

# Generic MC update with new photon cuts

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

1.0 M signal events  
3 Streams of generic MC

07 Nov. 2023

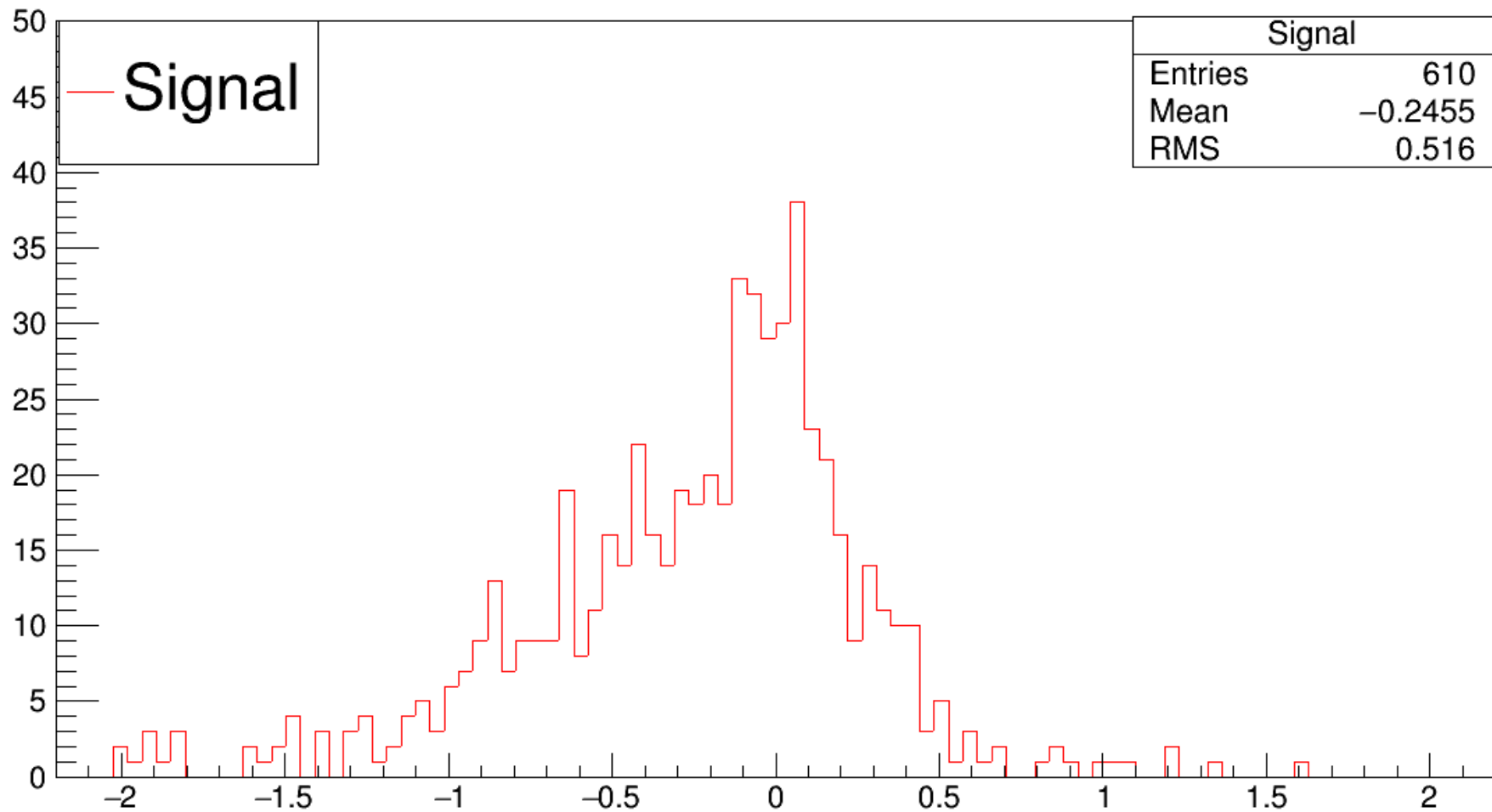
# Cuts used in the reco. program

- $\text{abs}(\sin\_phi) < 1.5$
- $\text{abs}(m\_lpi - 3.1) > 0.015$
- $m\_Kpi > 0.7$
- $\text{abs}(\cos(P_{\text{Btag}}, P_{\text{vis}})) < 2$
- $1.6 < m\_D < 2.4$

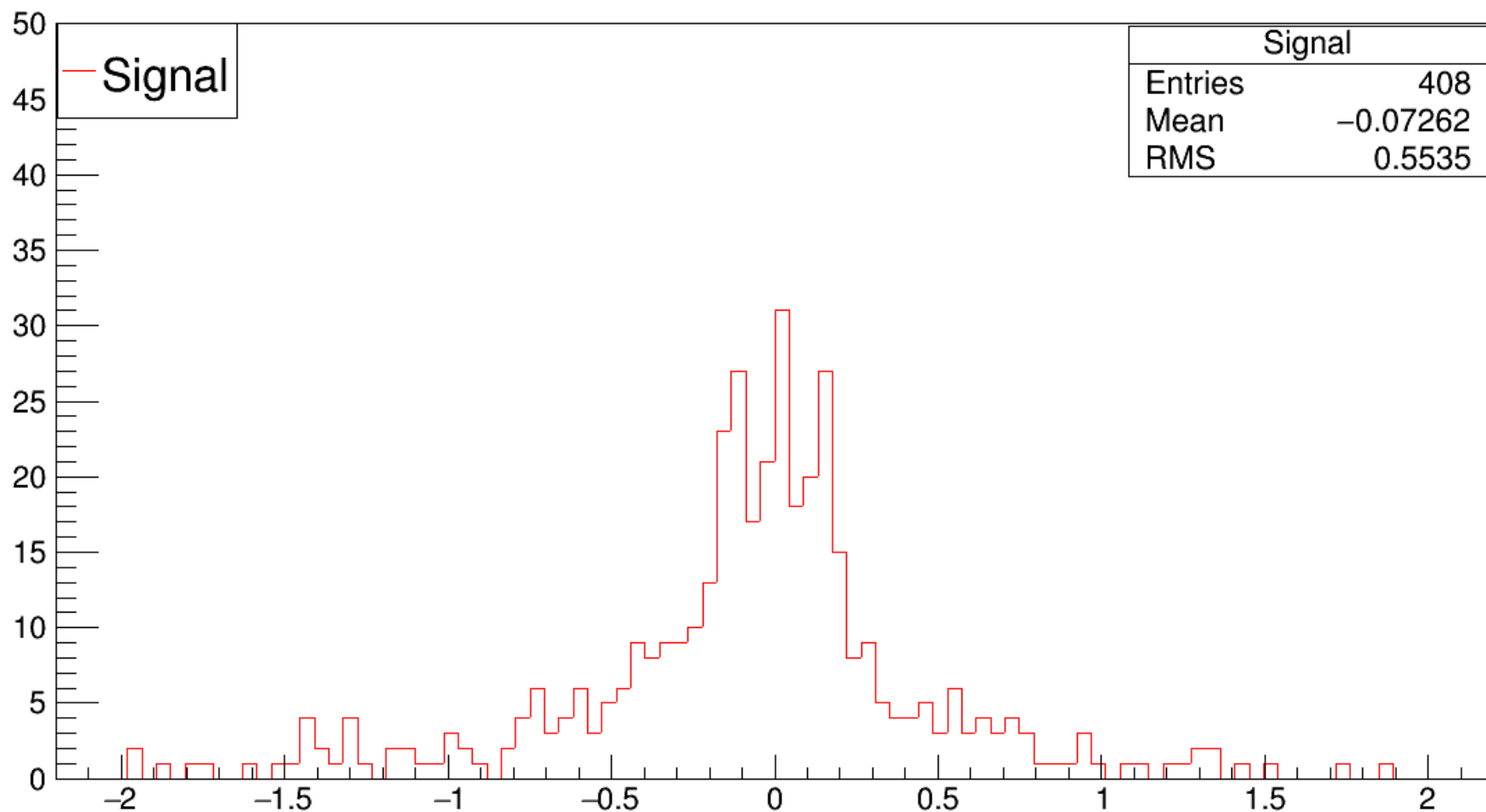
# Cuts used at root level

- $\text{abs}(m_D - 1.865) < 0.015$  (different for each plot)
- Rank 1
- $n\text{Lepton} == 2$
- $m_{K\pi} > 2$
- $\text{best}(\text{Cos}\theta_{\text{tag}} + \text{Cos}\theta_{\text{sig}}) < 2$

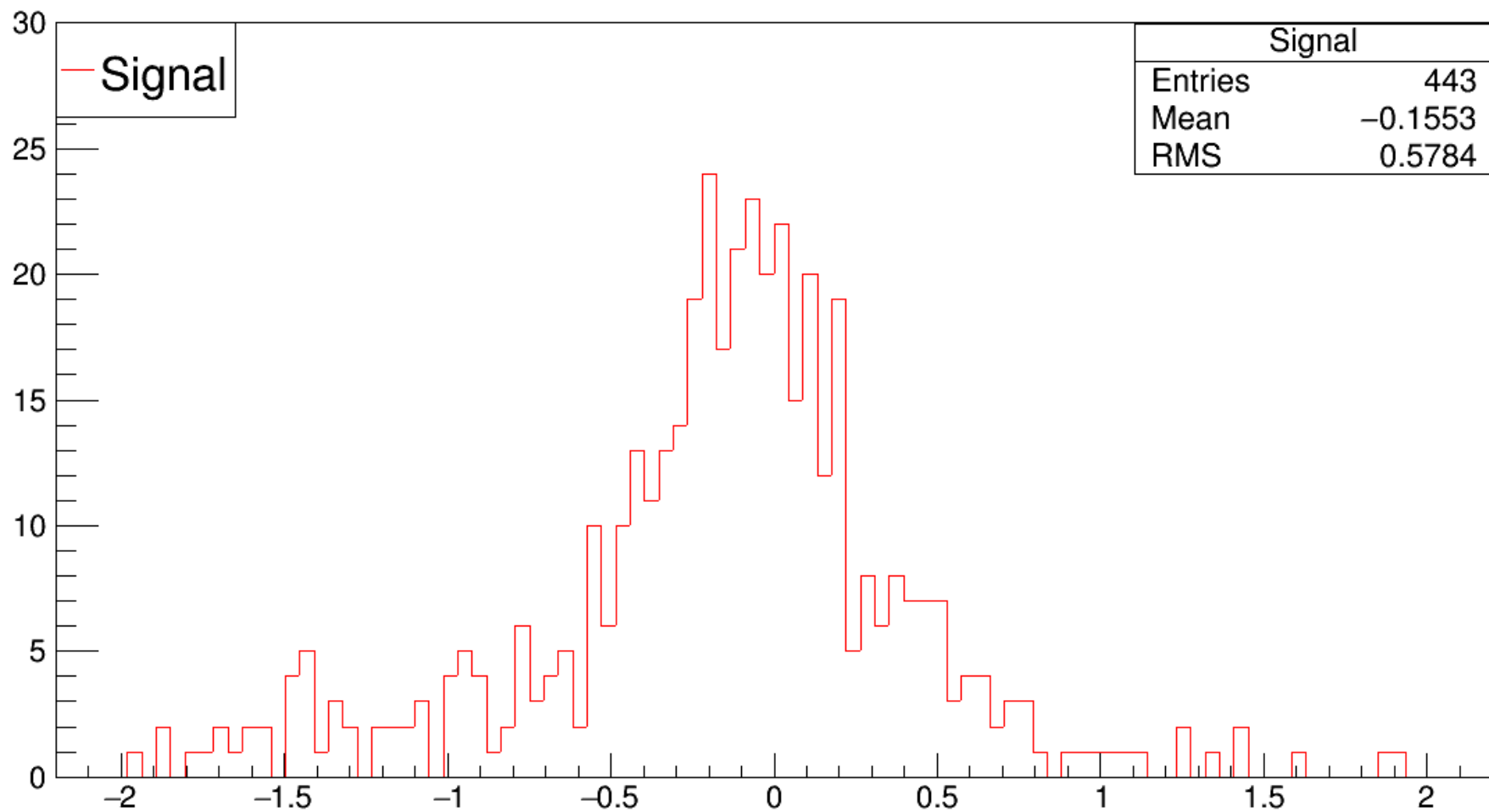
Best(Cos\_tag+Cos\_sig) for D[abs(m\_D-1.865)<0.015] Sig. MC



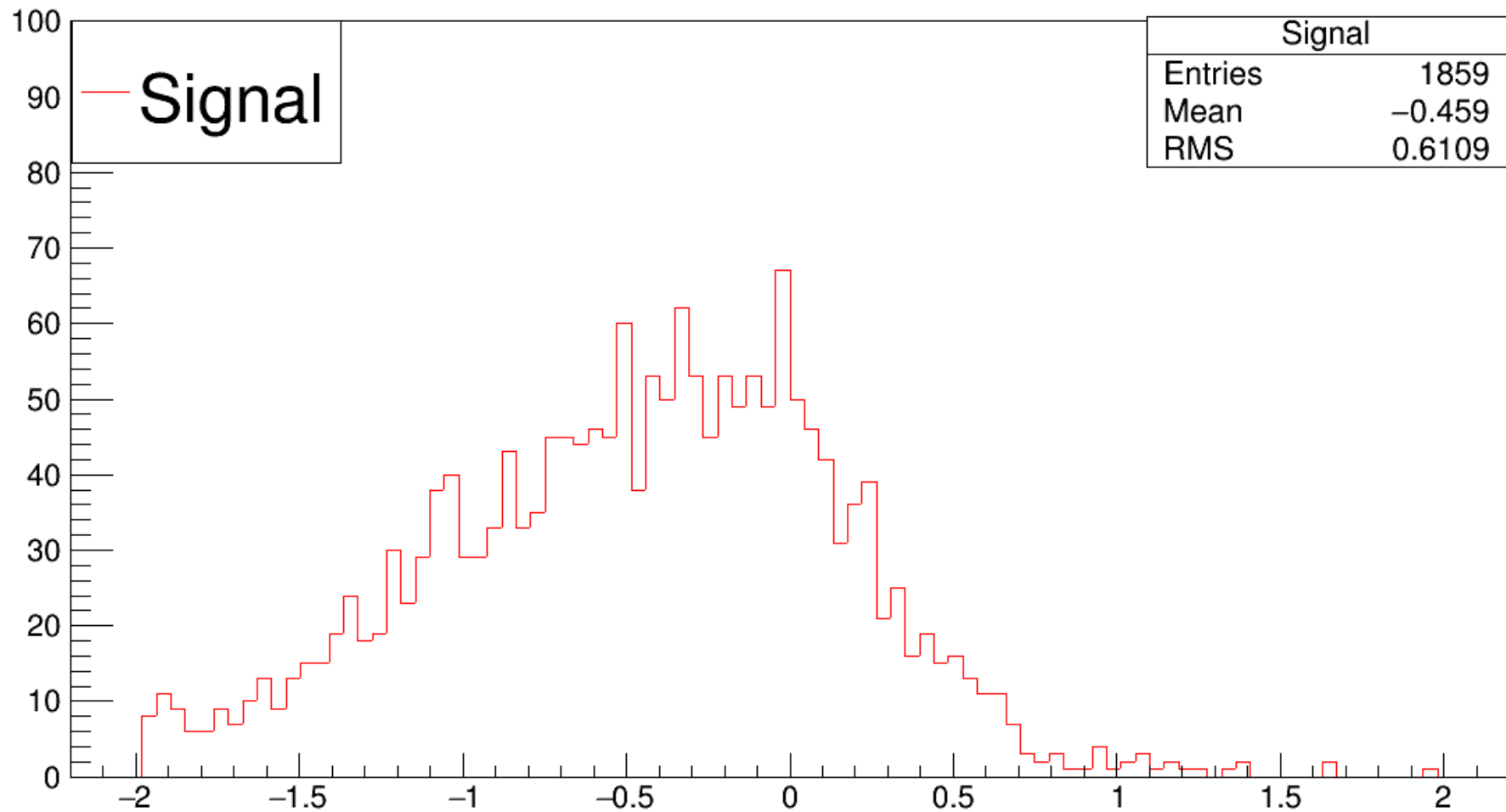
Best(Cos\_tag+Cos\_sig) around D\*[abs(m\_D-2.006)<0.03] Sig. MC



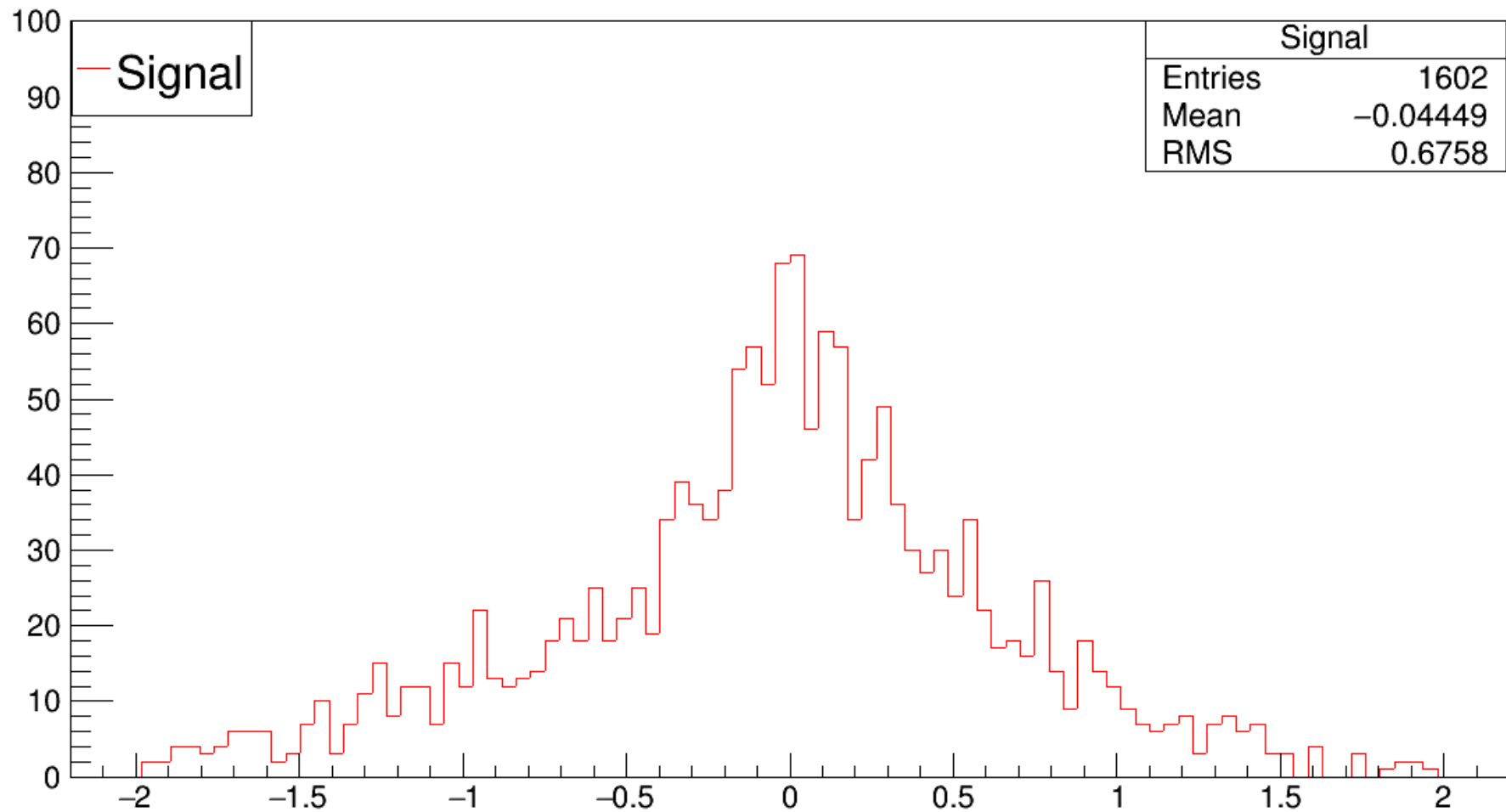
Best(Cos\_tag+Cos\_sig) between D and D\*[abs(m\_D-1.96)<0.03] Sig. MC



# Best(Cos\_tag+Cos\_sig) below D [ $m_D < 1.86$ ] Sig. MC

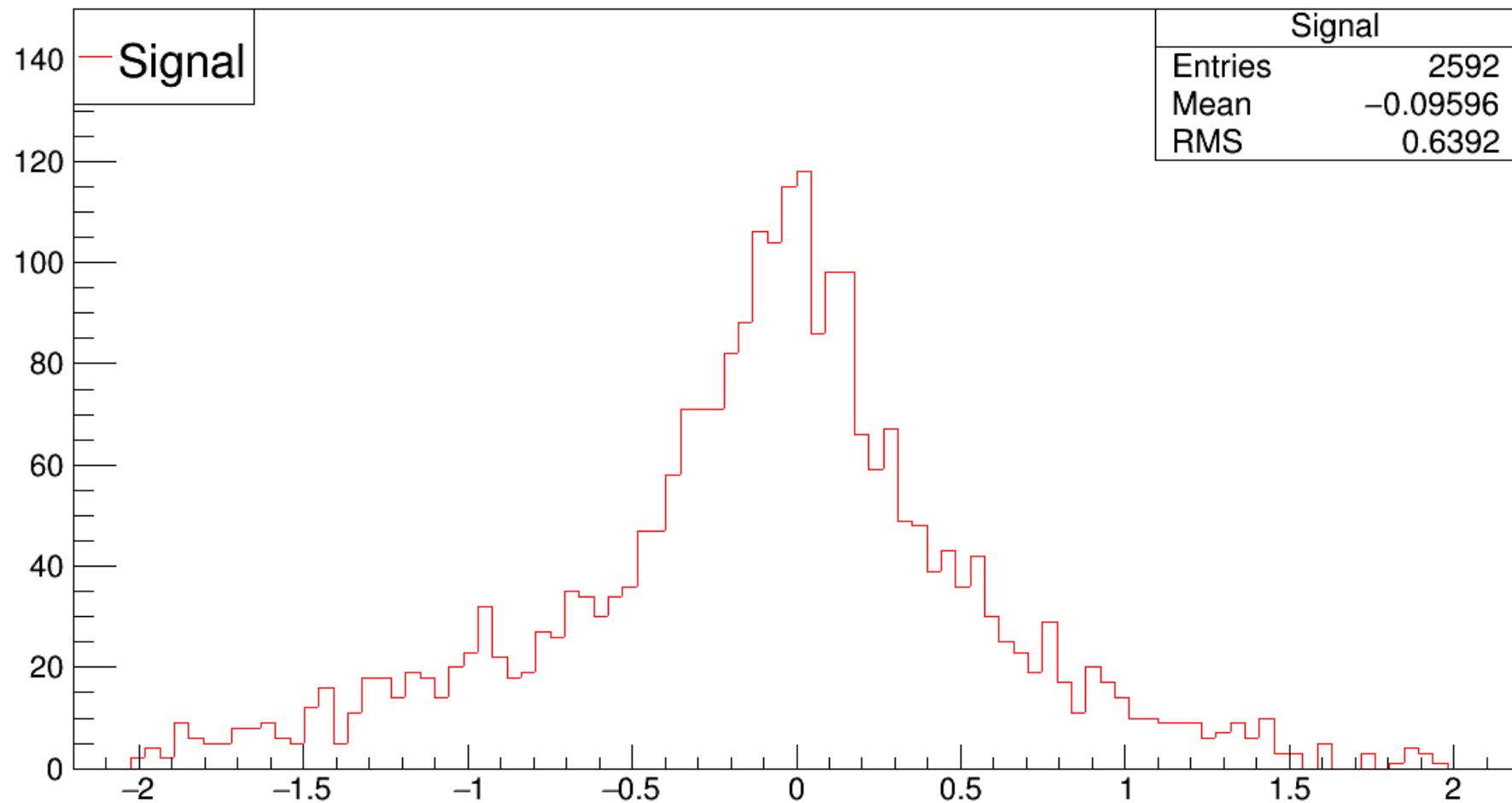


# Best(Cos\_tag+Cos\_sig) above $D^*[m_D > 2.006]$ Sig. MC

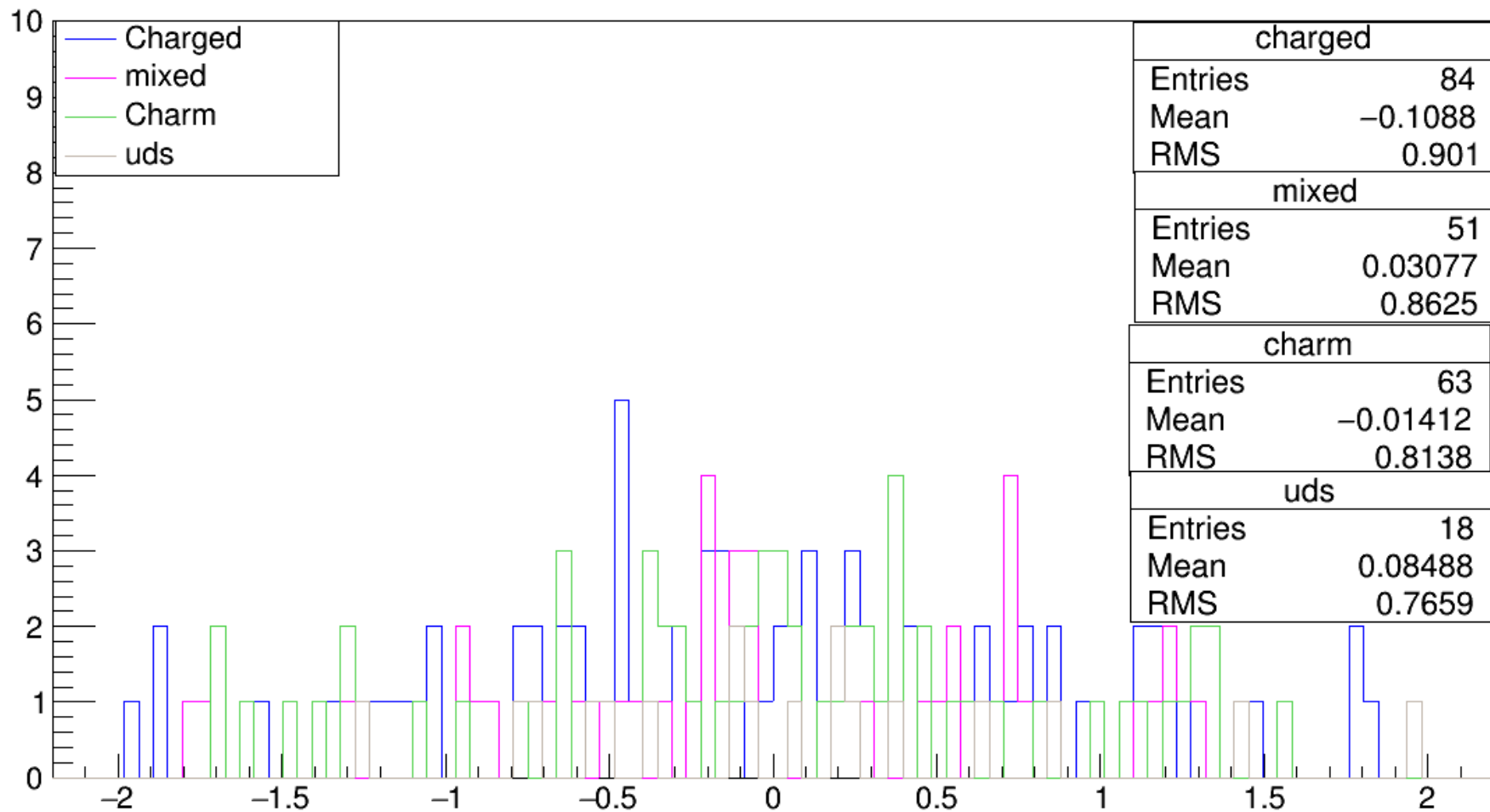




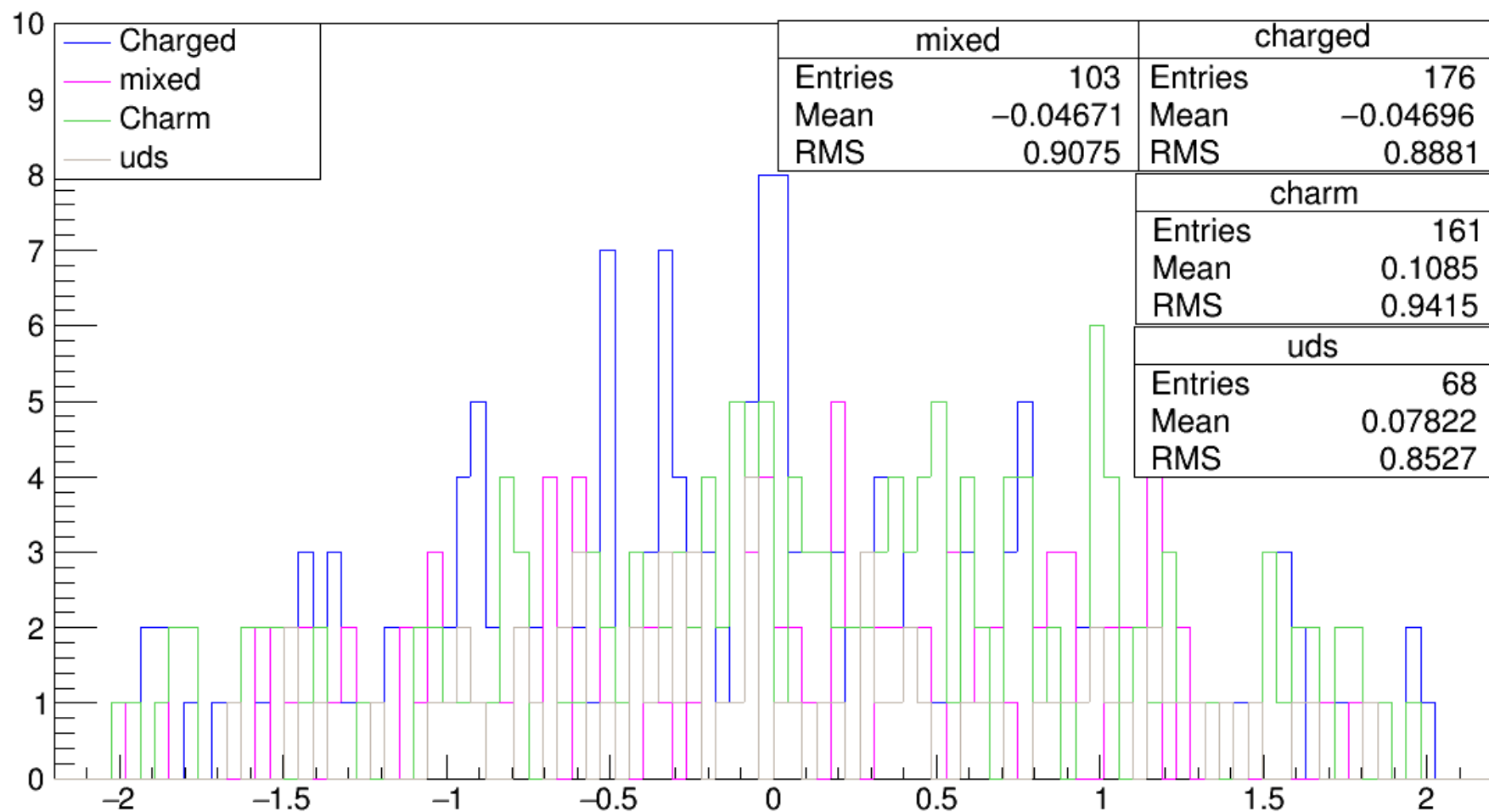
Best(Cos\_tag+Cos\_sig) above D[m\_D-1.86>0.015] Sig. MC



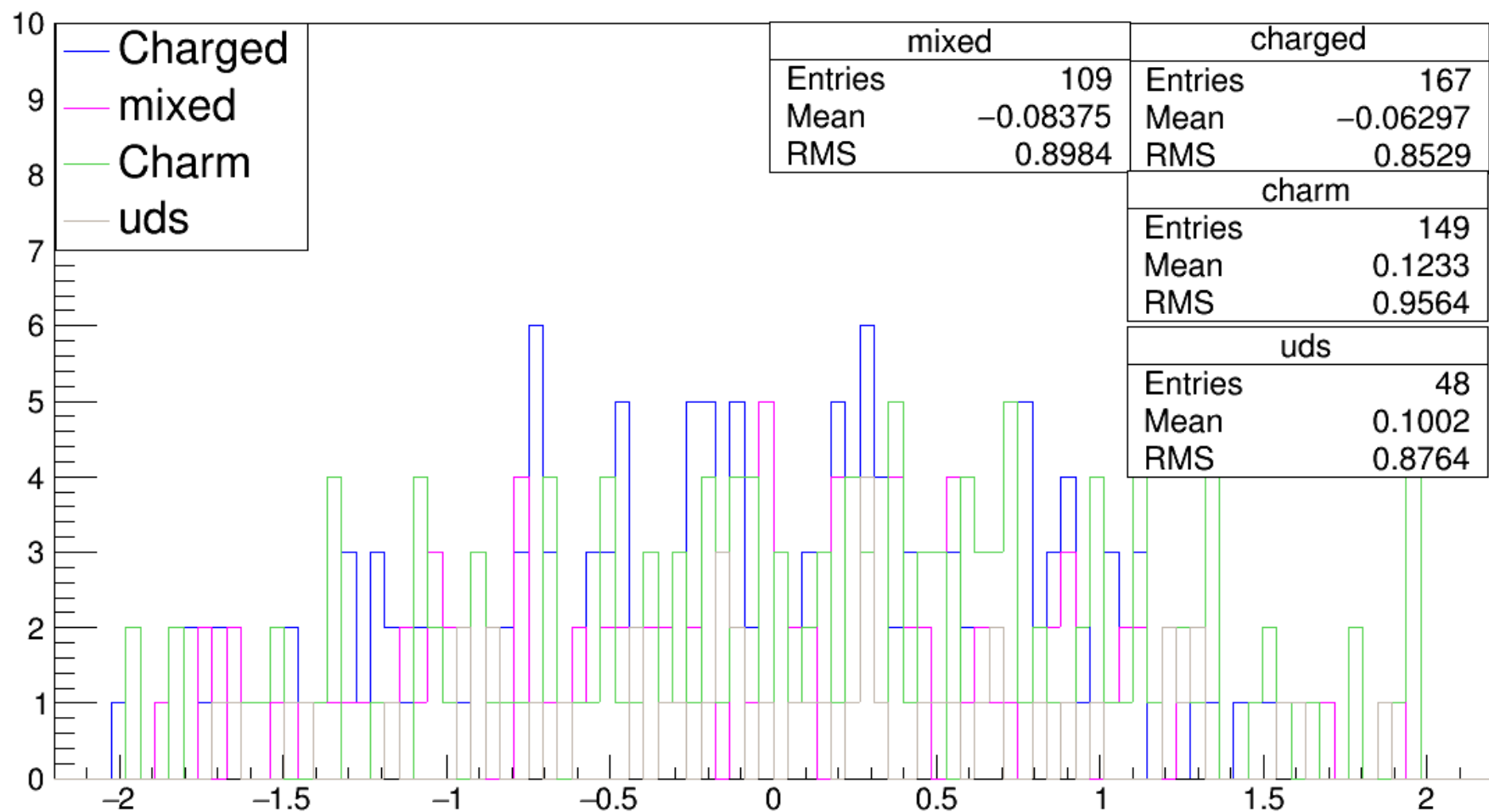
best(cos\_tag+cos\_sig) around D[abs(m\_D-1.86)<0.015] generic MC



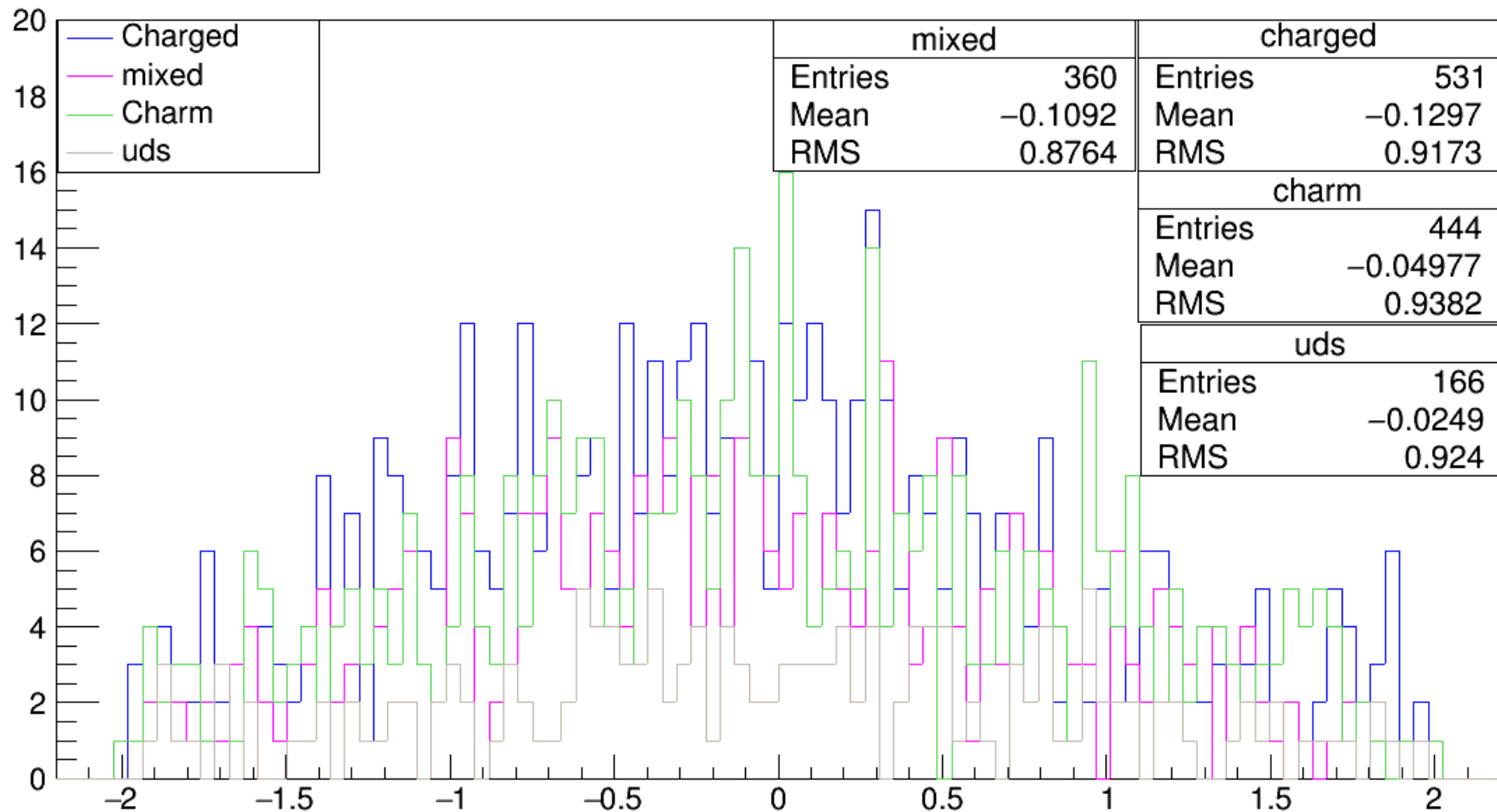
best(cos\_tag+cos\_sig) for D\*[abs(m\_D-2.006)<0.03] generic MC



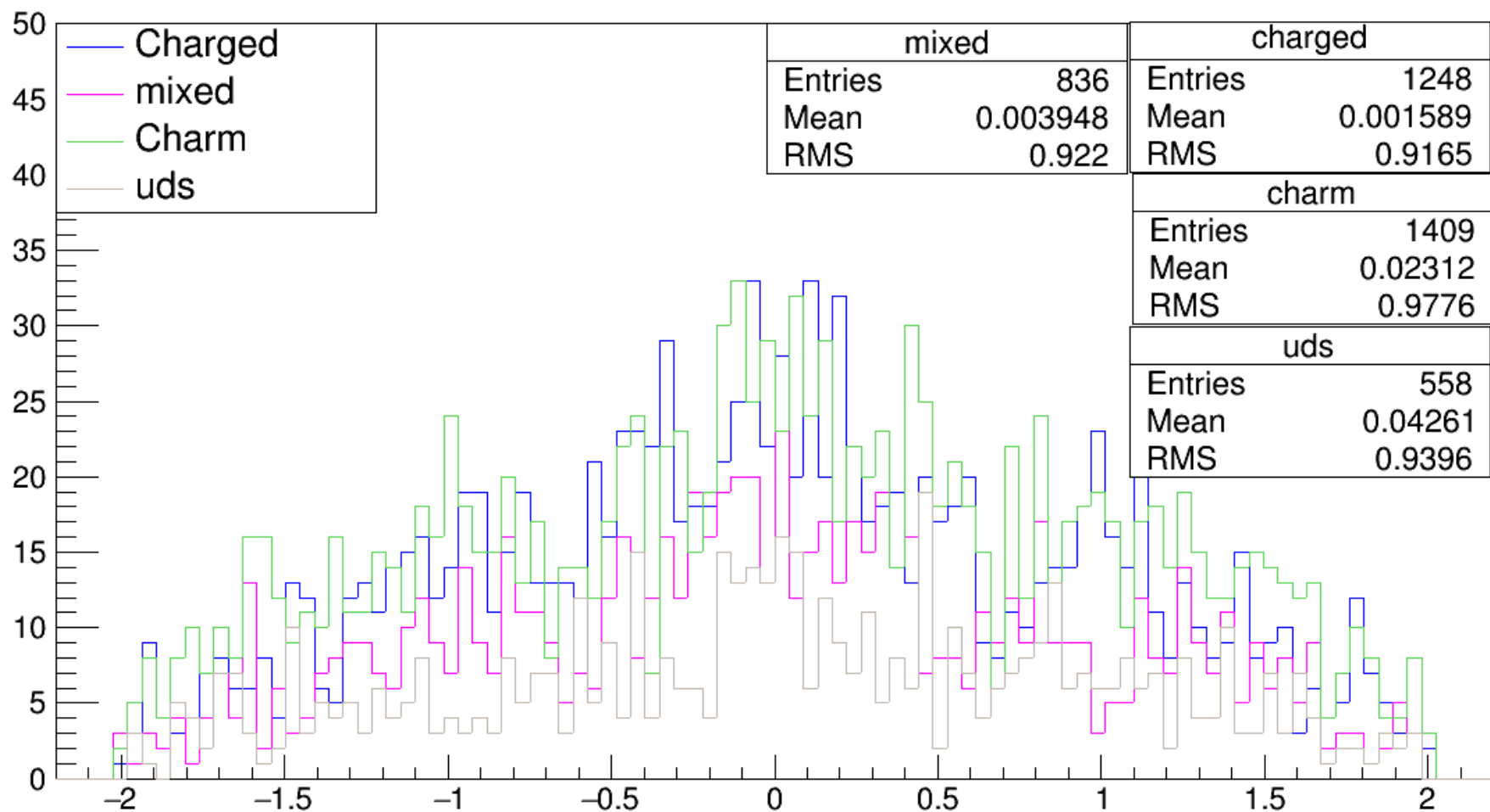
best(cos\_tag+cos\_sig) between D and D\*[abs(m\_D-1.96)<0.03] generic MC



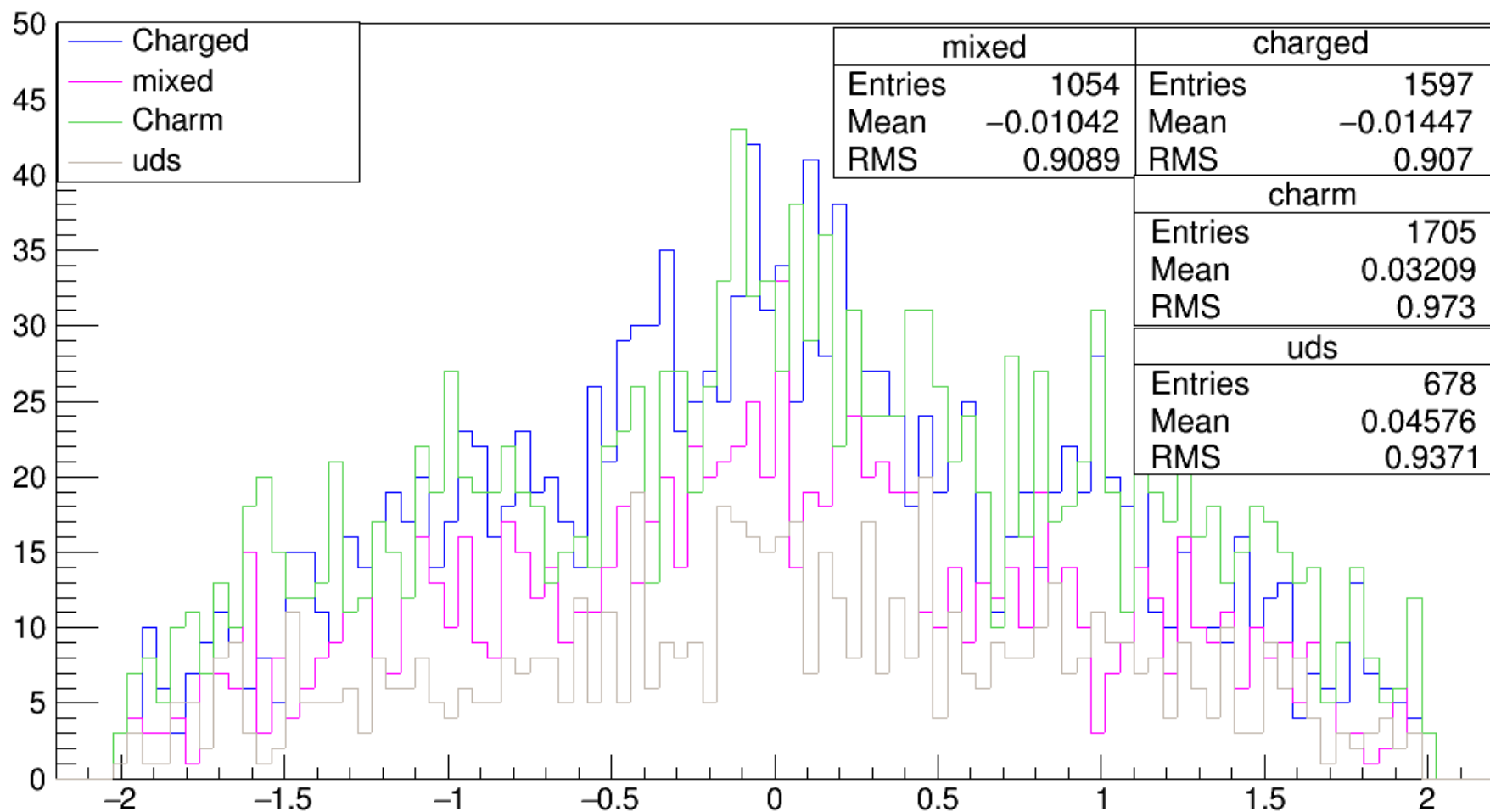
best(cos\_tag+cos\_sig) below D[m\_D<1.86] generic MC



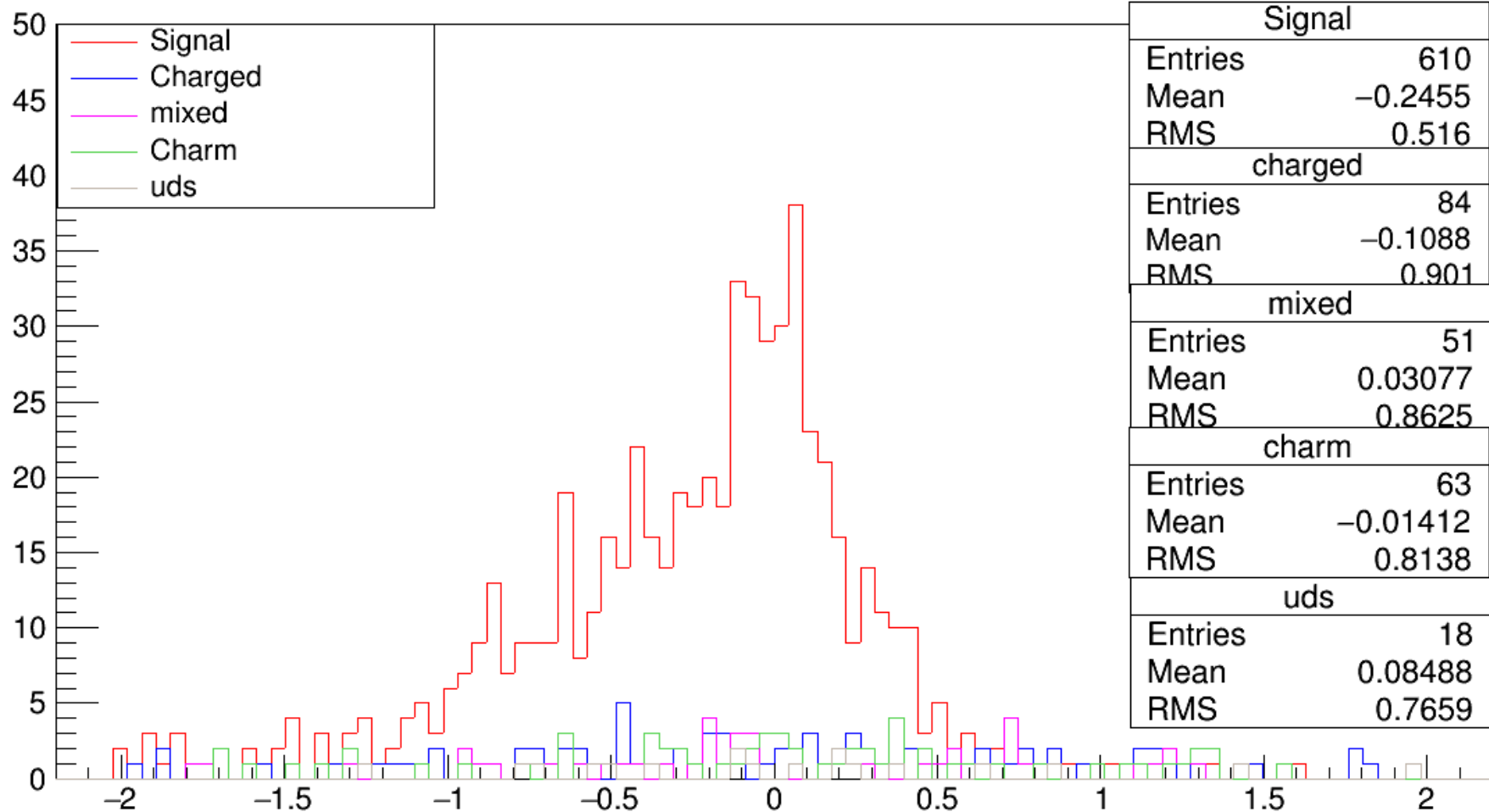
best(cos\_tag+cos\_sig) above  $D^*[m_{D^*} > 2.006]$  generic MC



best(cos\_tag+cos\_sig) above D[m\_D-1.865>0.015] generic MC

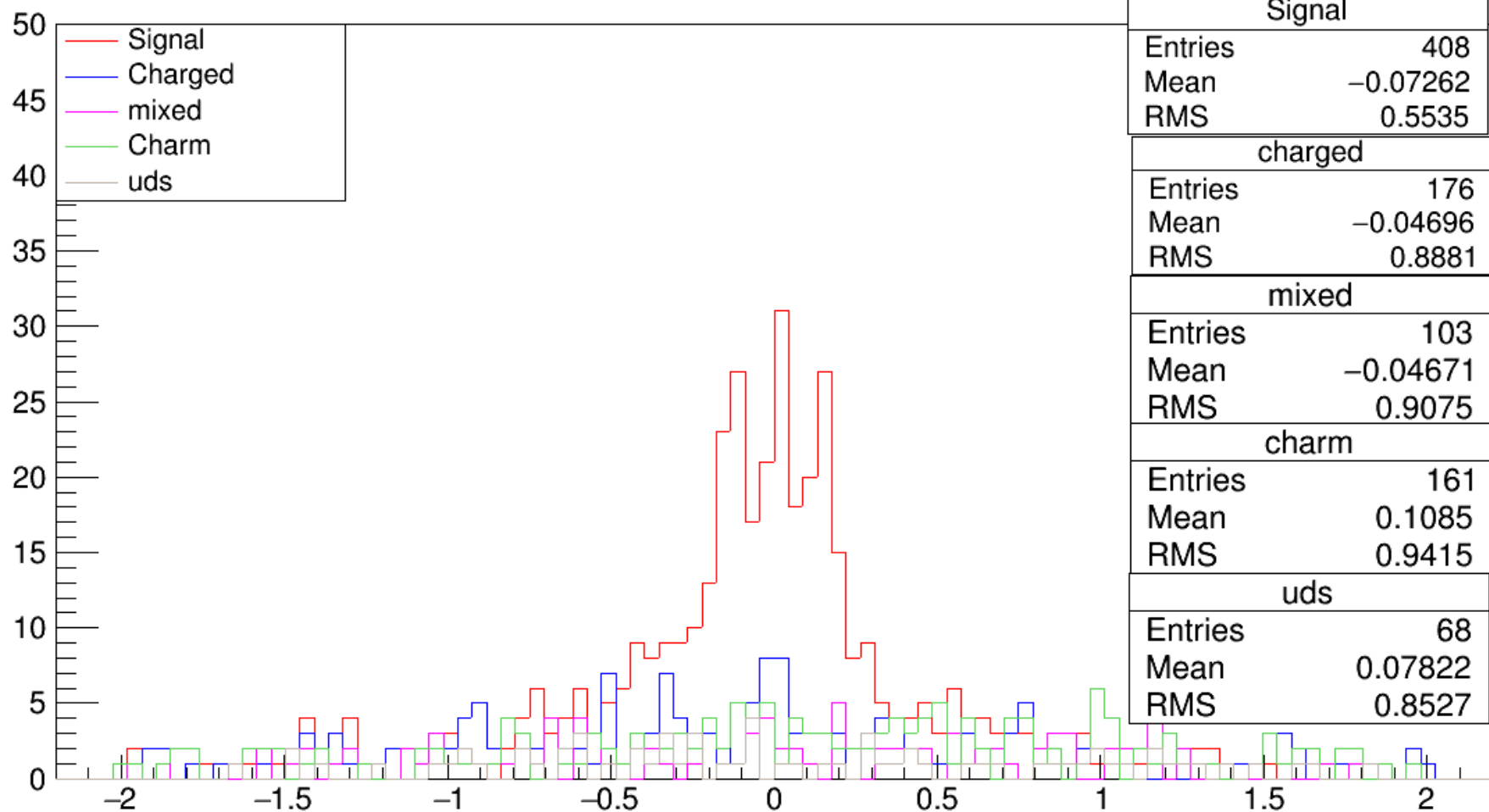


best(cos\_tag+cos\_sig) around  $D[abs(m_D-1.865)<0.015]$  both sig and generic MC

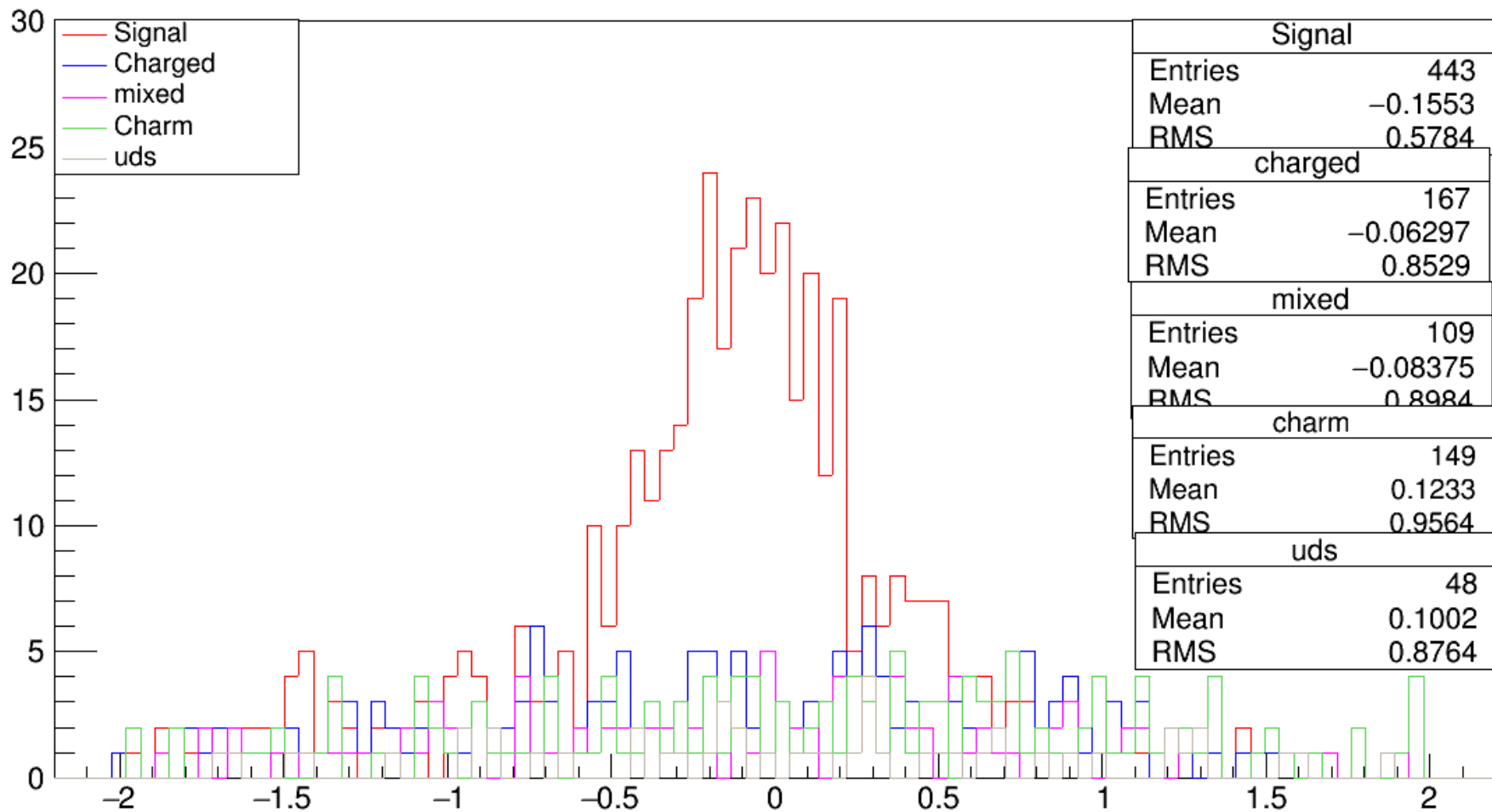




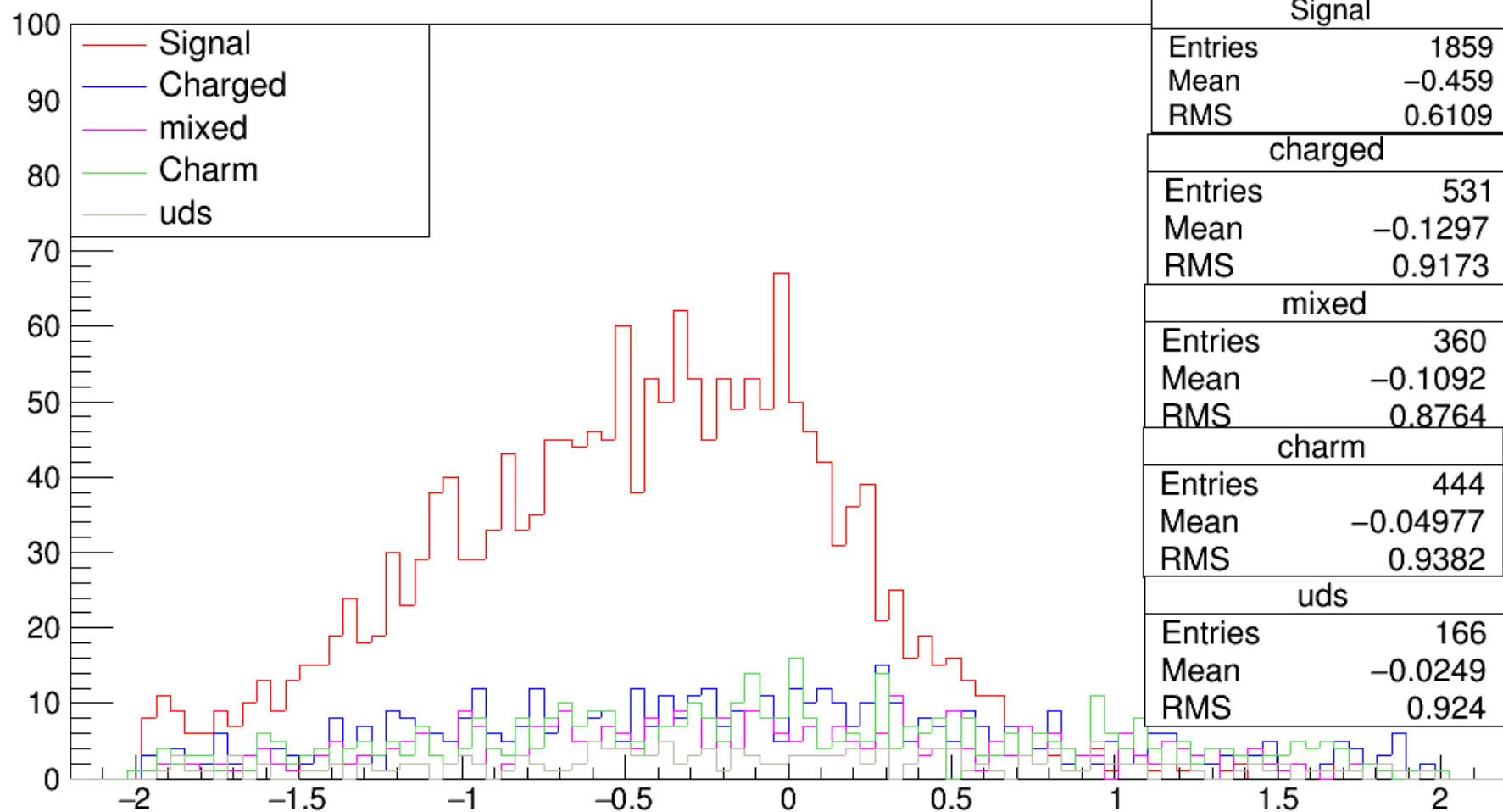
best(cos\_tag+cos\_sig) around D\*[abs(m\_D-2.006)<0.03] both sig and generic MC



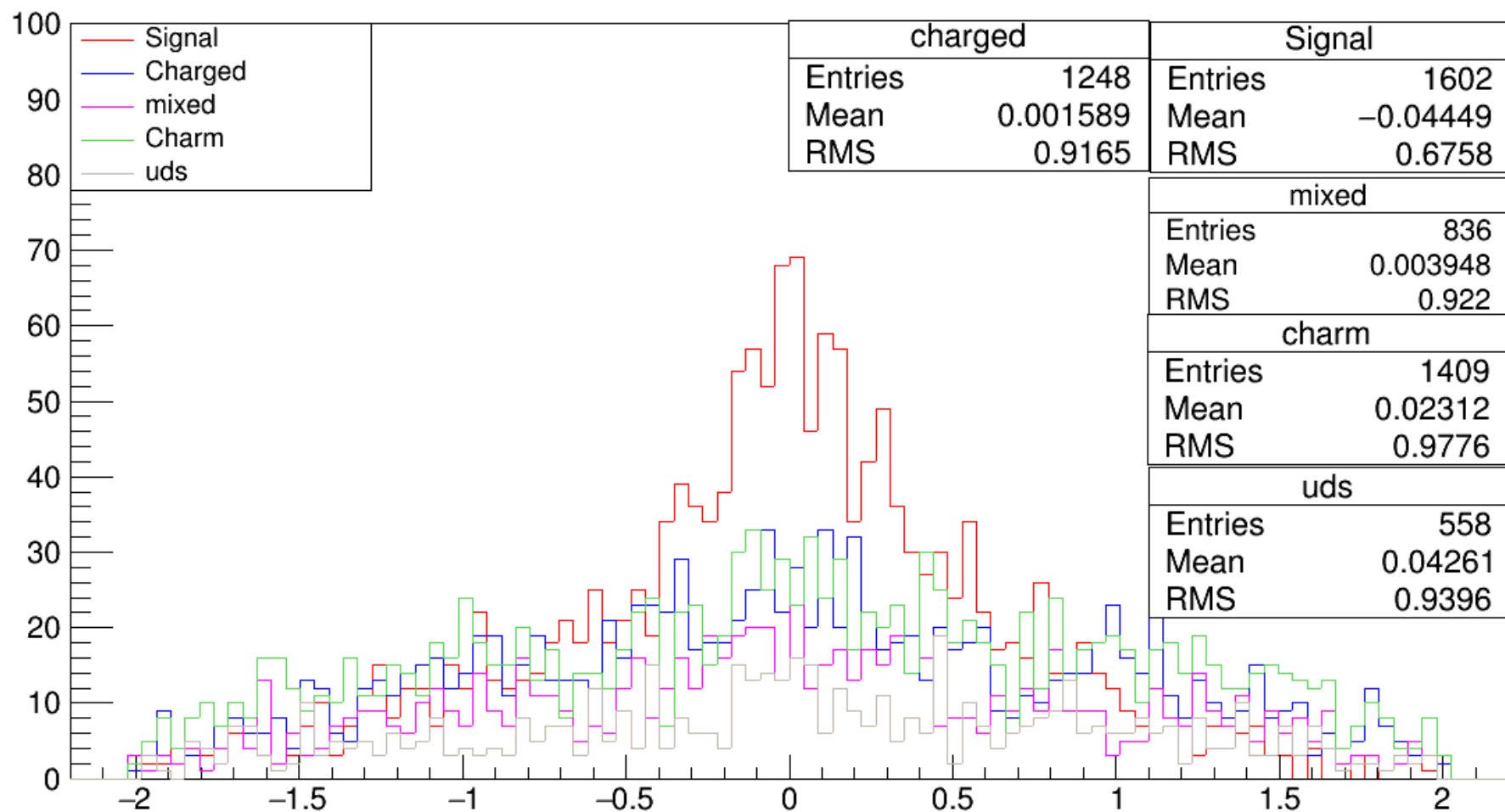
best(cos\_tag+cos\_sig) between D and D\*[abs(m\_D-1.96)<0.03] both sig and generic MC



best(cos\_tag+cos\_sig) below D[m\_D<1.86] both sig and generic MC



best(cos\_tag+cos\_sig) above  $D^*[m_{D^*} > 2.006]$  both sig and generic MC



best(cos\_tag+cos\_sig) above  $D[m_D-1.865 > 0.015]$  both sig and generic MC

