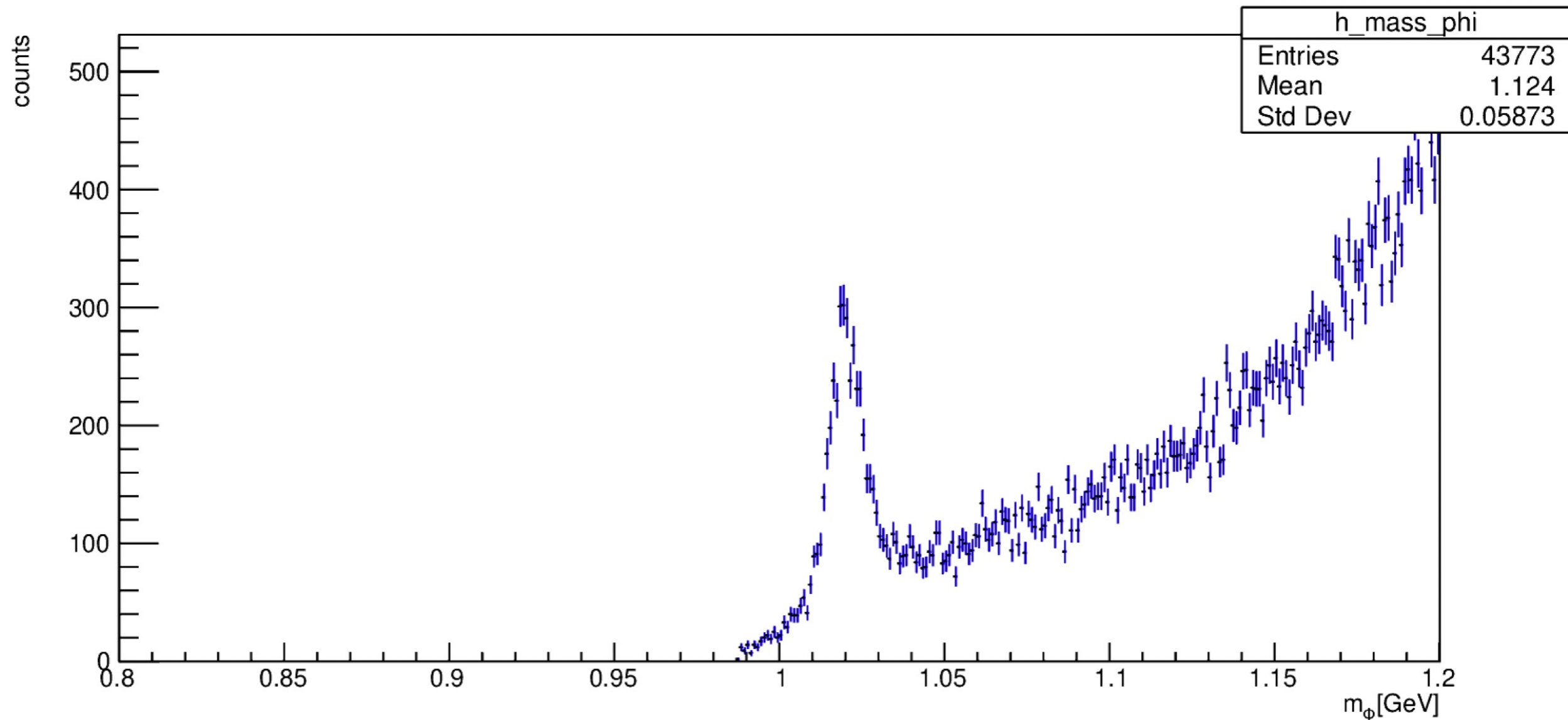


$\gamma p \rightarrow \phi p \rightarrow K^+ K^- p$ analysis

- requiring 3 charged tracks: 2 positive and 1 negative
- kinematic fit: common vertex
- confidence level: $CL > 0.0001$
- reconstructed ϕ meson mass: $0.8 \text{ GeV} < m_\phi < 1.2 \text{ GeV}$
- coplanarity between ϕ and p: $170^\circ < \Delta\phi_{\phi-p} < 190^\circ$
- vertex cut: $51 \text{ cm} < z_{vertex} < 79 \text{ cm}$
- loose PID cuts: CDC, BCAL, TOF
- photon energy: $6 \text{ GeV} < E_\gamma < 10.5 \text{ GeV}$
- energy balance: $|E_\gamma + m_N - E_\phi - E_p| < 1 \text{ GeV}$
- off-time photons: $6 \text{ ns} < |\Delta t| < 18 \text{ ns}$

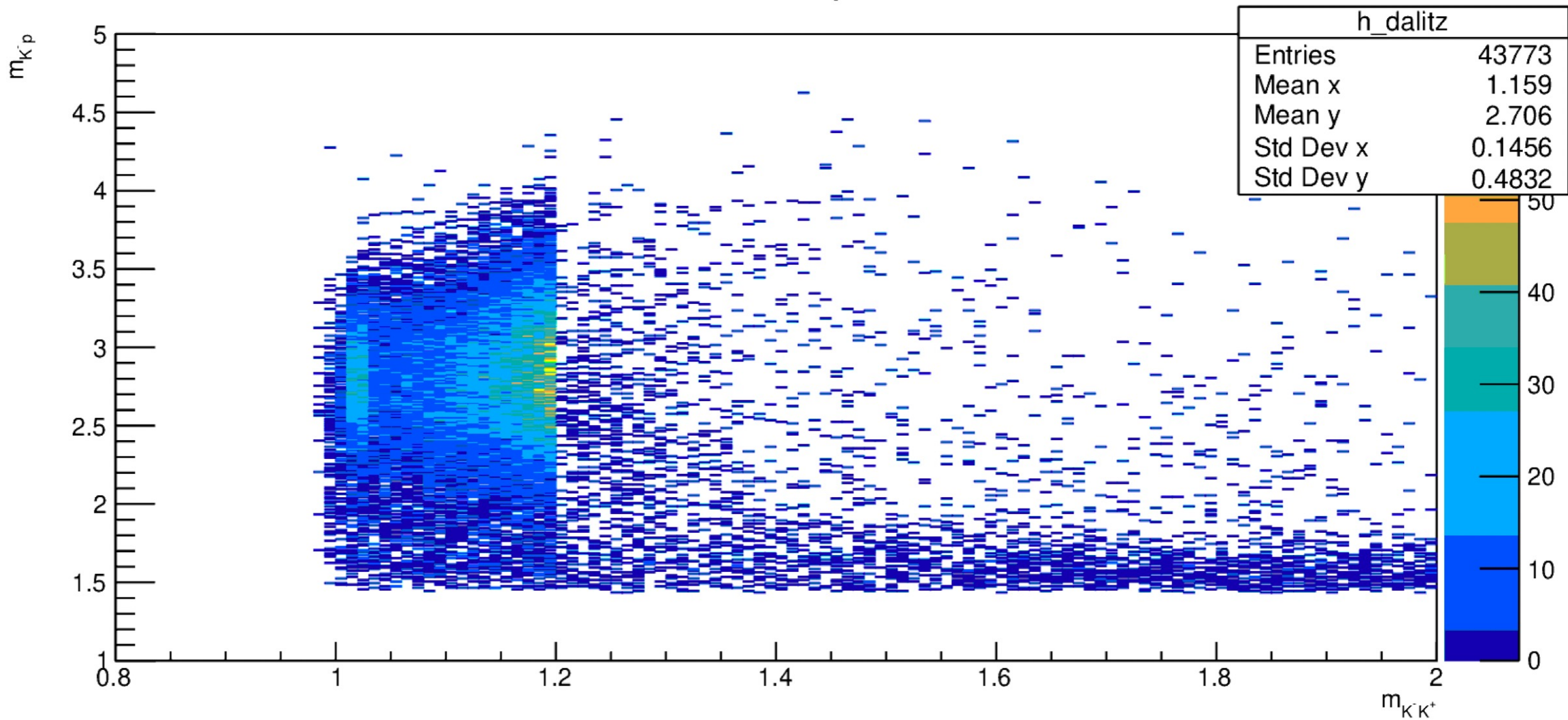
$\gamma p \rightarrow \phi p \rightarrow K^+ K^- p$ analysis

invariant mass of reconstructed Φ meson



$\gamma p \rightarrow \phi p \rightarrow K^+ K^- p$ analysis

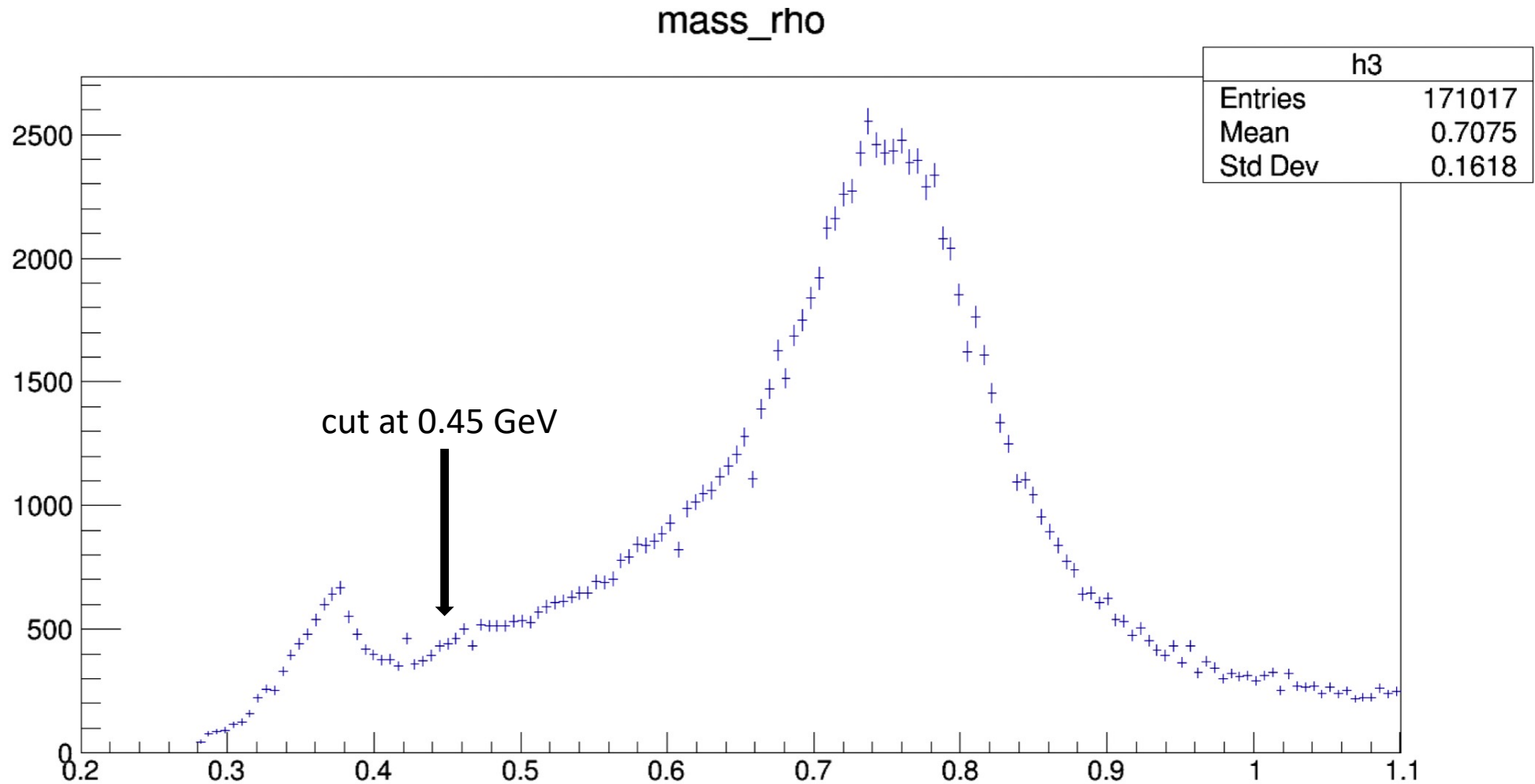
Dalitz-like plot



$\gamma p \rightarrow \phi p \rightarrow K^+ K^- p$ analysis

Misidentification of pions as kaons from the ρ^0 channel

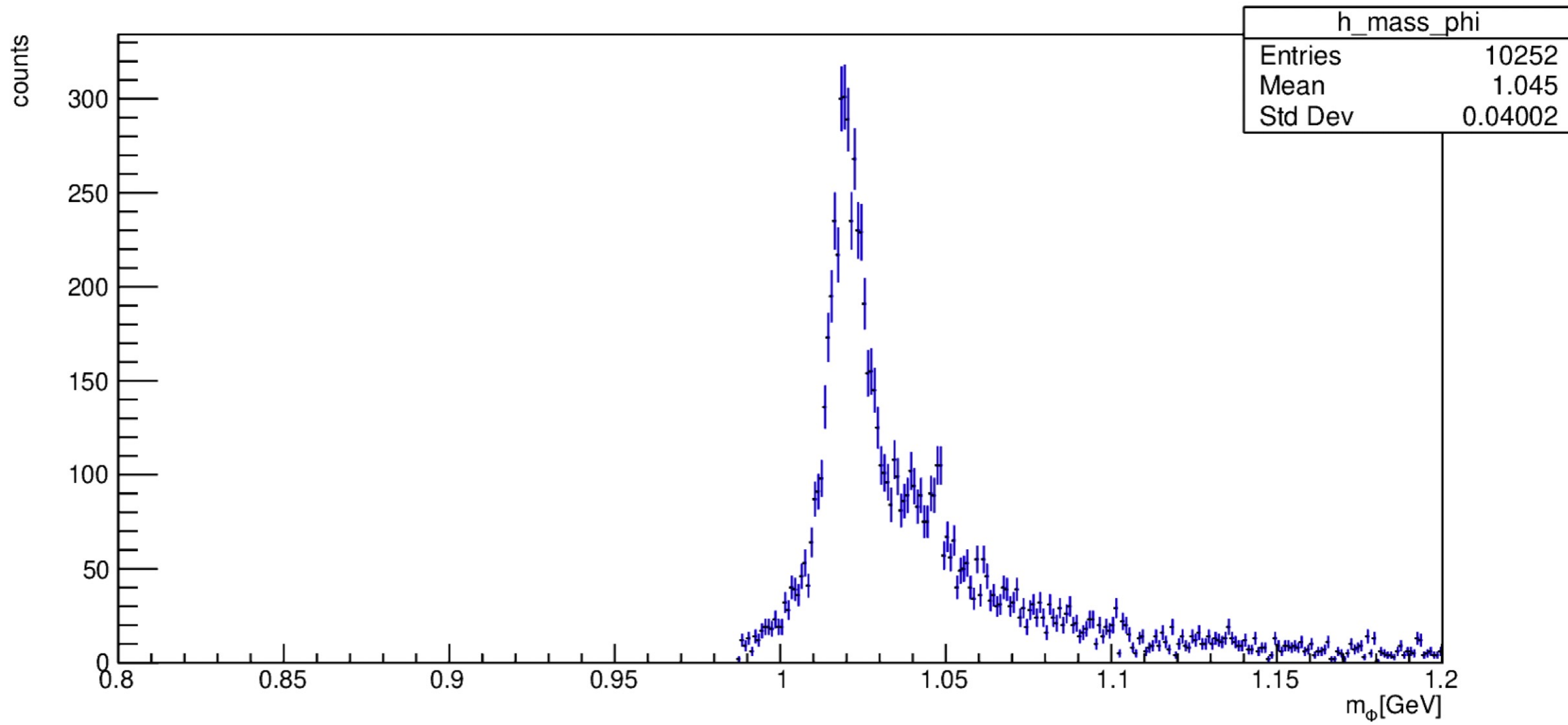
Reconstruct the rho meson assuming the kaons to be pions



$\gamma p \rightarrow \phi p \rightarrow K^+ K^- p$ analysis

After rho mass cut

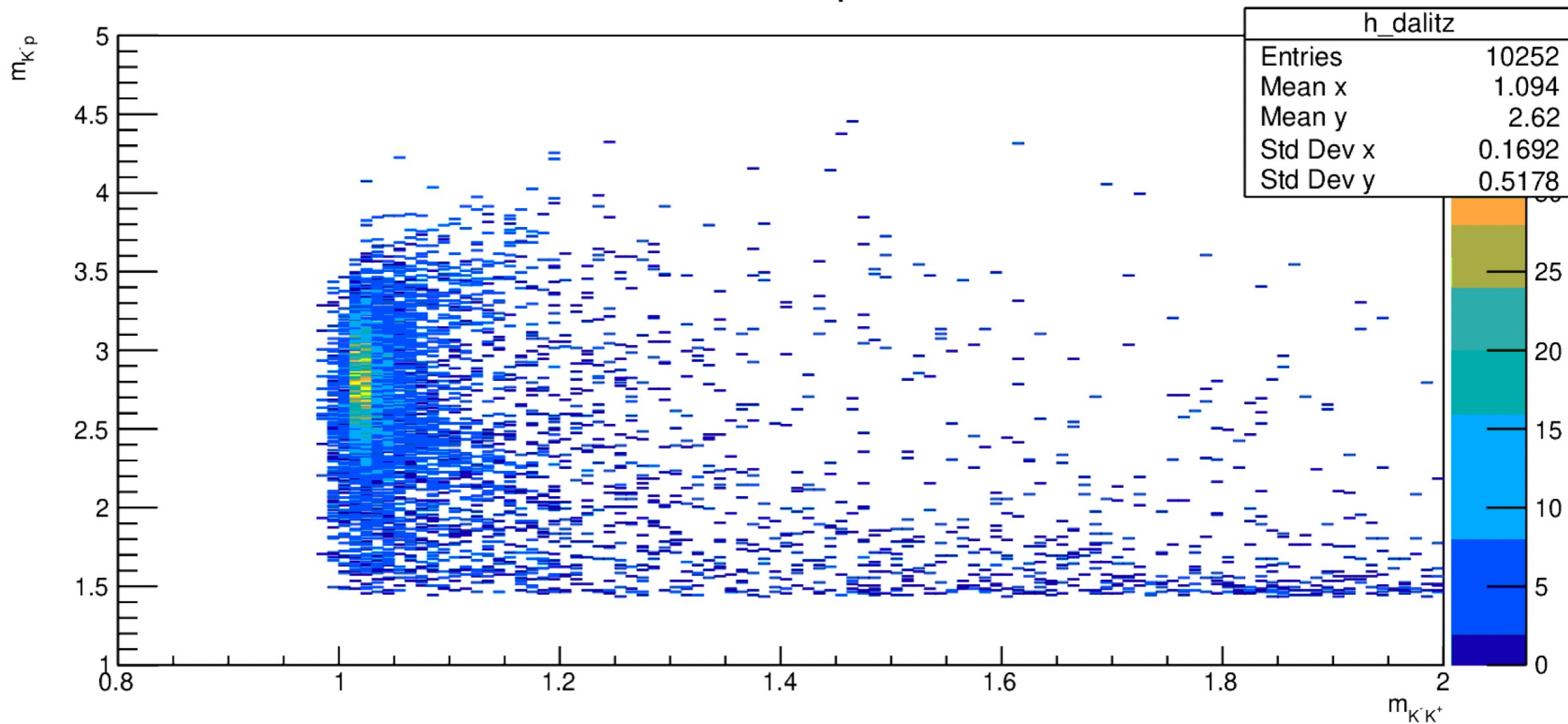
invariant mass of reconstructed Φ meson



$\gamma p \rightarrow \phi p \rightarrow K^+ K^- p$ analysis

After rho mass cut

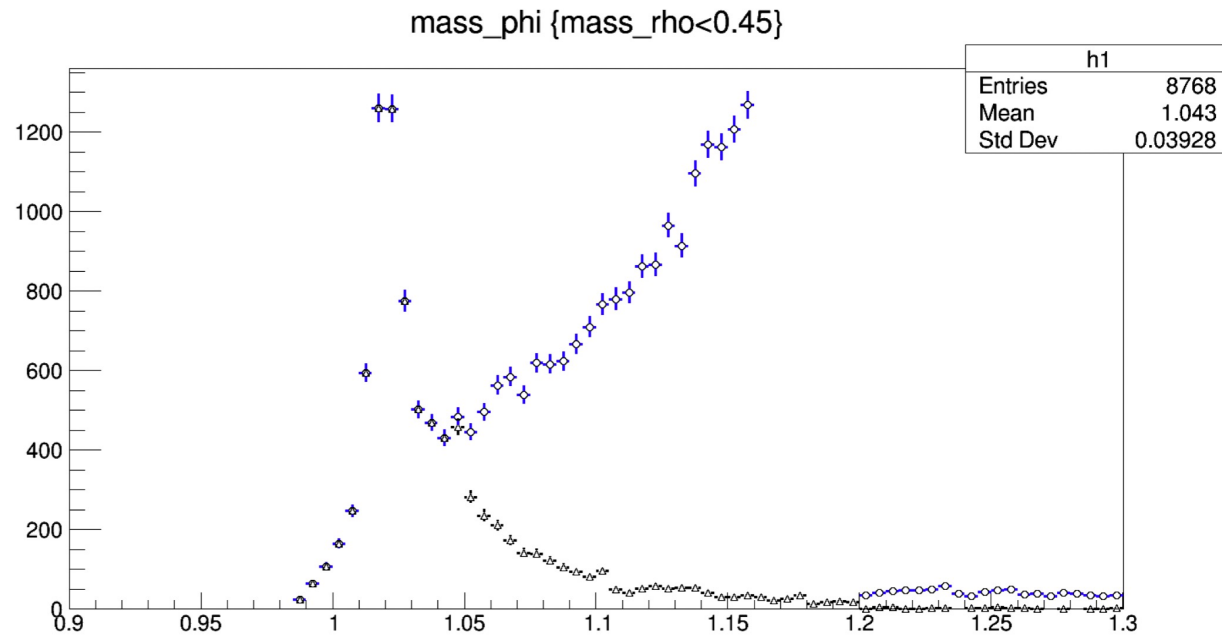
Dalitz-like plot



$\gamma p \rightarrow \phi p \rightarrow K^+ K^- p$ analysis

Discussion

1. a cut at 0.45 GeV of rho mass seems too tight?
2. background under the phi peak is still present?



Next step

1. simulation results
2. look for possible omega background