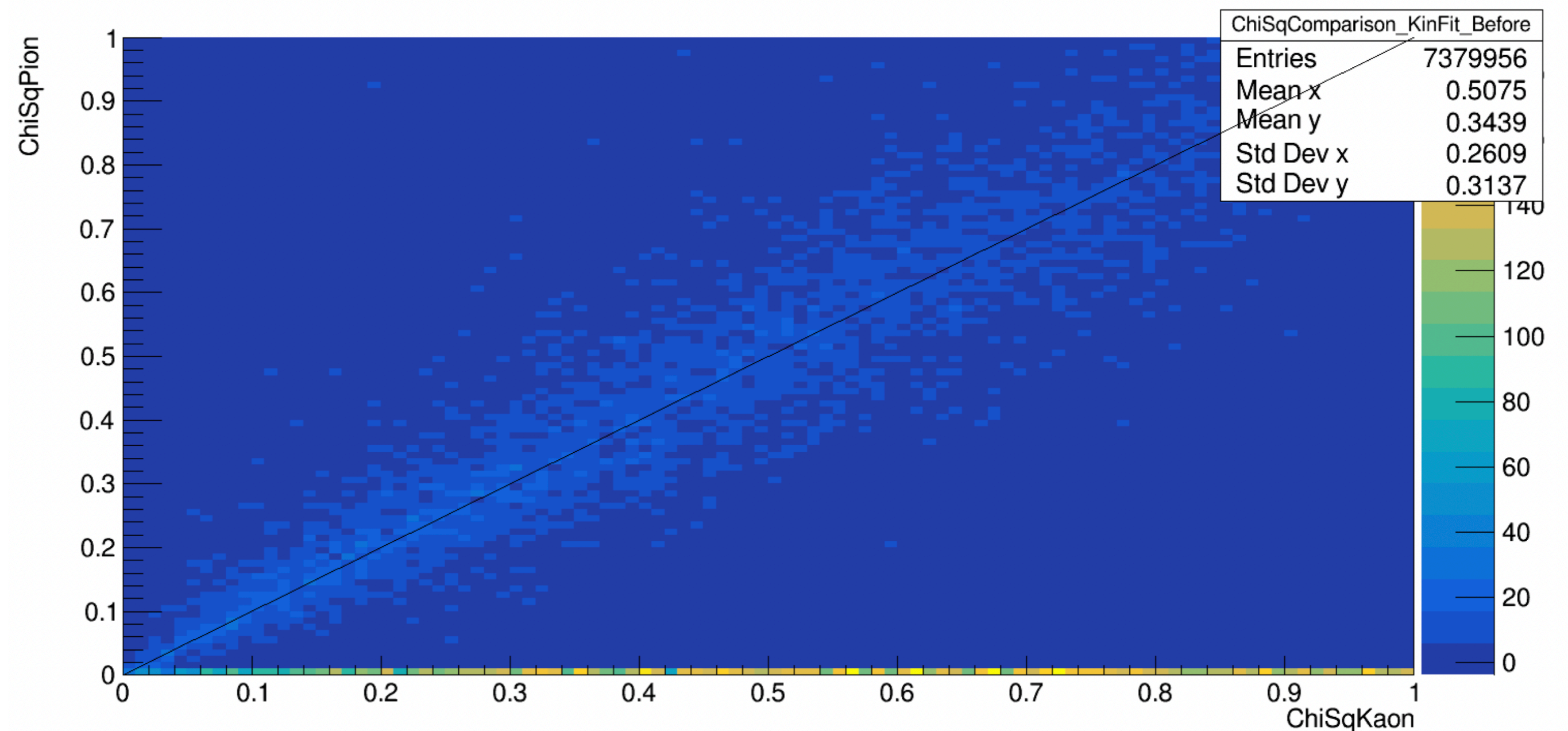


# $\chi^2$ comparison between kaon and pion

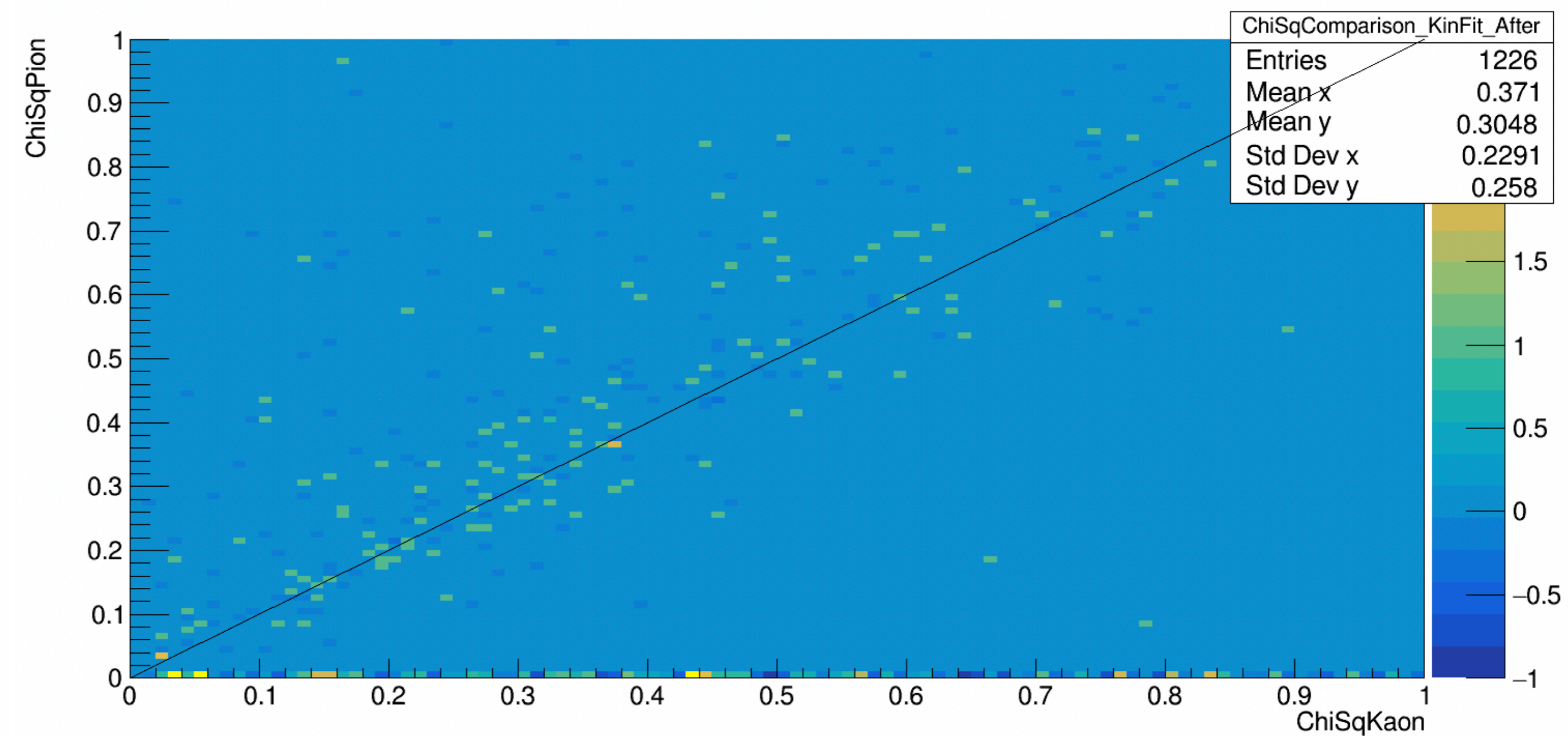
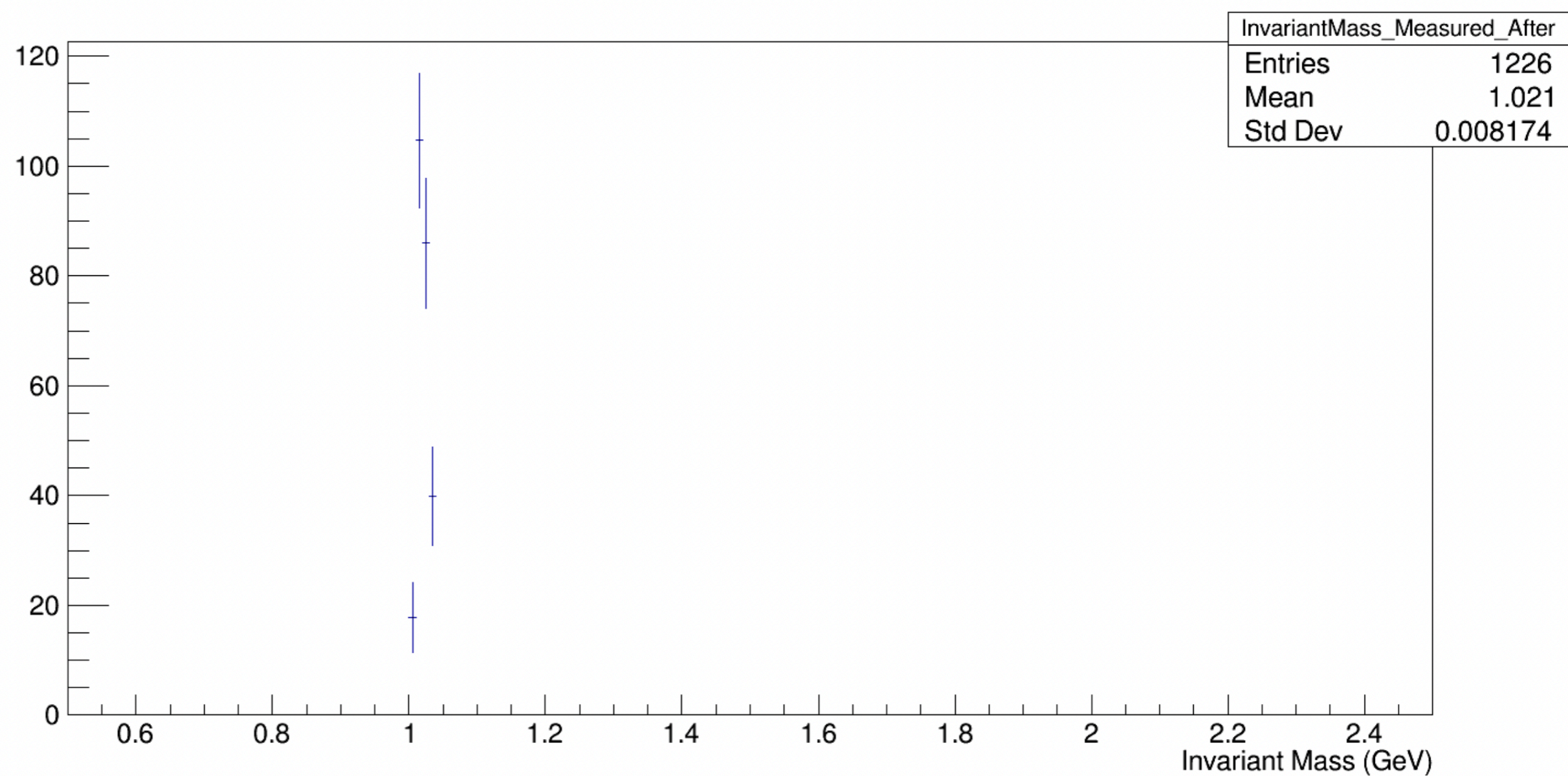
- Data is run through both  $\gamma d \rightarrow K^+ K^- p(n)$  and  $\gamma d \rightarrow \pi^+ \pi^- p(n)$
- Merge two output trees to compare the  $\chi^2/NDF$
- $\chi_{pion}^2 = 0$  if no matching is found for that combo

Before all cuts



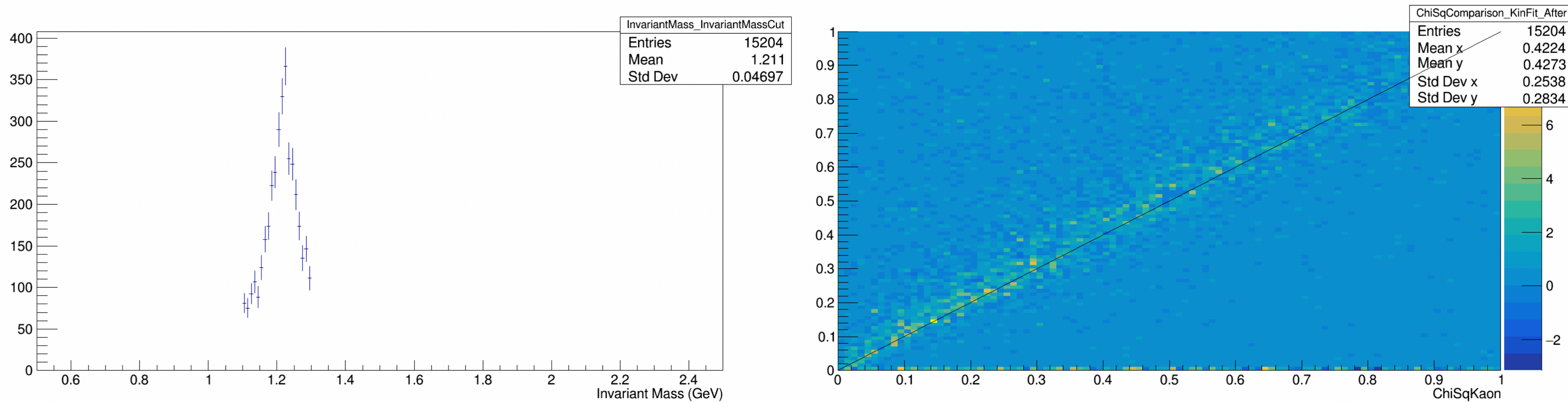
# $\chi^2$ comparison between kaon and pion

- Signal region
- After various cuts and  $1.00 \text{ GeV} < m_{K^+K^-} < 1.04 \text{ GeV}$



# $\chi^2$ comparison between kaon and pion

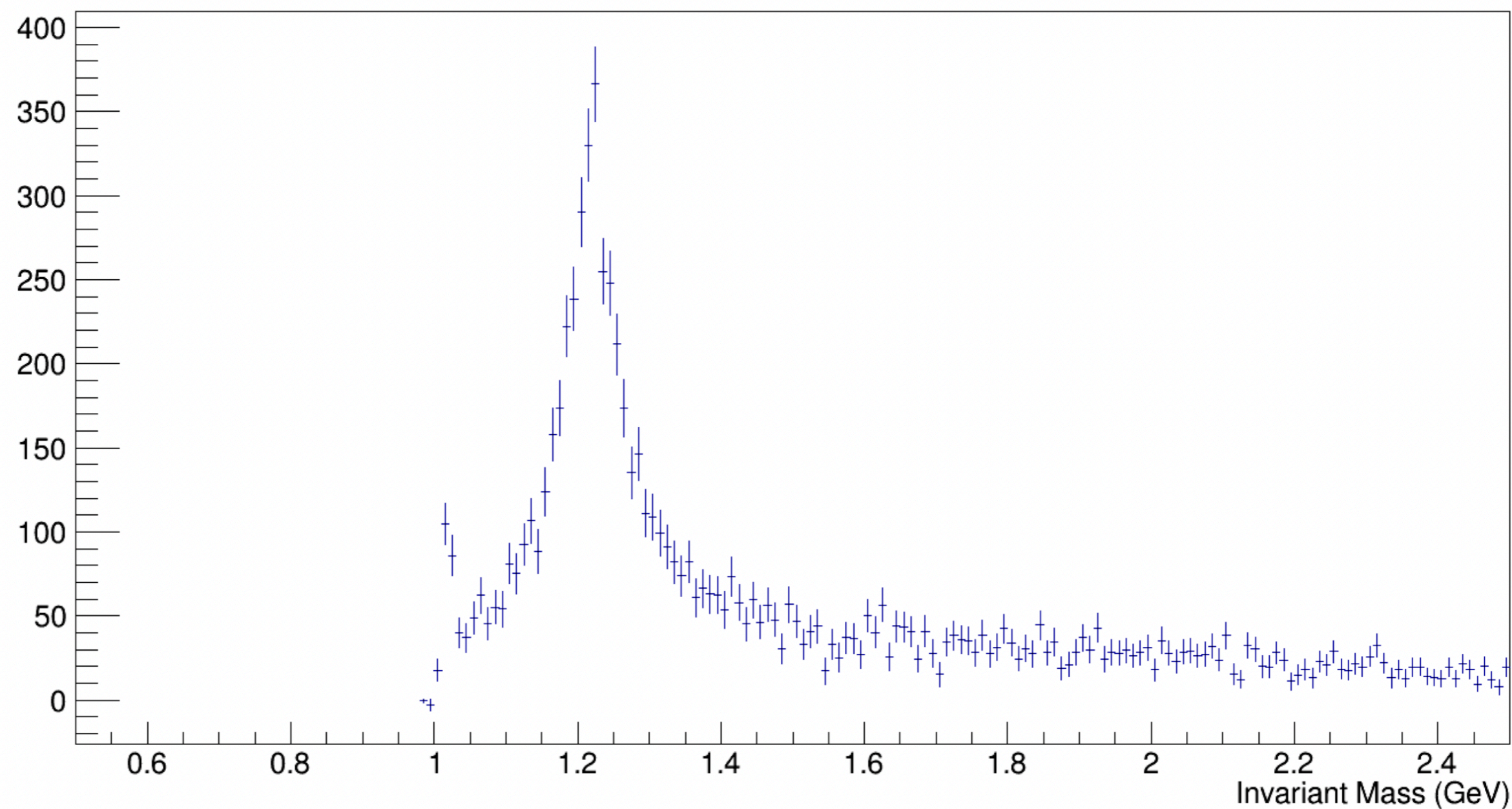
- Background region
- After various cuts and  $1.10 \text{ GeV} < m_{K^+K^-} < 1.30 \text{ GeV}$



# $\chi^2$ comparison between kaon and pion

- Tried to cut the events with  $\chi^2_{pion} > \chi^2_{kaon}$
- Background is suppressed by a little relative to the signal
- However, half of the signal is also cut away

Before the cut



After the cut

