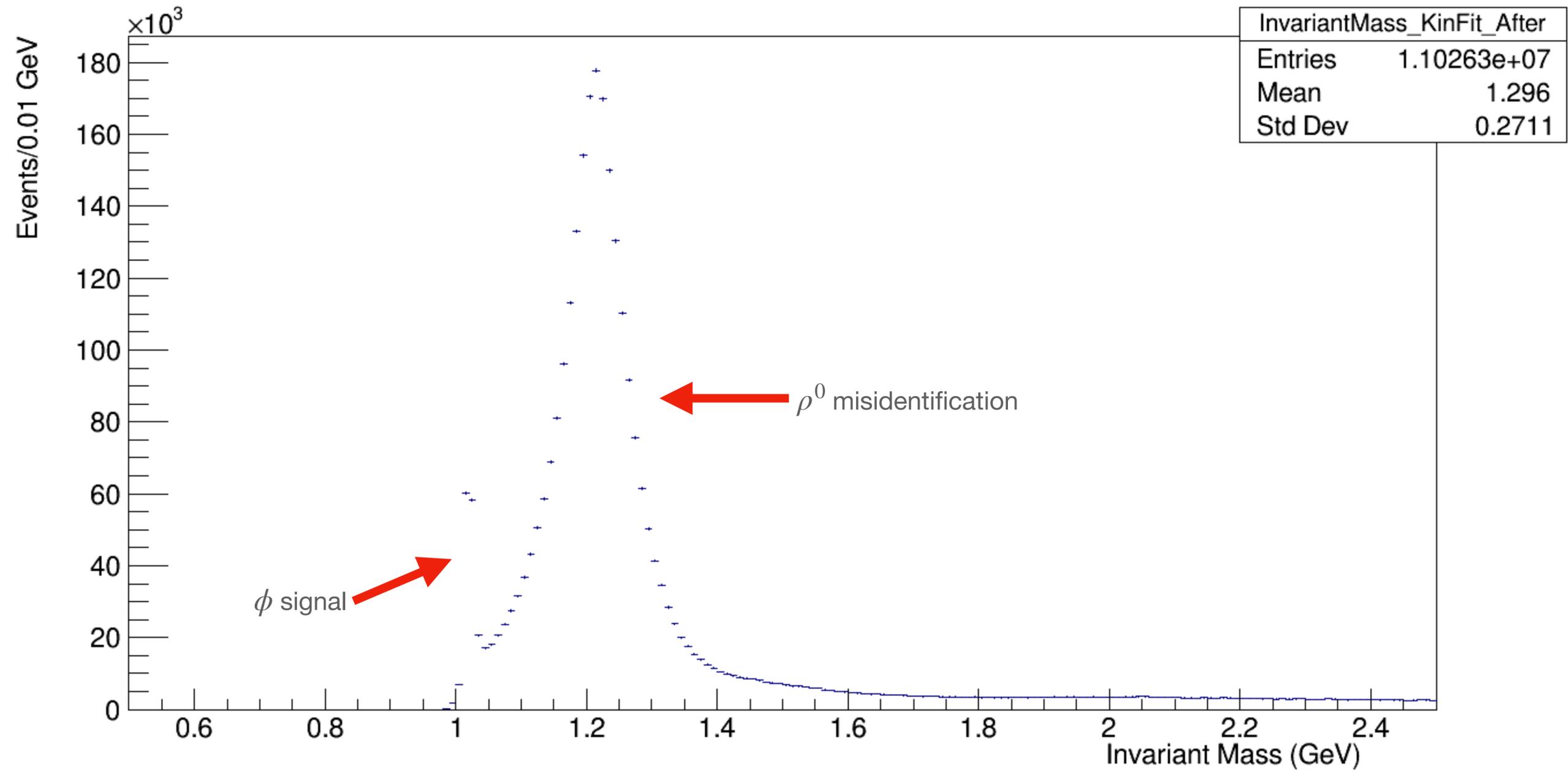


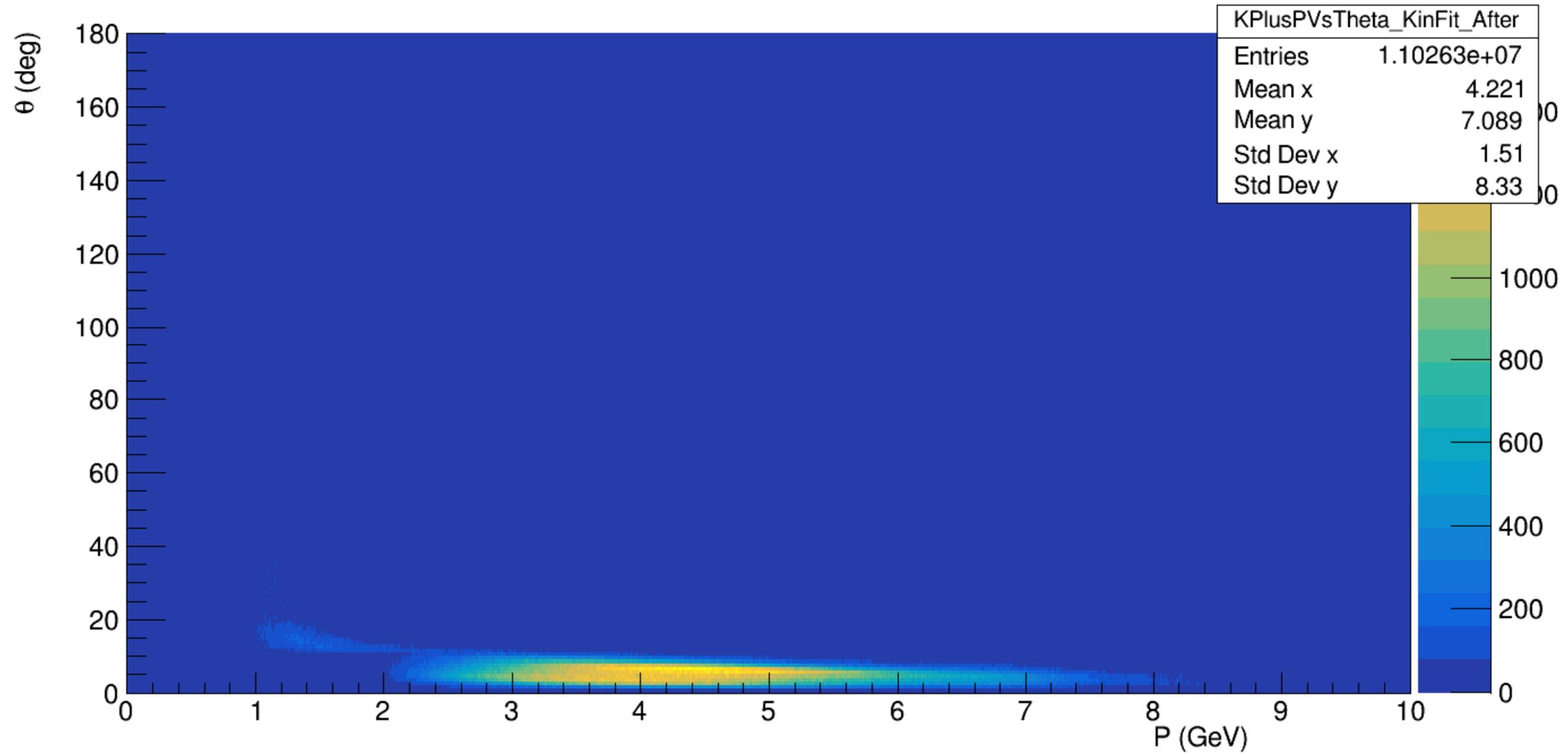
# $\gamma p \rightarrow \phi p \rightarrow K^+ K^- p$ from deuteron

- Reaction:  $\gamma d \rightarrow \phi p(n) \rightarrow K^+ K^- p(n)$
- Event selection
  - 2 positive and 1 negative tracks, no extra tracks or showers
  - kinematic fitting with P4 and vertex constraint, confidence level  $> 0.01$
  - tagger accidental subtracted with 4 beam bunches on each side
  - standard GlueX PID cuts (timing and dE/dx)
  - cuts on vertex to constrain to the target region
  - missing  $P^-$  :  $0.7 \text{ GeV} < P_{\text{missing}}^- < 1.2 \text{ GeV}$
  - charged tracks PID FOM  $> 0.1$
  - missing momentum  $> 200 \text{ MeV}$
  - photon energy:  $6.0 \text{ GeV} < E_\gamma < 10.8 \text{ GeV}$

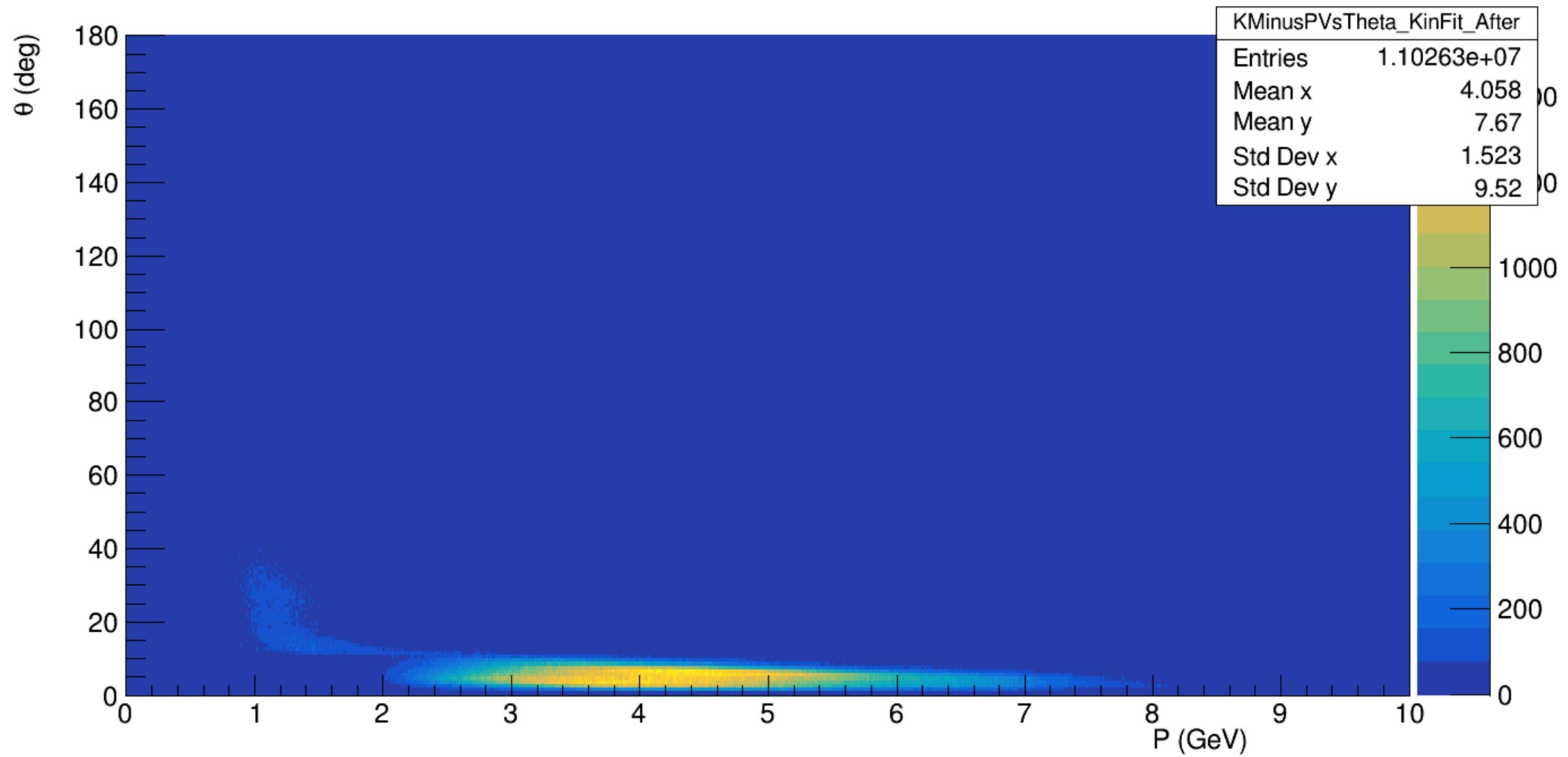
- Invariant mass of the  $K^+K^-$  pair



- $K^+$  kinematics



- $K^-$  kinematics



- $p$  kinematics

