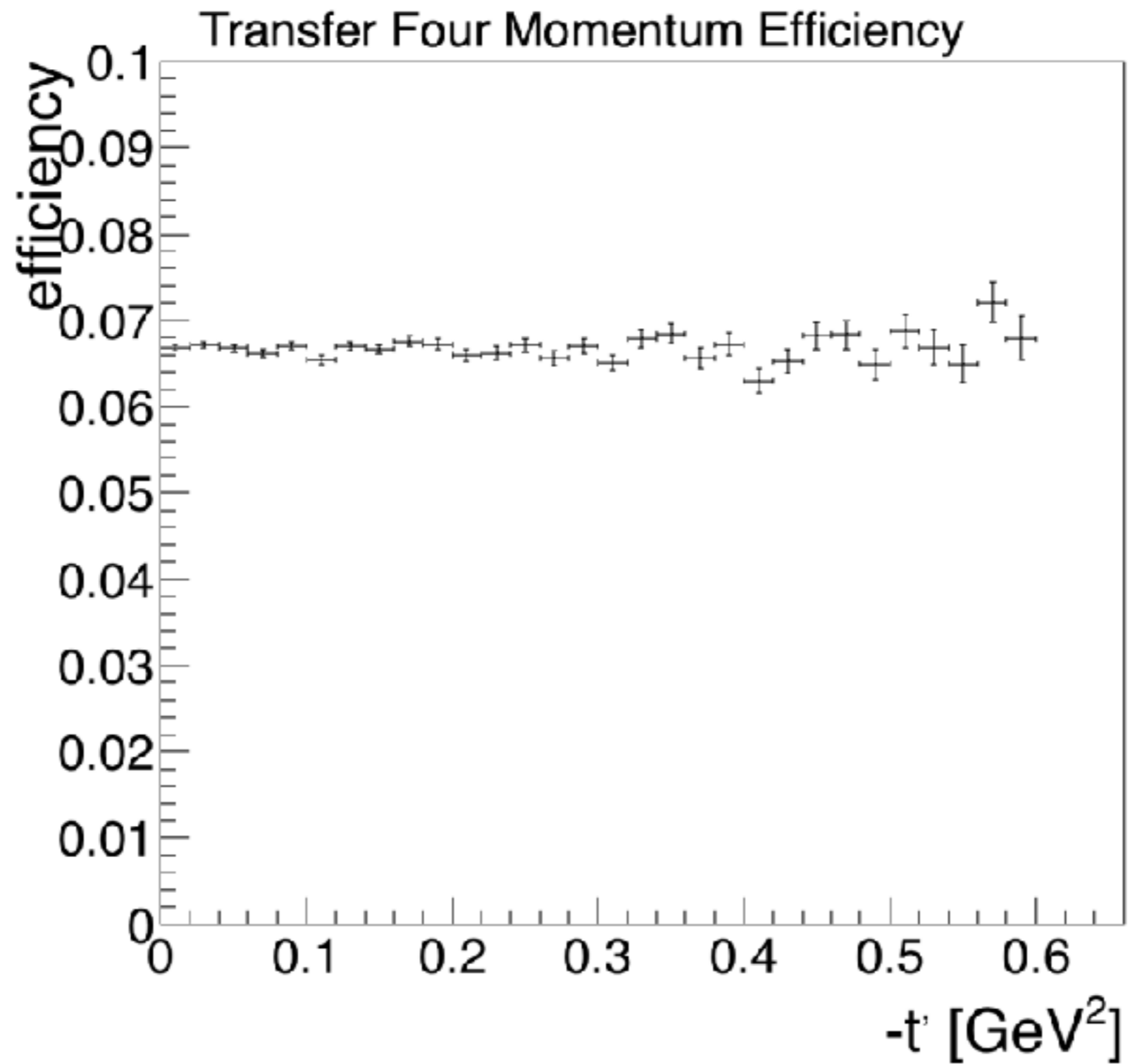
Momentum dependent Delta Mass



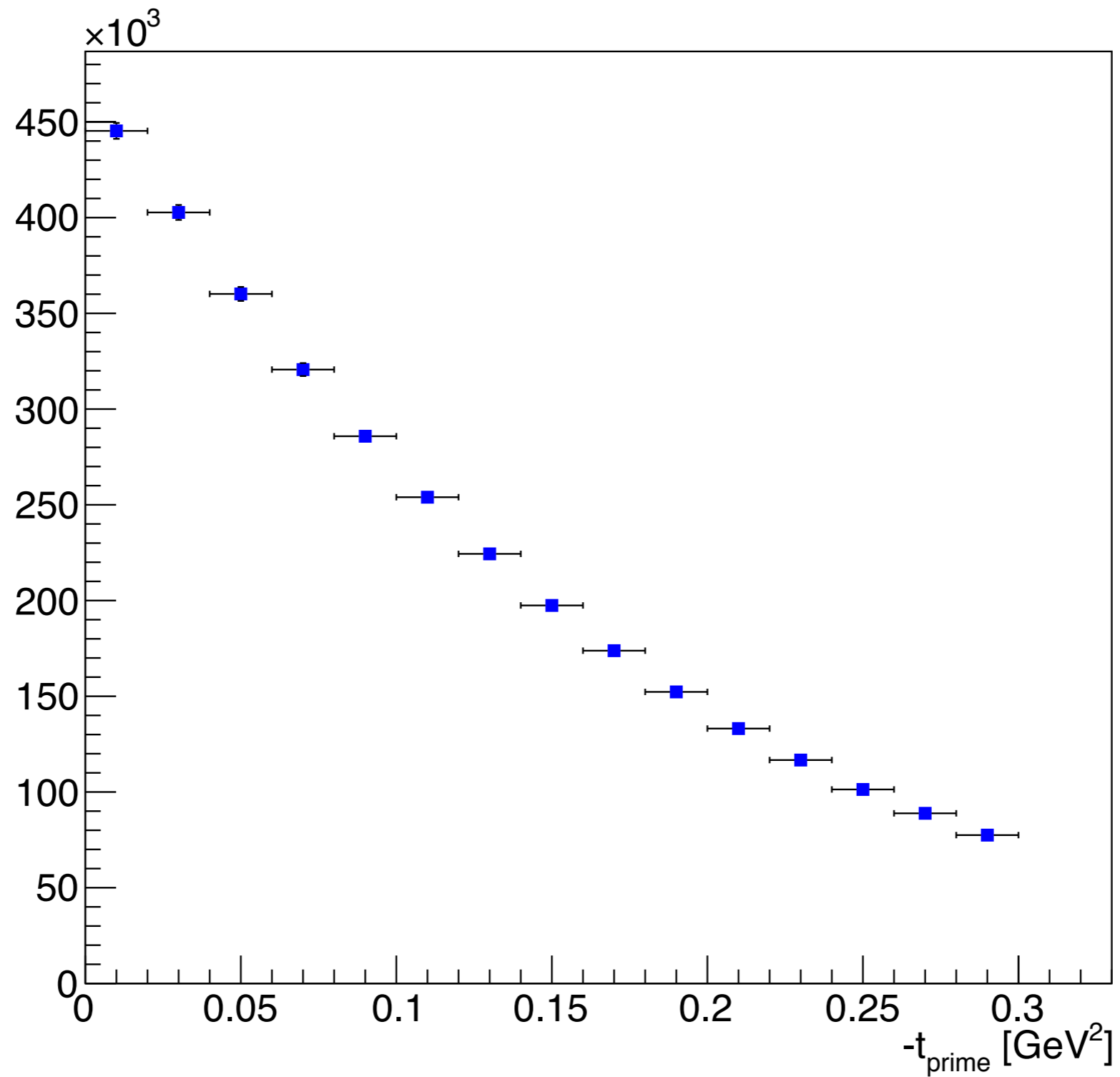
Mass Reconstruction -t'



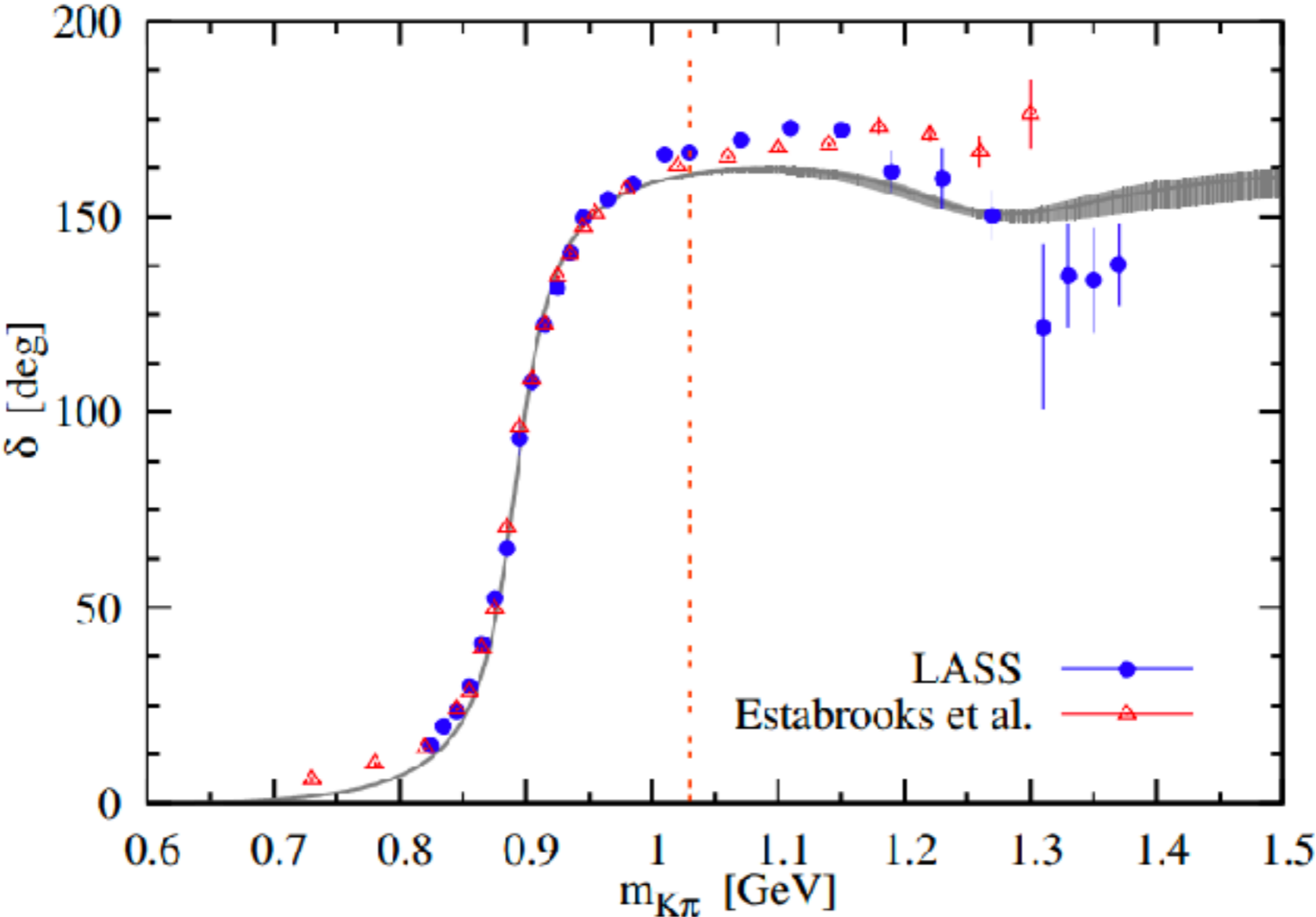
Efficiency



Acceptance Correction



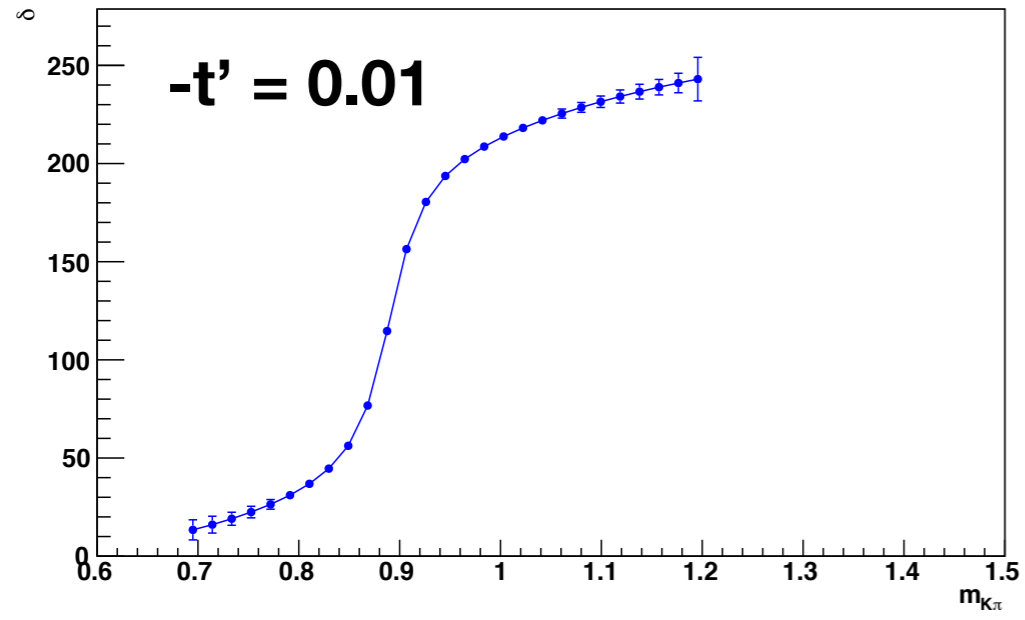
Phase shift



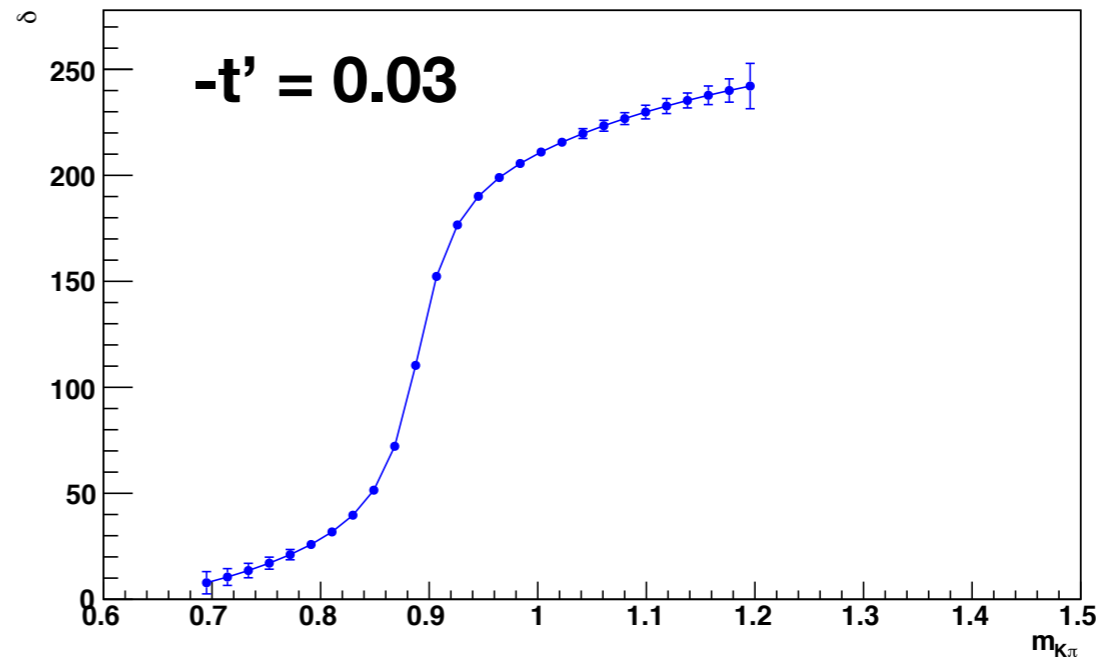
P-wave phase shift from SLAC; KLF proposal

Phase Shift

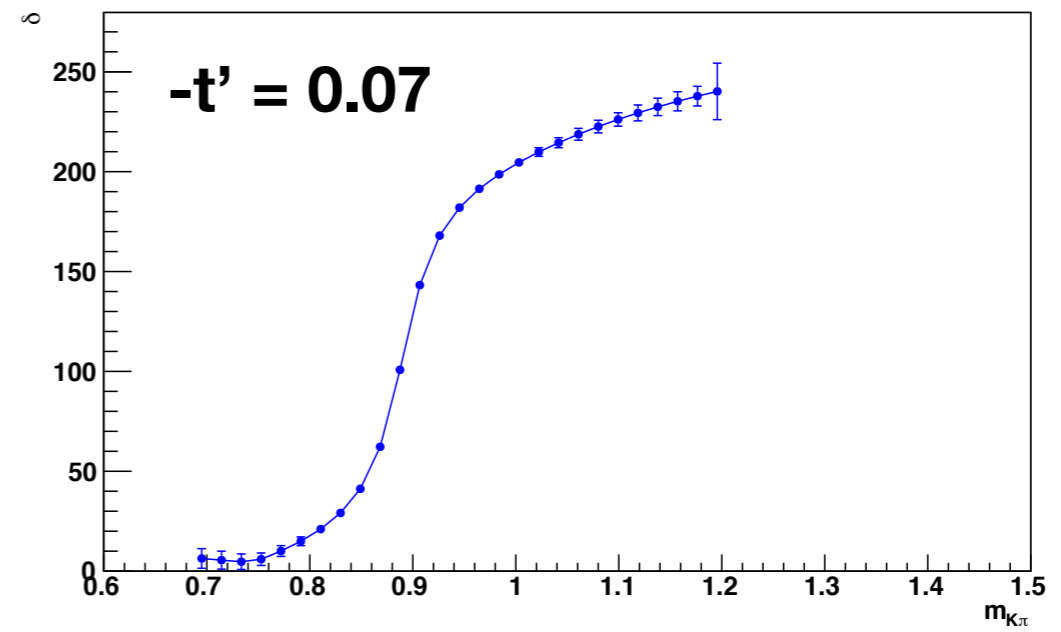
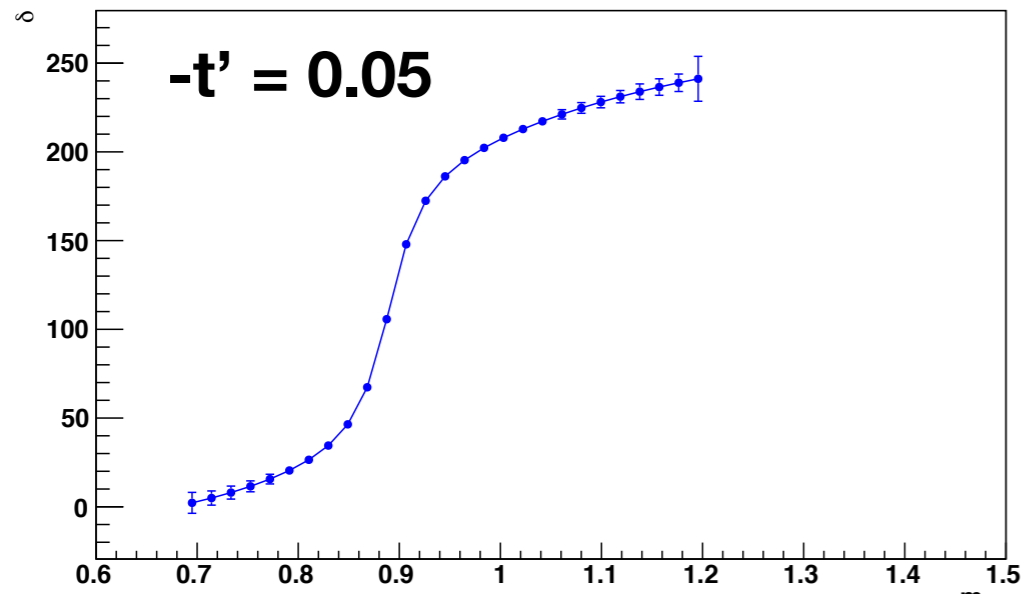
inv mass $K\pi$ VS phase shift



inv mass $K\pi$ VS phase shift

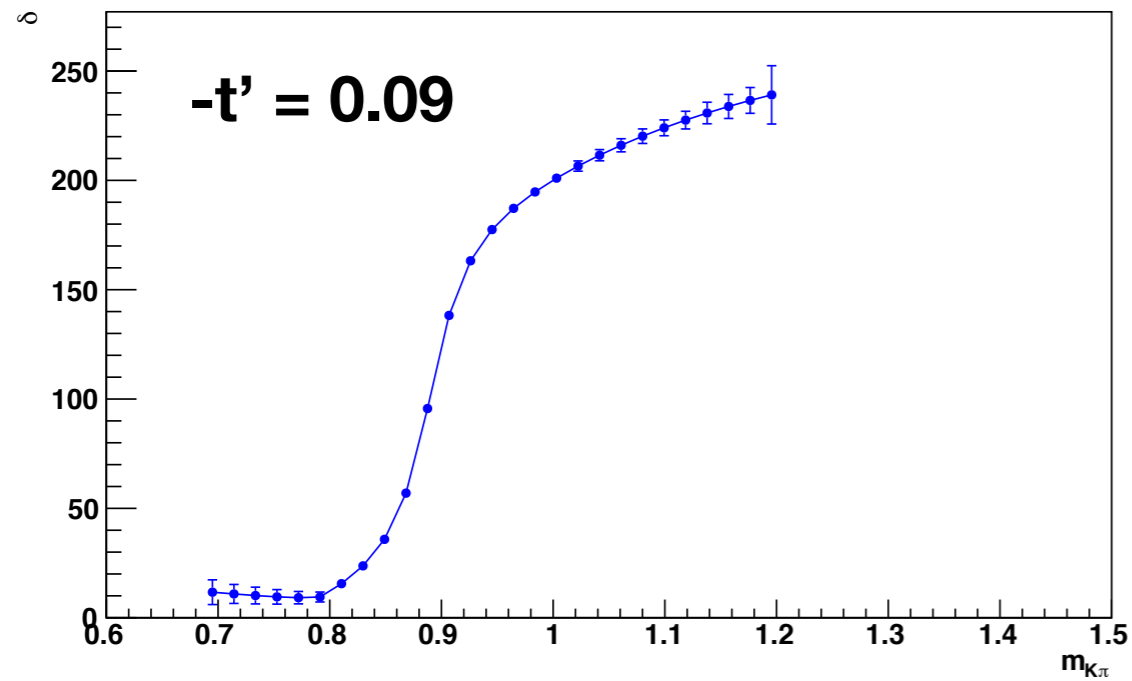


inv mass $K\pi$ VS phase shift

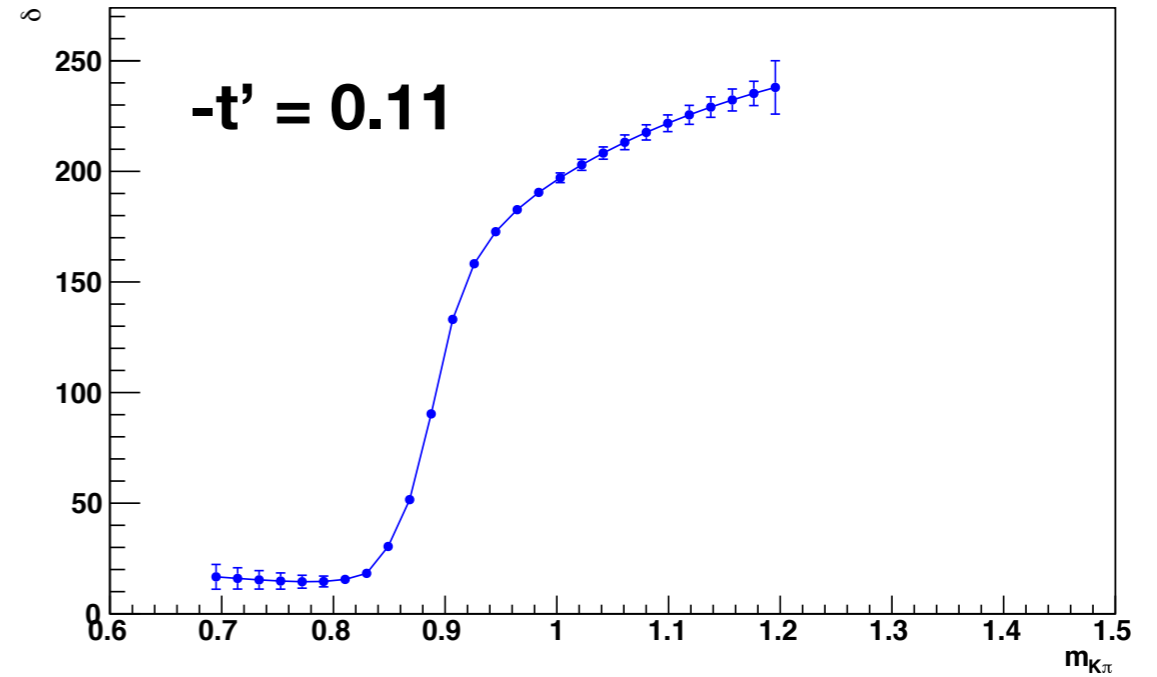


Phase Shift

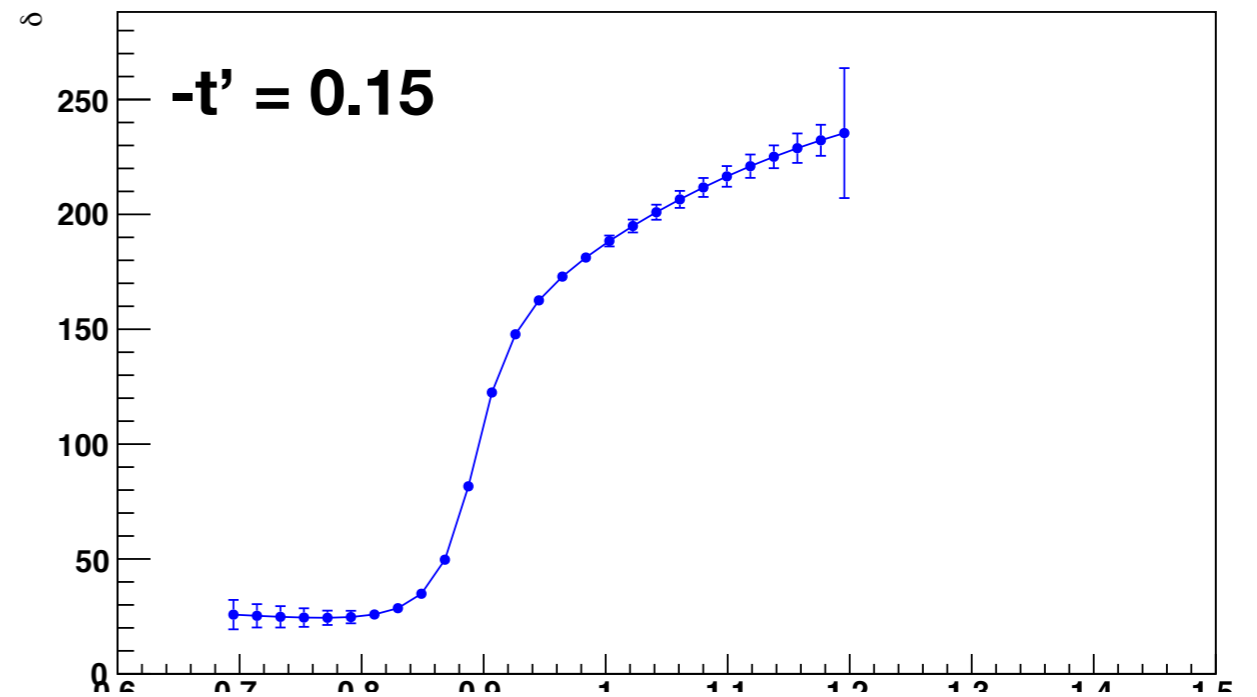
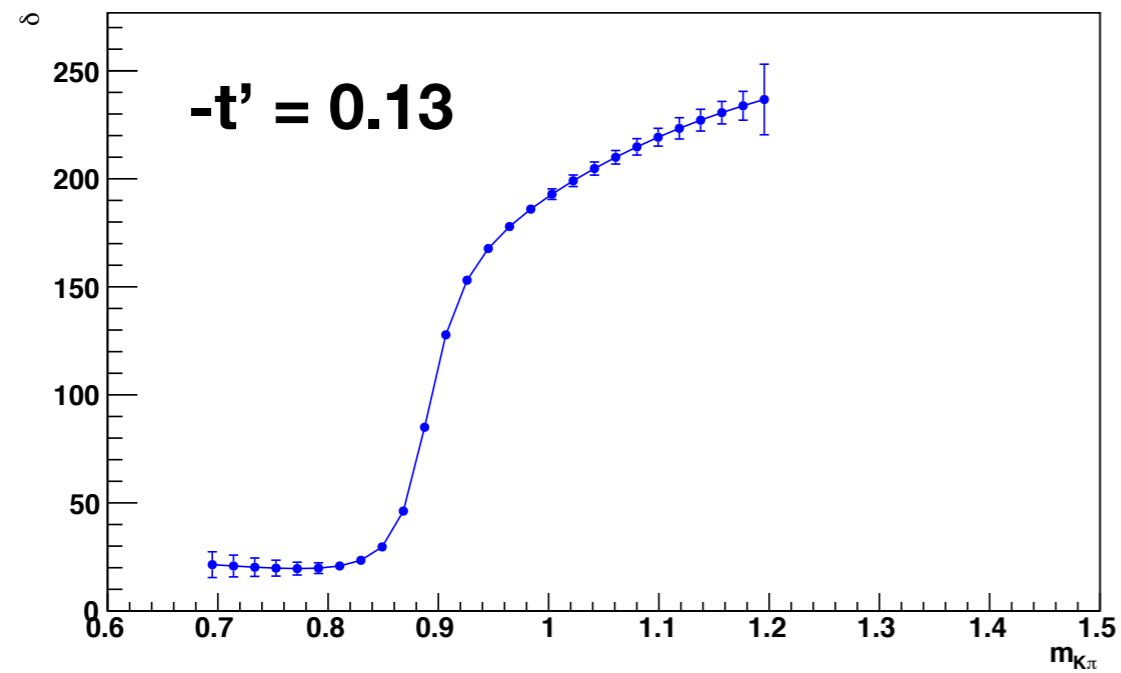
inv mass $K\pi$ VS phase shift



inv mass $K\pi$ VS phase shift

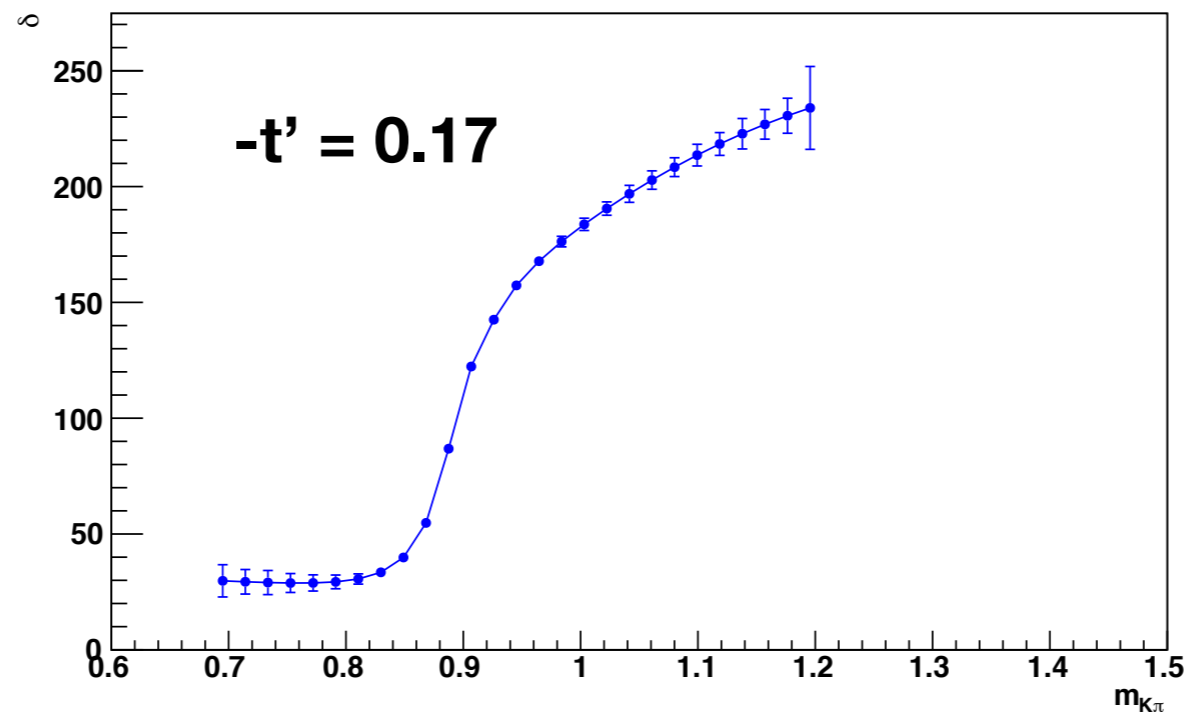


inv mass $K\pi$ VS phase shift

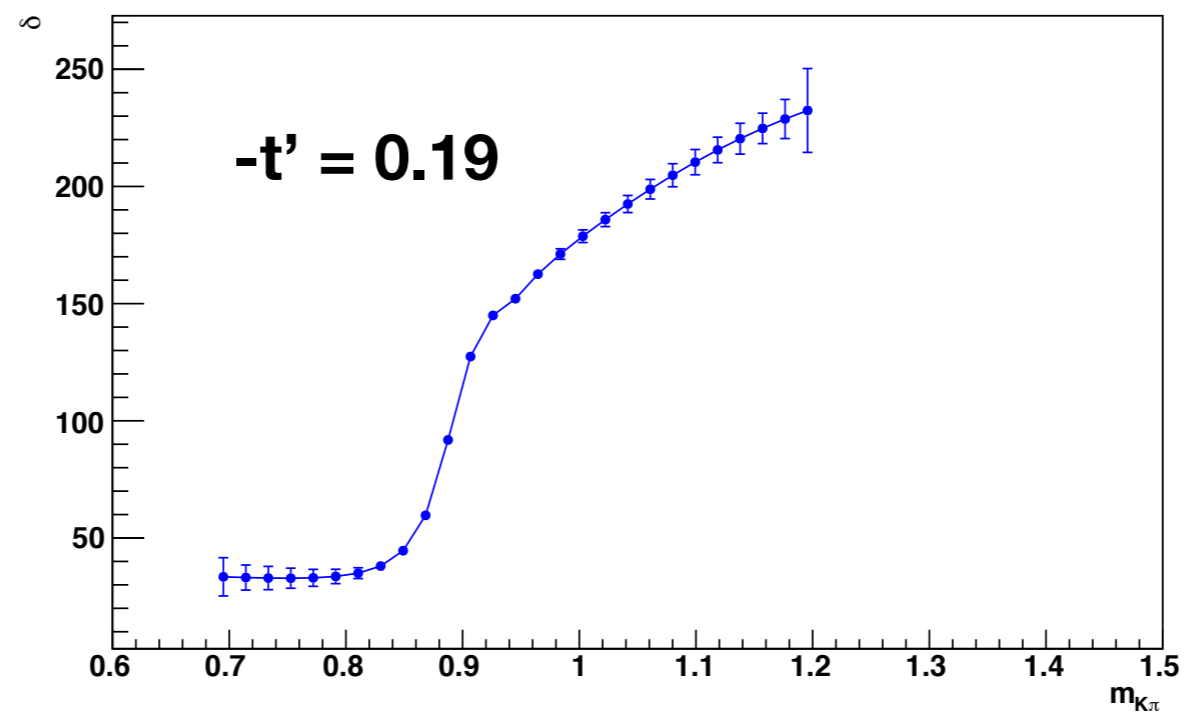


Phase Shift

inv mass $K\pi$ VS phase shift



inv mass $K\pi$ VS phase shift



Kinematics of Generation

