

# Update (MVA photon cuts)

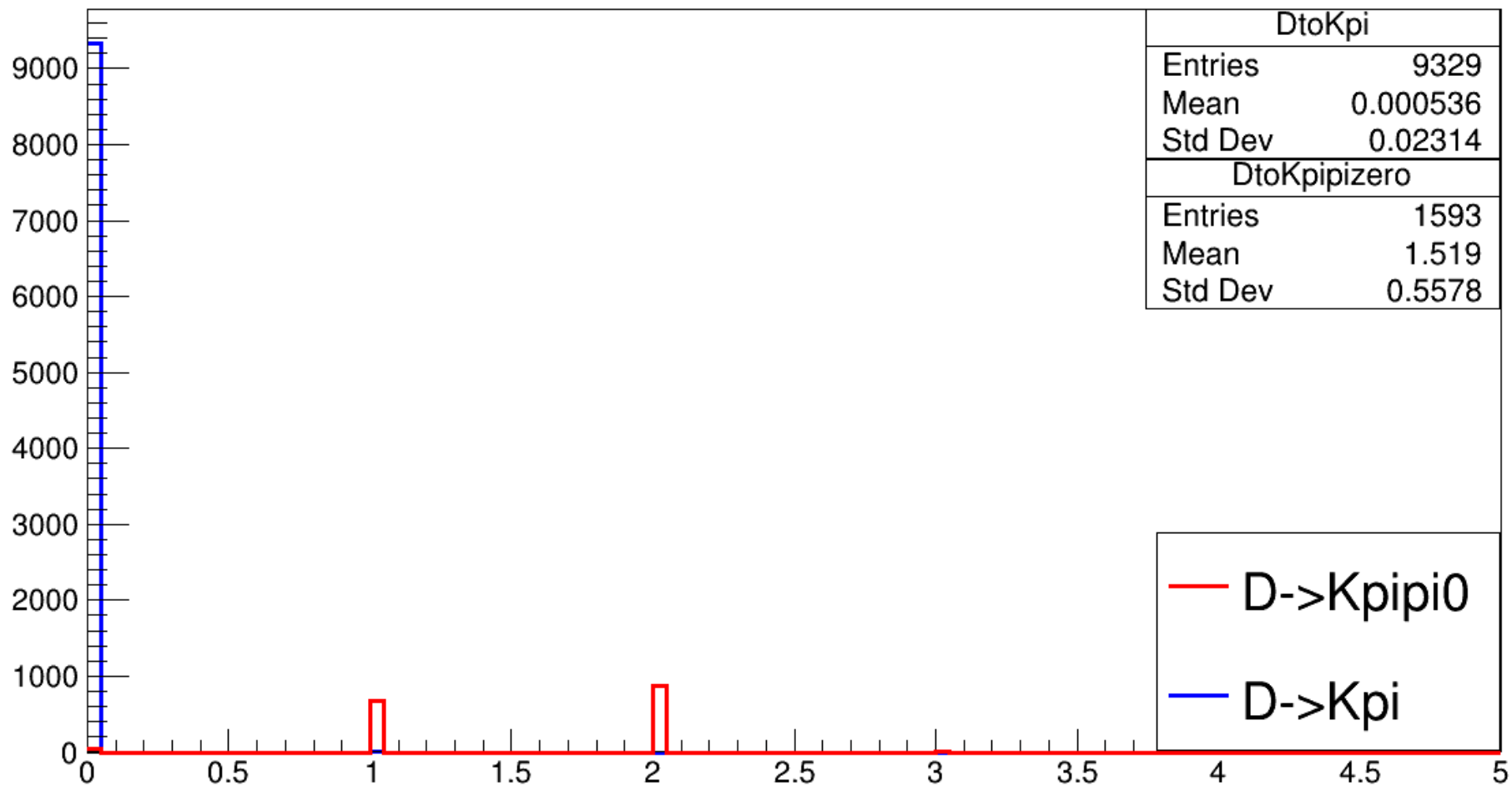
$B^+ \rightarrow K^+ \tau^- \mu^+$

16 Nov. 2023

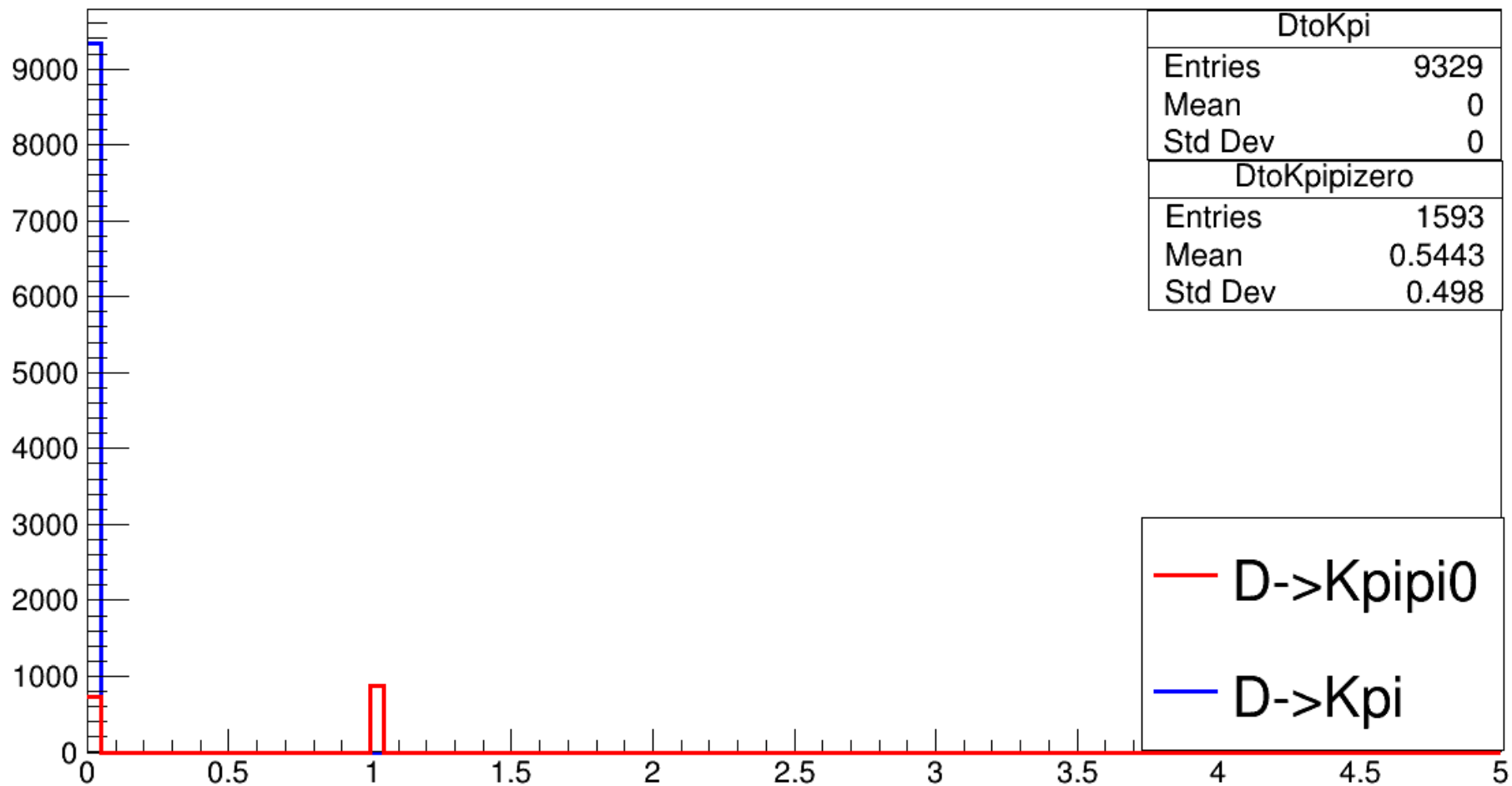
# Cuts in the reconstruction program

- $m_{k\pi} > 0.7$
- $\text{abs}(m_{l\pi} - 3.1) > 0.015$
- $1.6 < m_{\text{hadronROE}} < 2.4$
- $\text{abs}(\cos(P_{\text{Btag}}, P_{\text{tag,vis}})) < 2$
- $\text{abs}(\sin(\text{Phi})) < 1.5$

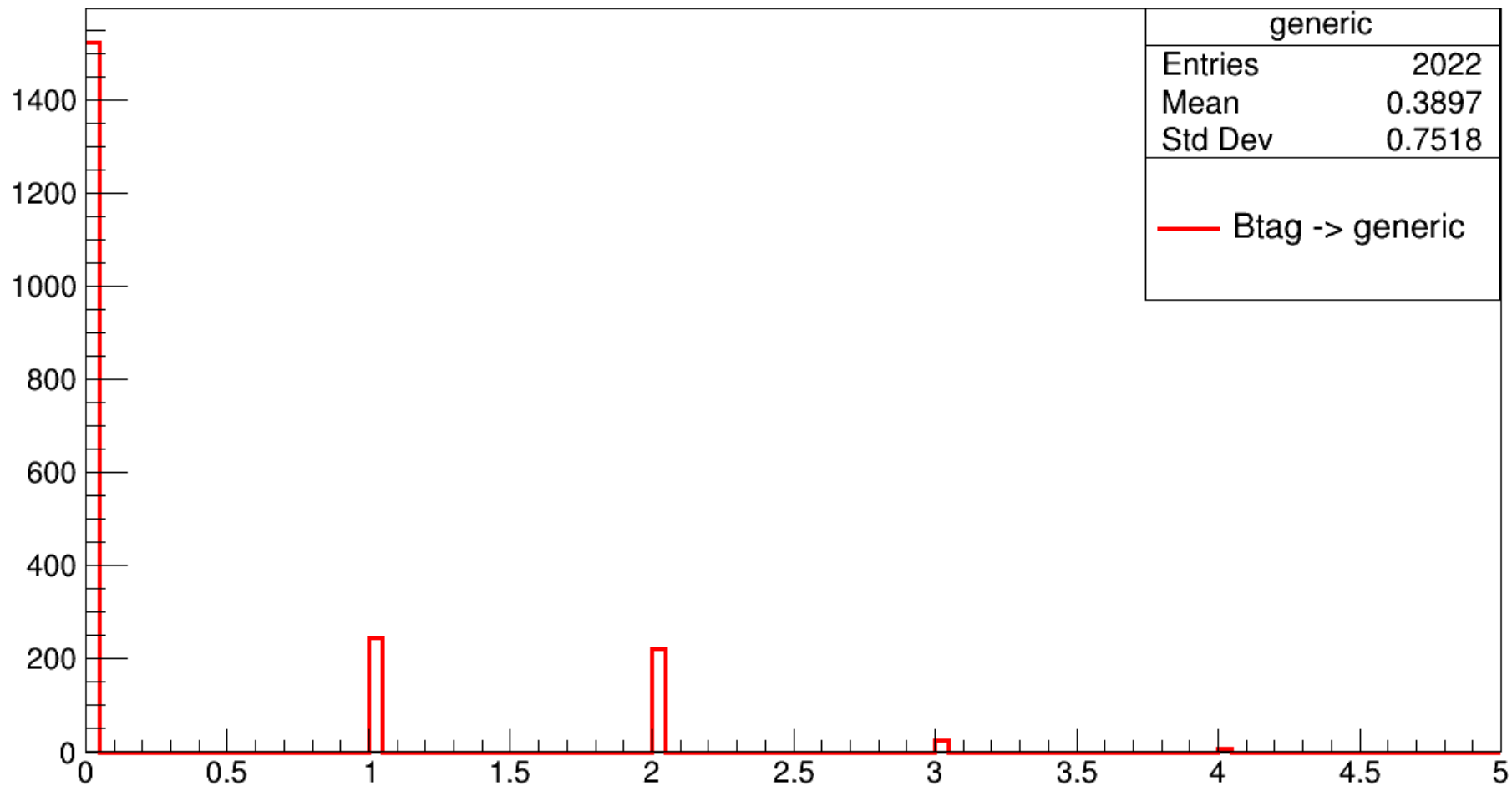
nPhotonsSelected with  $\cos(P_{Btag}, P_{vis}) < 1$ ,  $|\sin(\phi)| < 1$ ,  $Y_{rank} = 1$  and  $|\Delta m_D - 1.86| < 0.035$



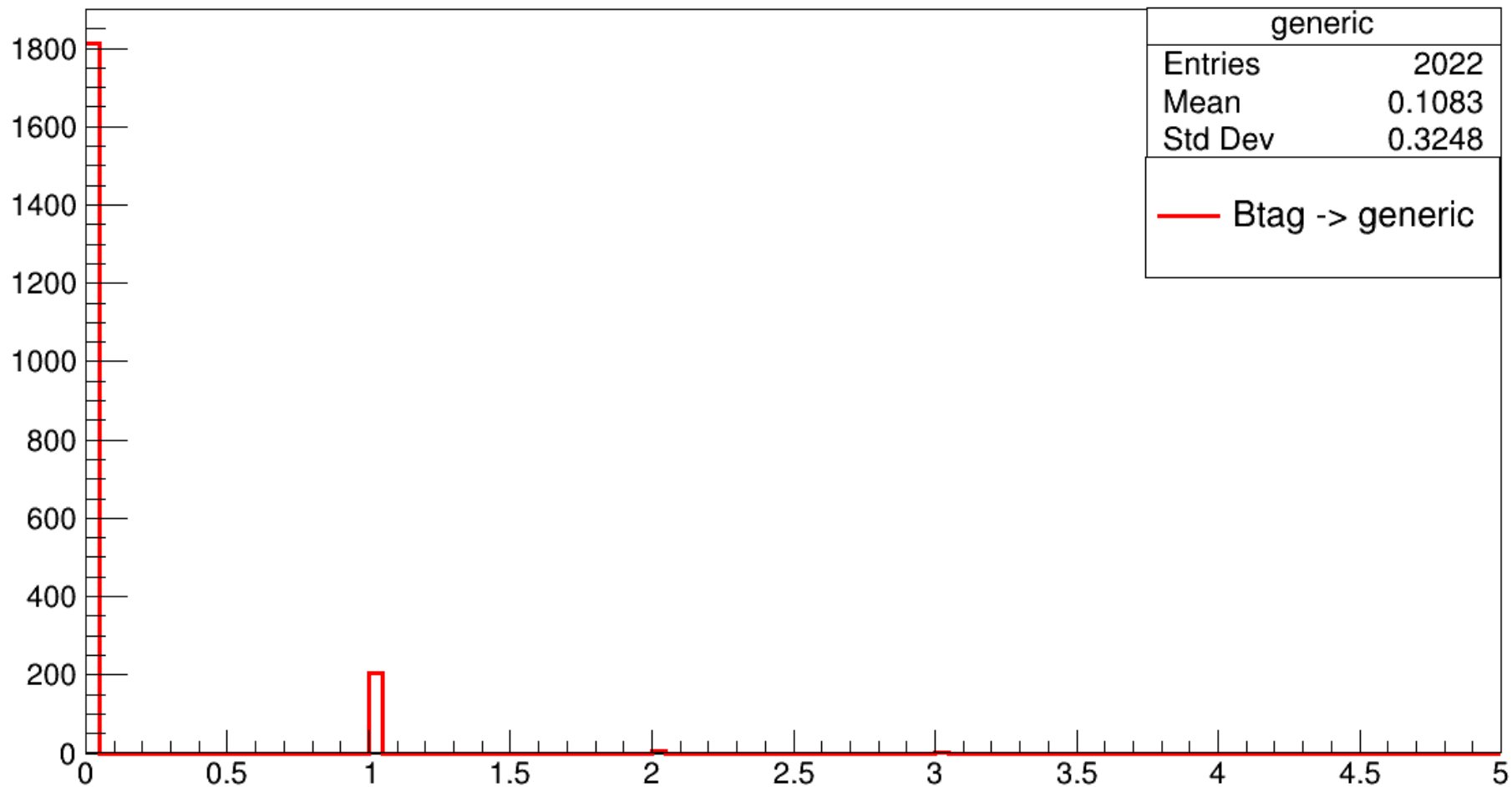
nPizeroSelected with  $\cos(PB_{tag}, P_{vis}) < 1$ ,  $|\sin_{\phi}| < 1$ ,  $Y_{rank} = 1$  and  $|\text{m}_D - 1.86| < 0.035$



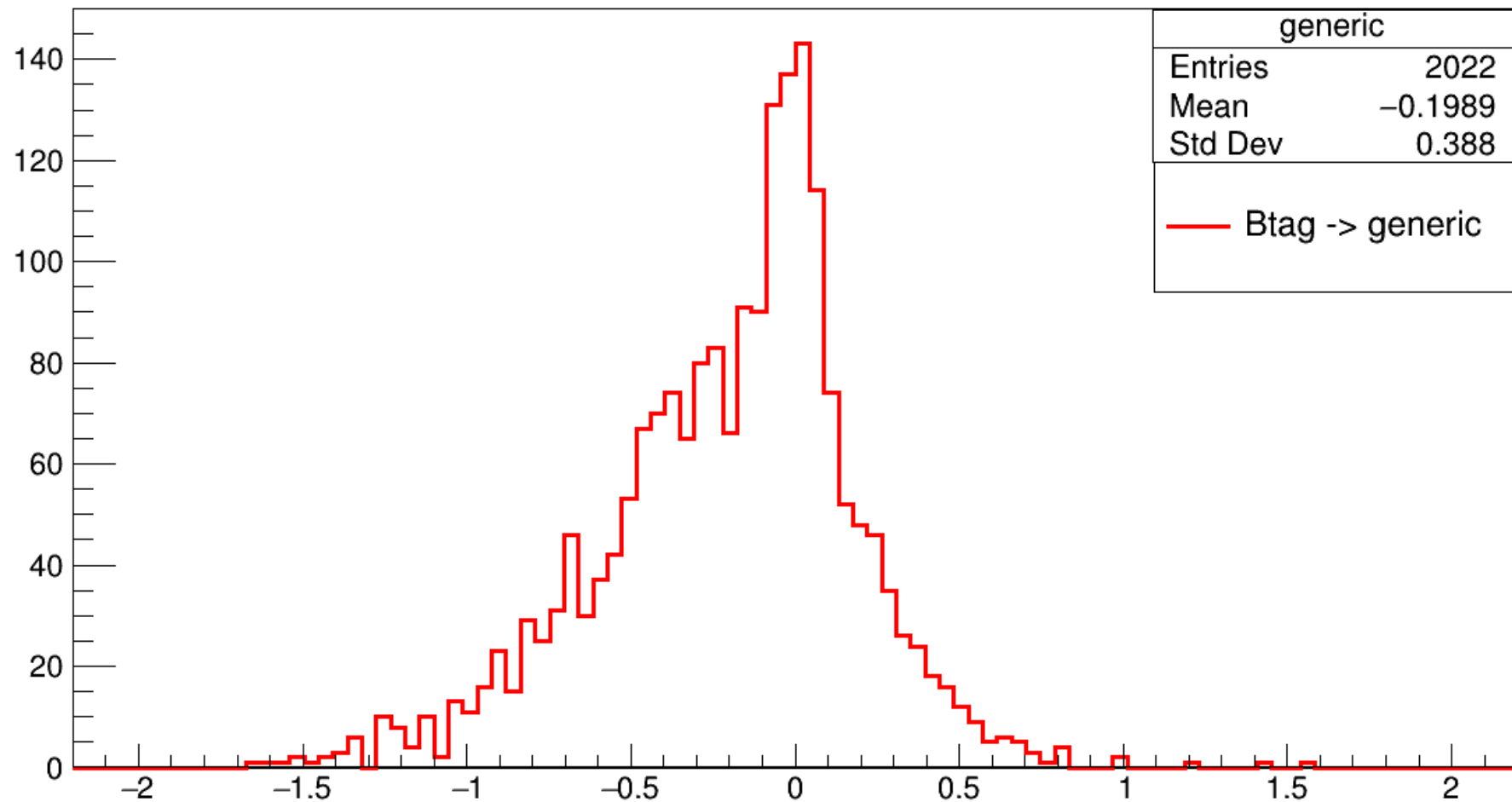
nPhotonsSelected with  $\cos(\text{PBtag}, \text{Pvis}) < 1$ ,  $|\sin(\phi)| < 1$ ,  $Y_{\text{rank}} = 1$  and  $|\text{m}_D - 1.86| < 0.035$



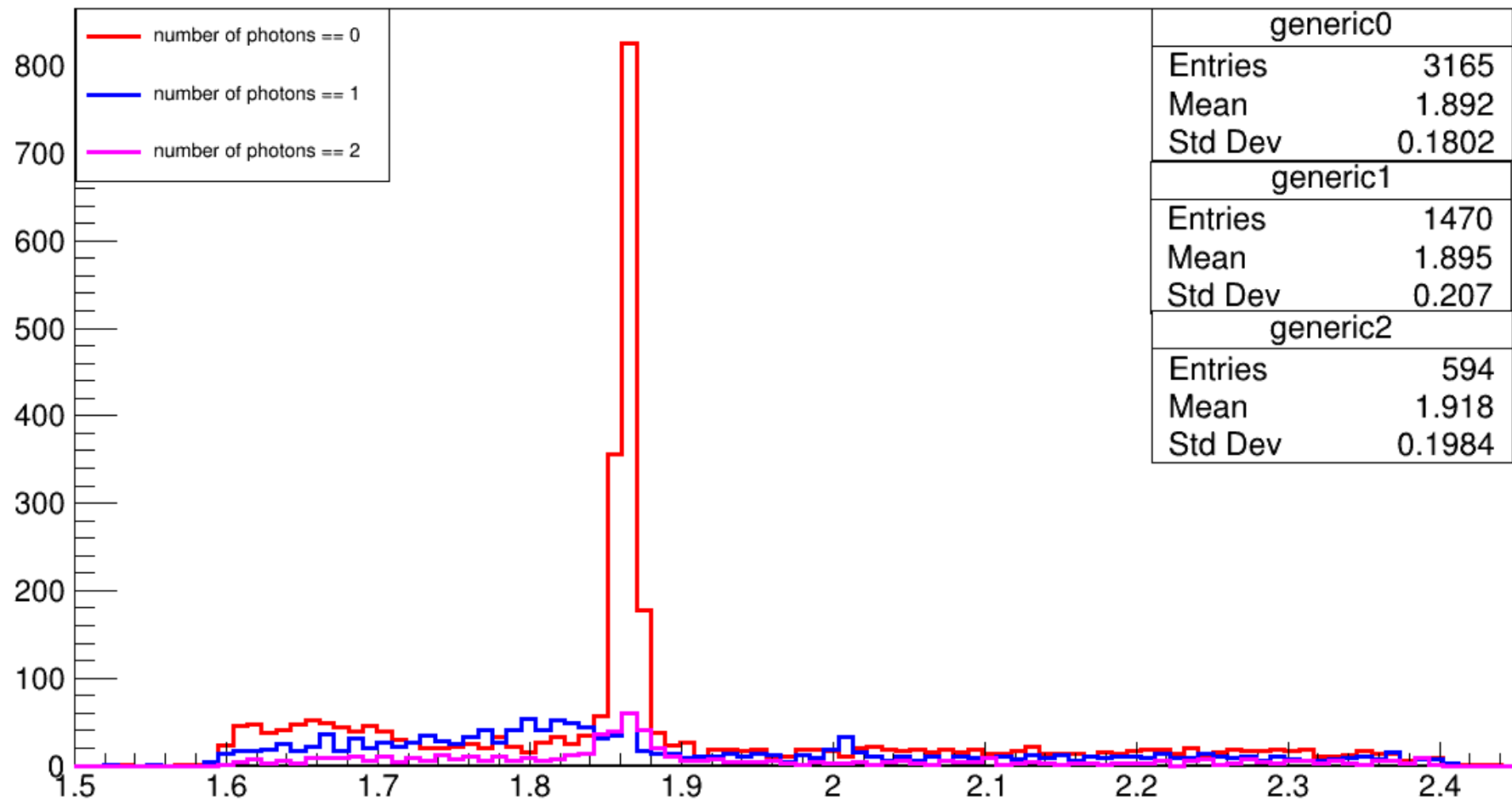
nPizeroSelected with  $\cos(\text{P}b_{\text{tag}}, \text{P}_{\text{vis}}) < 1$ ,  $|\sin(\phi)| < 1$ ,  $Y_{\text{rank}} = 1$  and  $|\text{m}_D - 1.86| < 0.035$



Best sum of cosine angles with  $\cos(\text{Pbtag}, \text{Pvis}) < 1$ ,  $|\sin(\phi)| < 1$ ,  $Y_{\text{rank}} = 1$  and  $|\text{m}_D - 1.86| < 0.035$



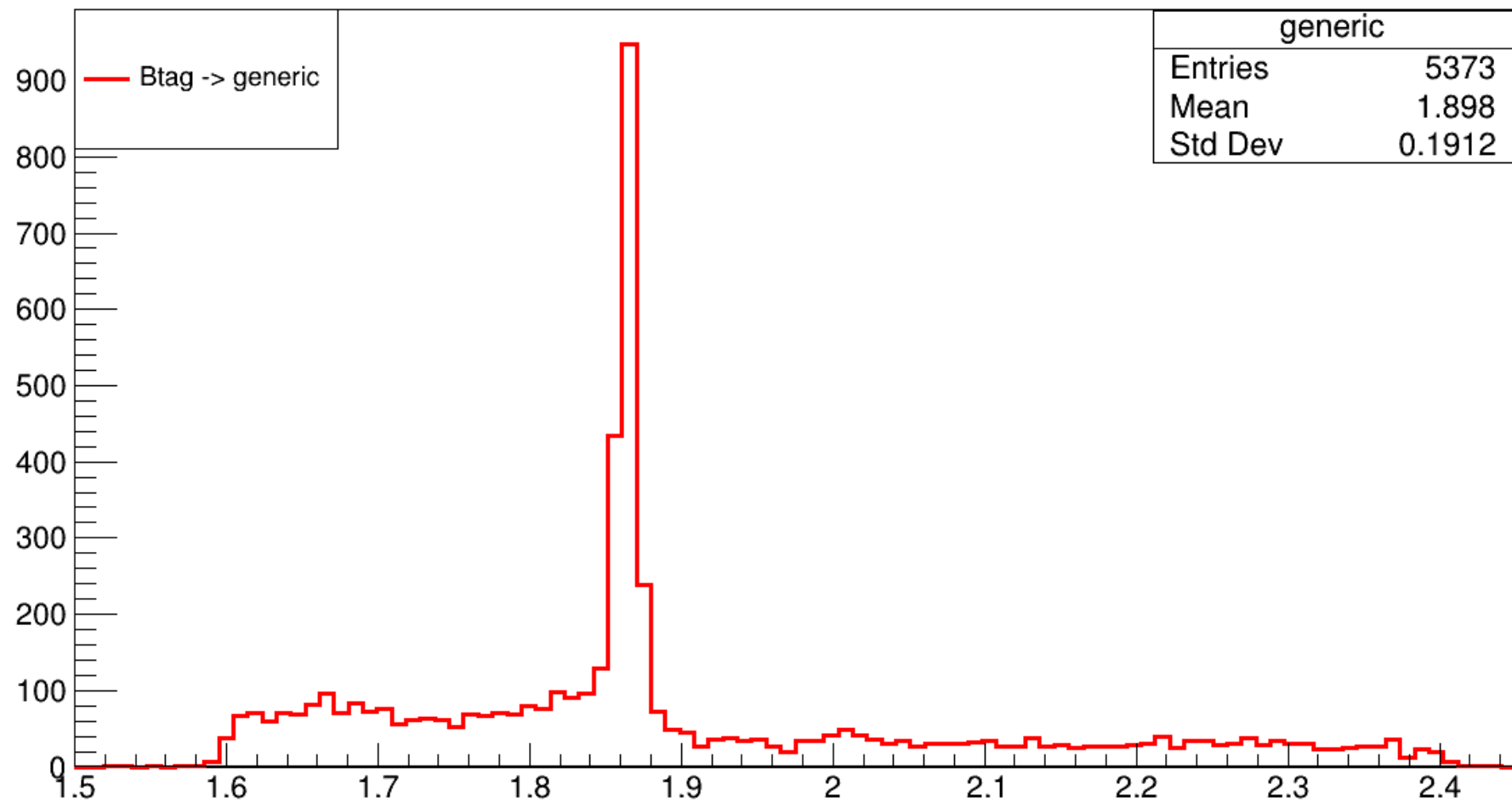
m\_hadROE with  $\cos(\text{PBtag}, \text{Pvis}) < 1$ ,  $\text{abs}(\sin_\phi) < 1$ , rank1 and different number of photon cuts



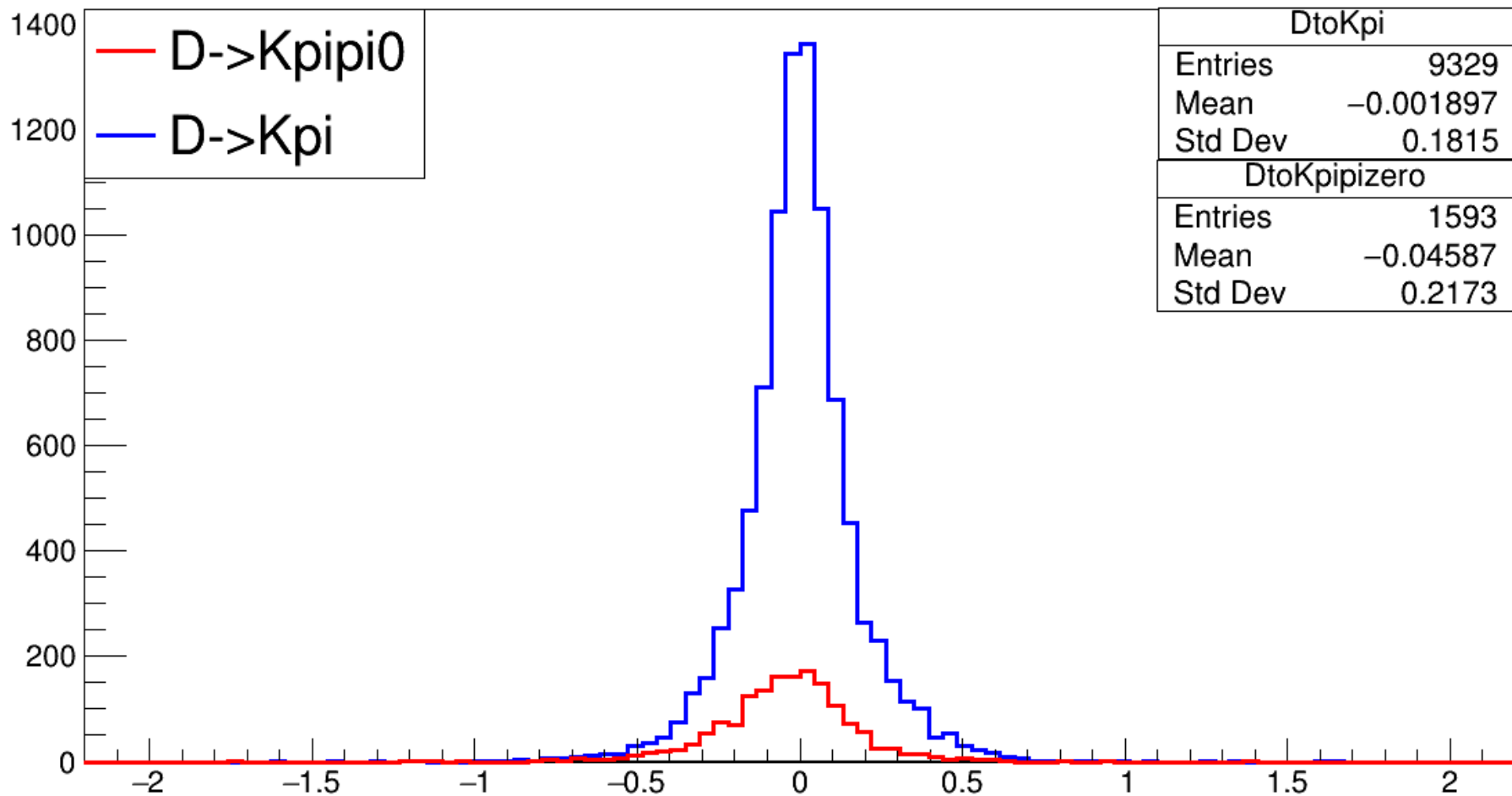


Backup

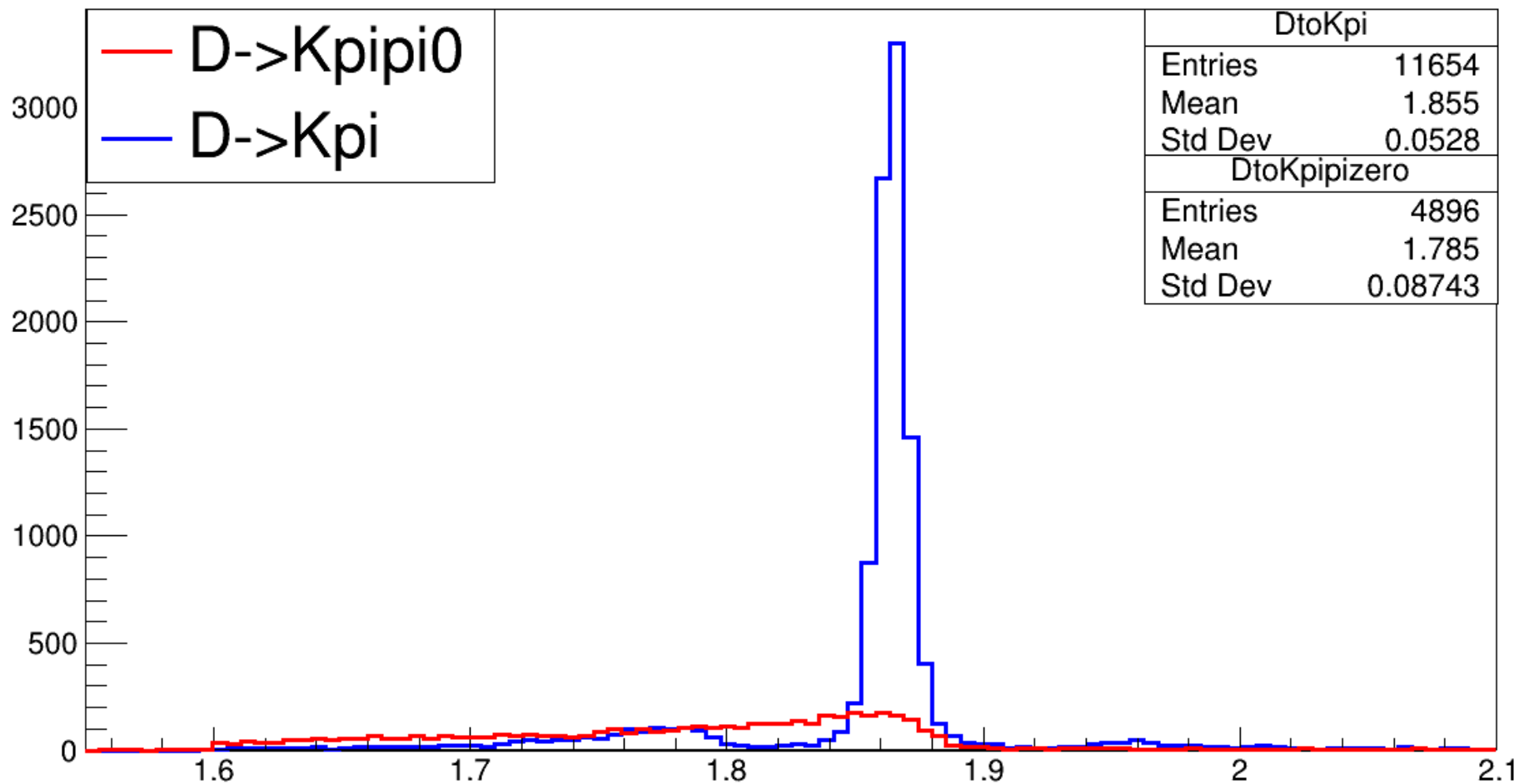
m\_hadROE with  $\cos(\text{P}b_{\text{tag}}, \text{P}_{\text{vis}}) < 1$ ,  $\text{abs}(\sin_{\text{phi}}) < 1$ ,  $Y_{\text{rank}} = 1$



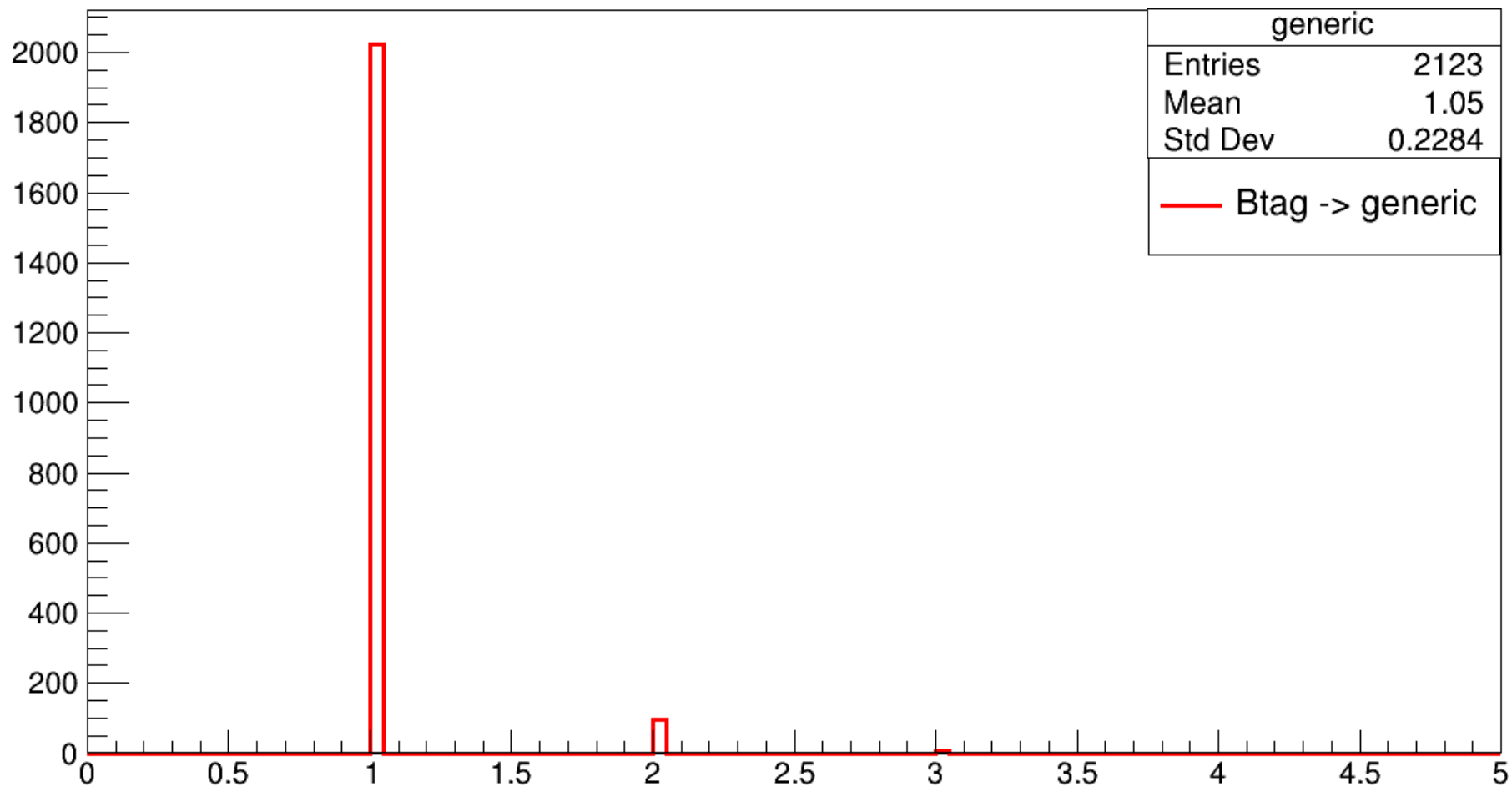
Best sum of cosine angles with  $\cos(\text{PBtag}, \text{Pvis}) < 1$ ,  $|\sin(\phi)| < 1$ ,  $Y_{\text{rank}} = 1$  and  $|\text{m}_D - 1.86| < 0.035$



m\_hadROE with  $\cos(PB_{tag}, P_{vis}) < 1$ ,  $abs(\sin\_phi) < 1$ ,  $Y\_rank = 1$



Y\_rank with  $\cos(PB_{tag}, P_{vis}) < 1$ ,  $|\sin(\phi)| < 1$  and  $|\text{m}_{hadROE} - 1.86| < 0.035$



Y\_rank with  $\cos(PB_{tag}, P_{vis}) < 1$ ,  $|\sin(\phi)| < 1$  and  $|m_{hadROE} - 1.86| < 0.035$

