

Generic MC update with new photon cuts

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

1.0 M signal events
3 Streams of generic MC

08 Nov. 2023

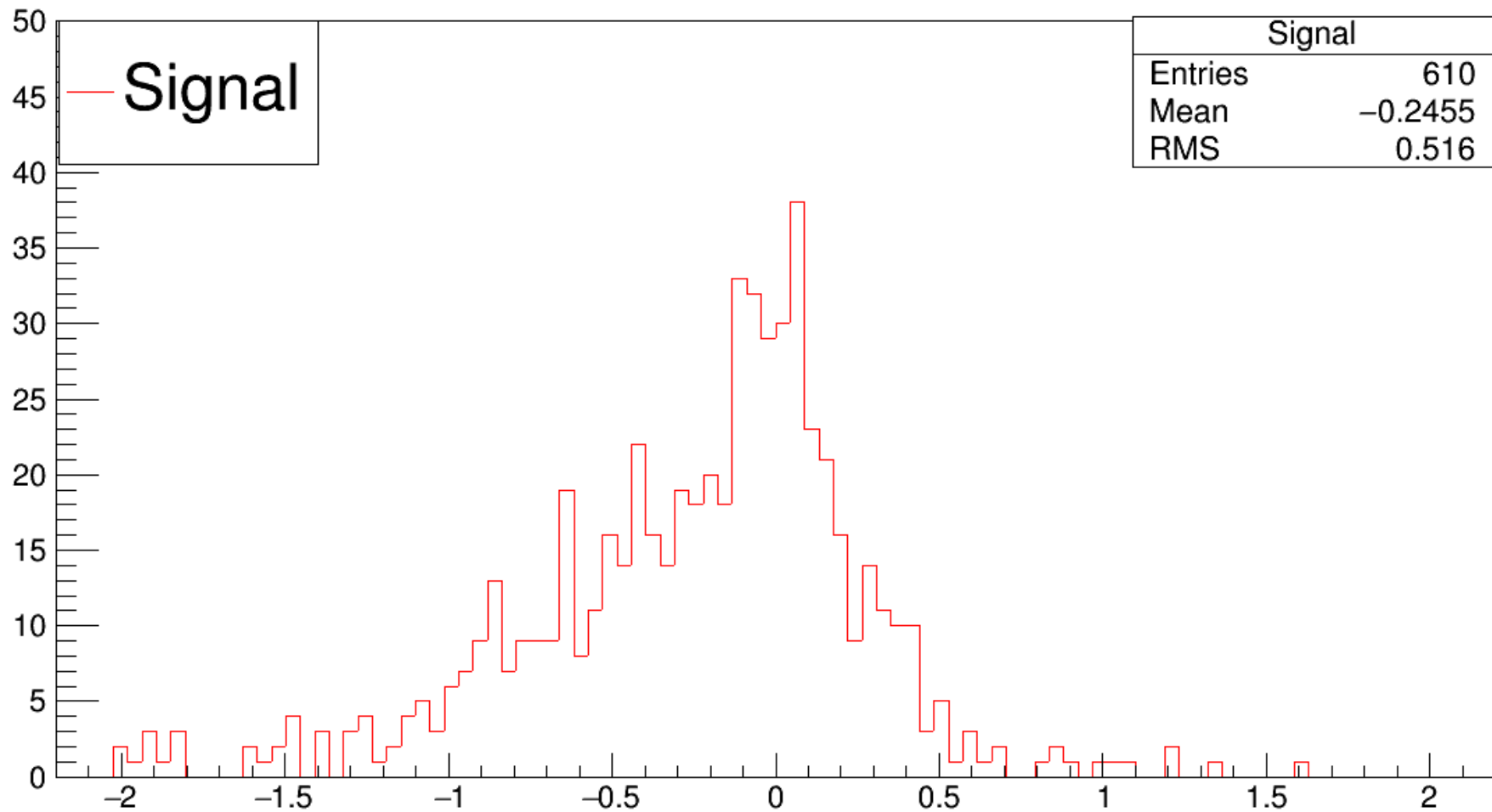
Cuts used in the reco. program

- $\text{abs}(\sin_{\text{phi}}) < 1.5$
- $\text{abs}(m_{\text{lpi}} - 3.1) > 0.015$
- $m_{\text{Kpi}} > 0.7$
- $\text{abs}(\cos(P_{\text{Btag}}, P_{\text{vis}})) < 2$
- $1.6 < m_{\text{D}} < 2.4$

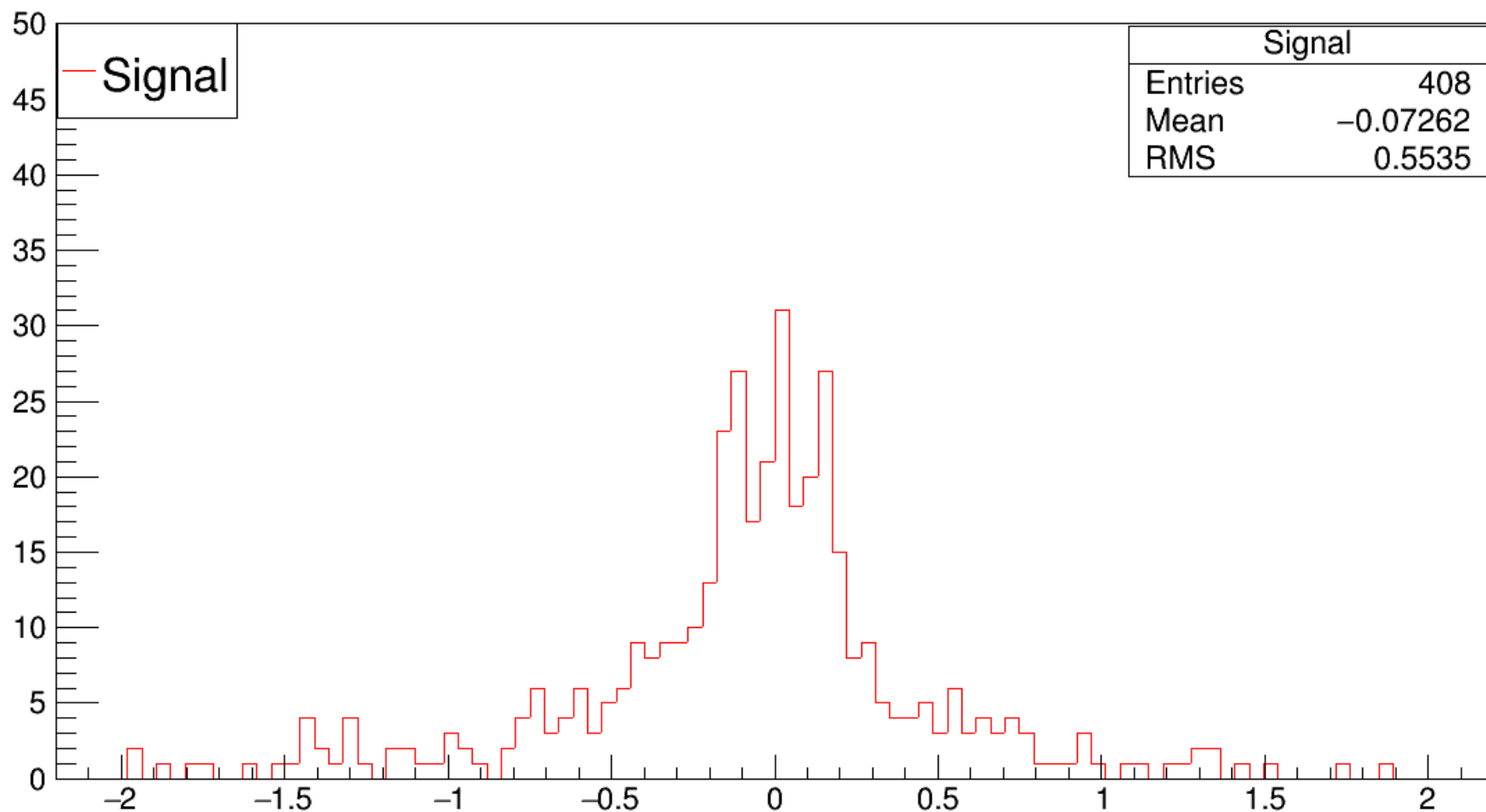
Cuts used at root level

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

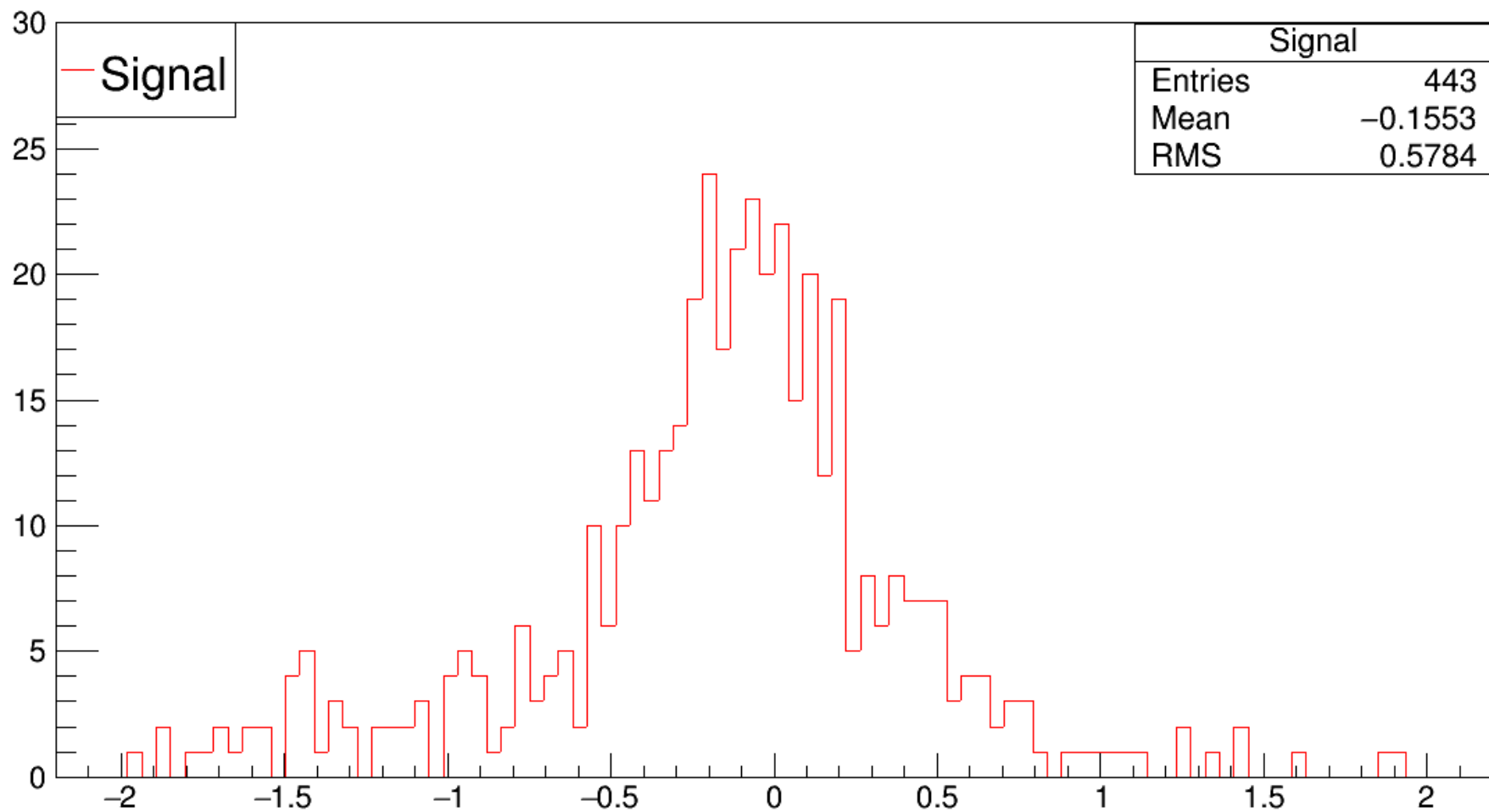
Best(Cos_tag+Cos_sig) for D[abs(m_D-1.865)<0.015] Sig. MC



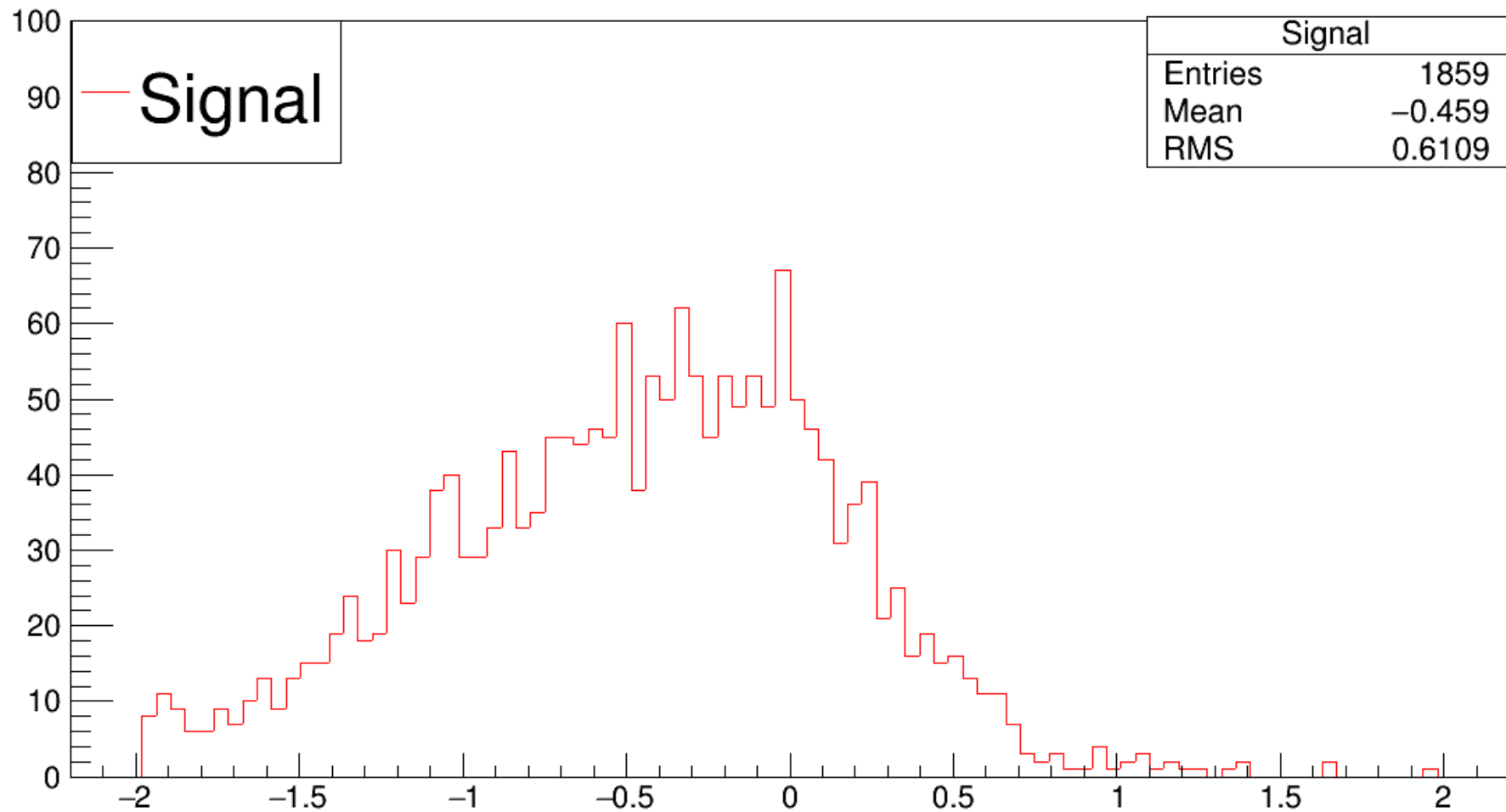
Best(Cos_tag+Cos_sig) around D*[abs(m_D-2.006)<0.03] Sig. MC



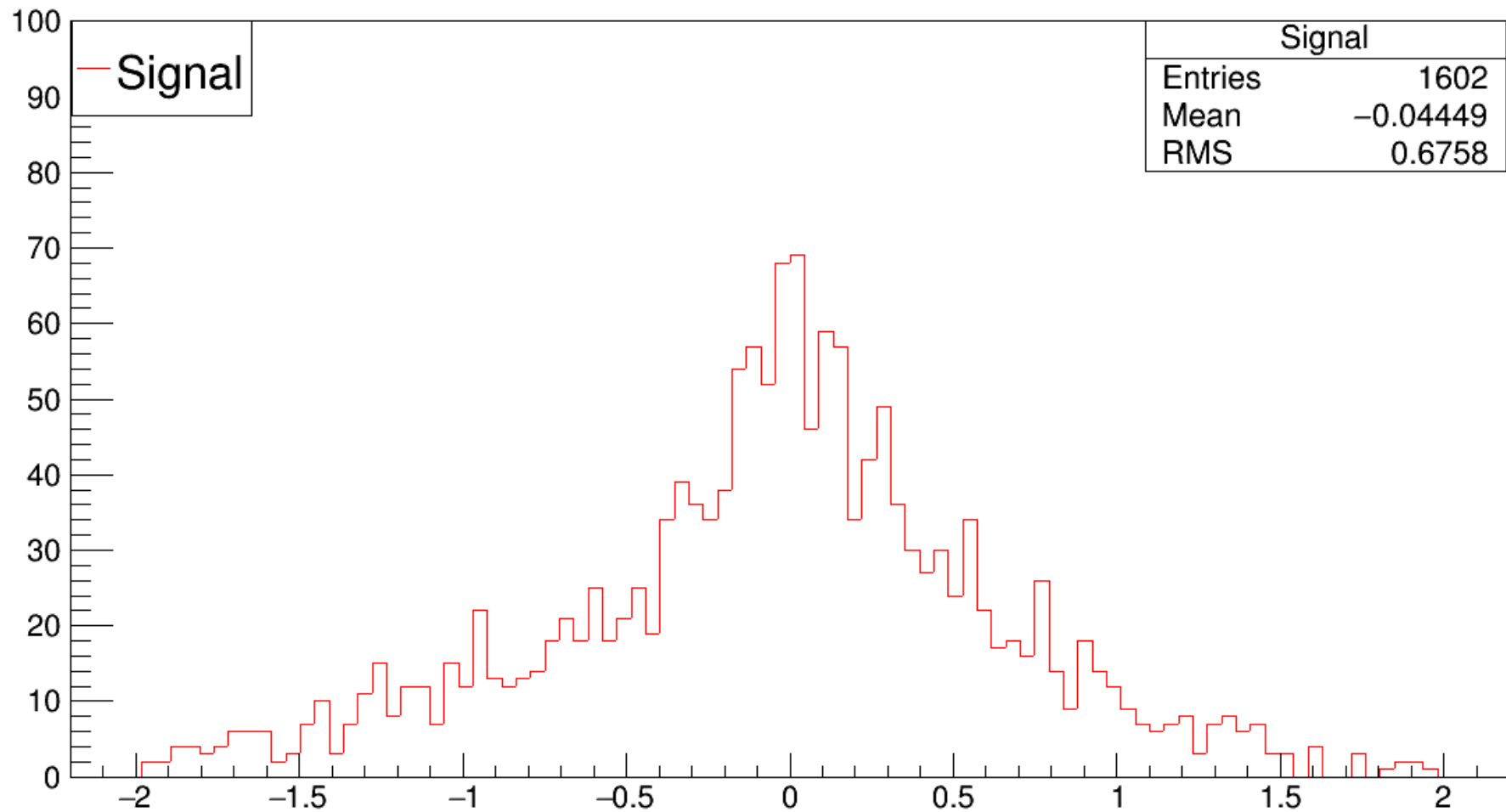
Best(Cos_tag+Cos_sig) between D and D*[abs(m_D-1.96)<0.03] Sig. MC



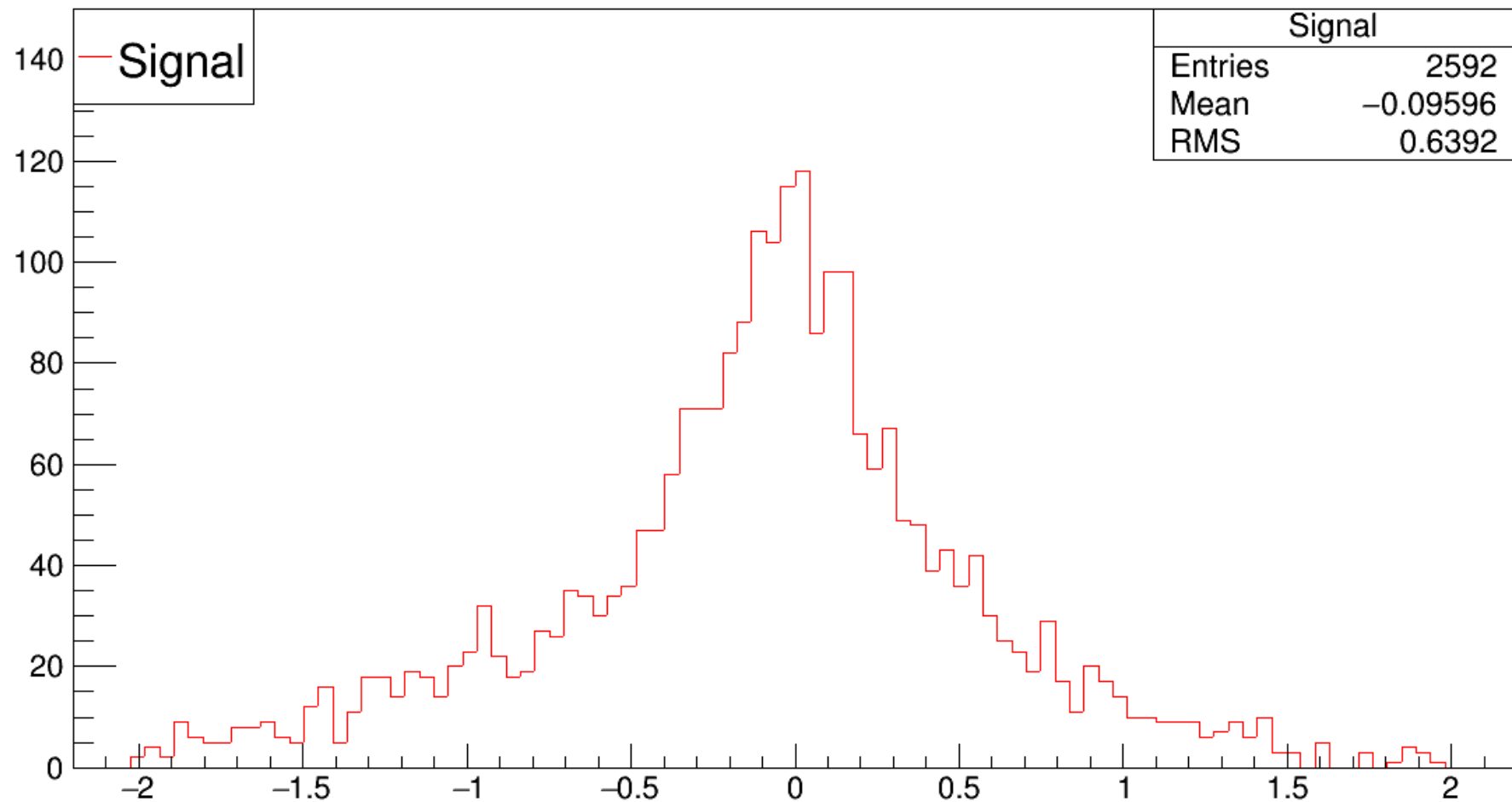
Best(Cos_tag+Cos_sig) below D [$m_D < 1.86$] Sig. MC



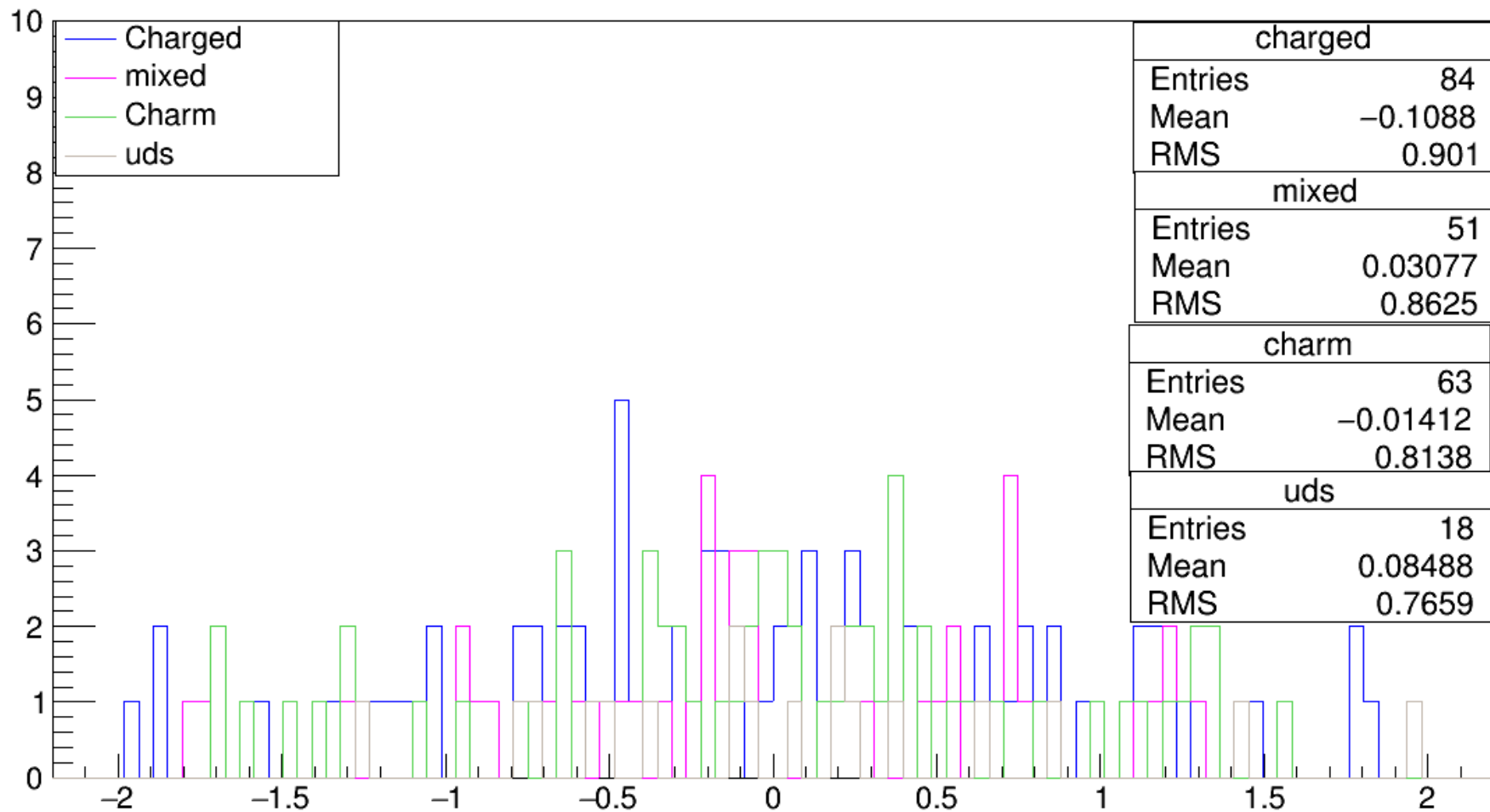
Best(Cos_tag+Cos_sig) above $D^*[m_D > 2.006]$ Sig. MC



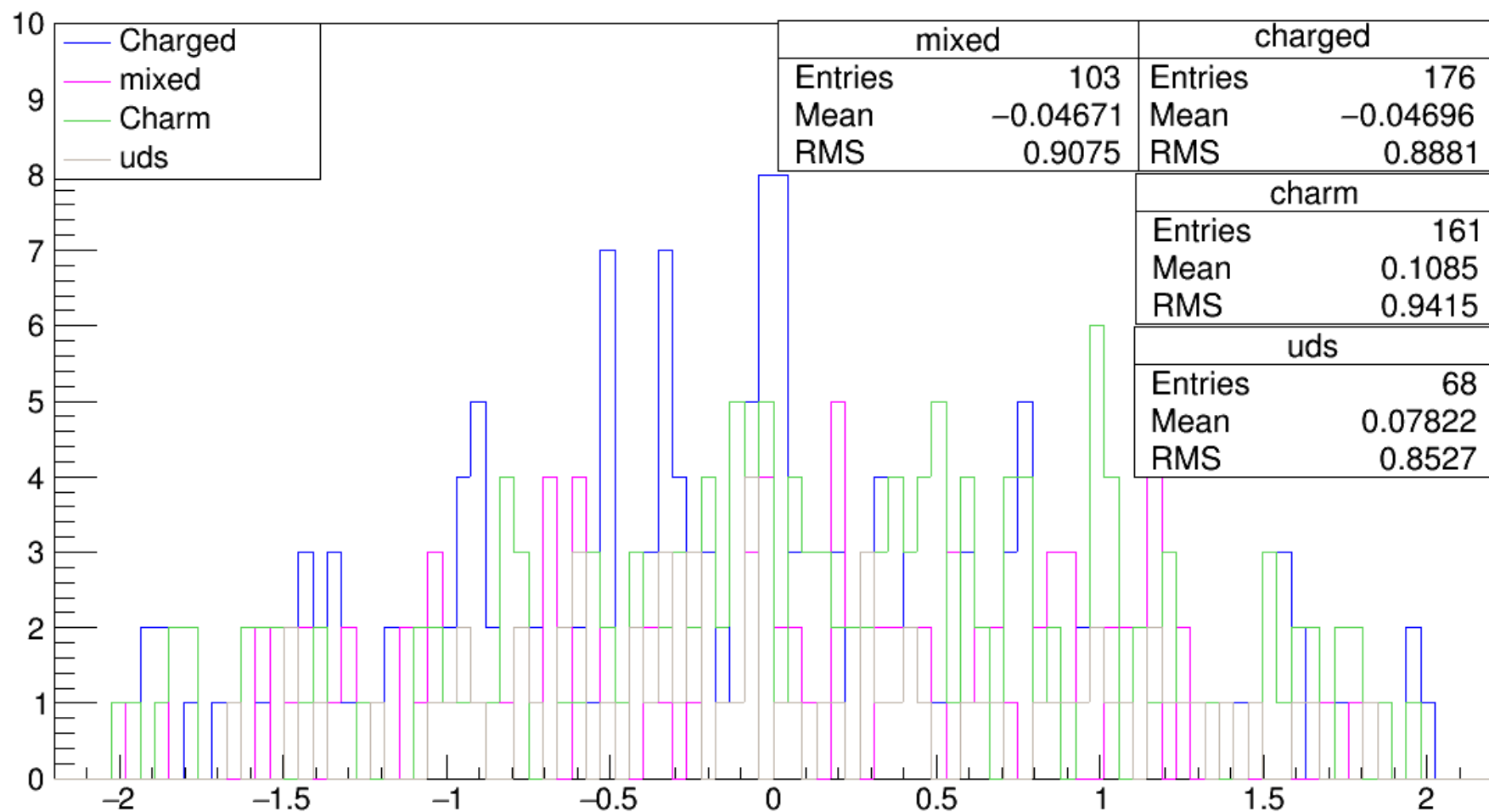
Best(Cos_tag+Cos_sig) above D[m_D-1.86>0.015] Sig. MC



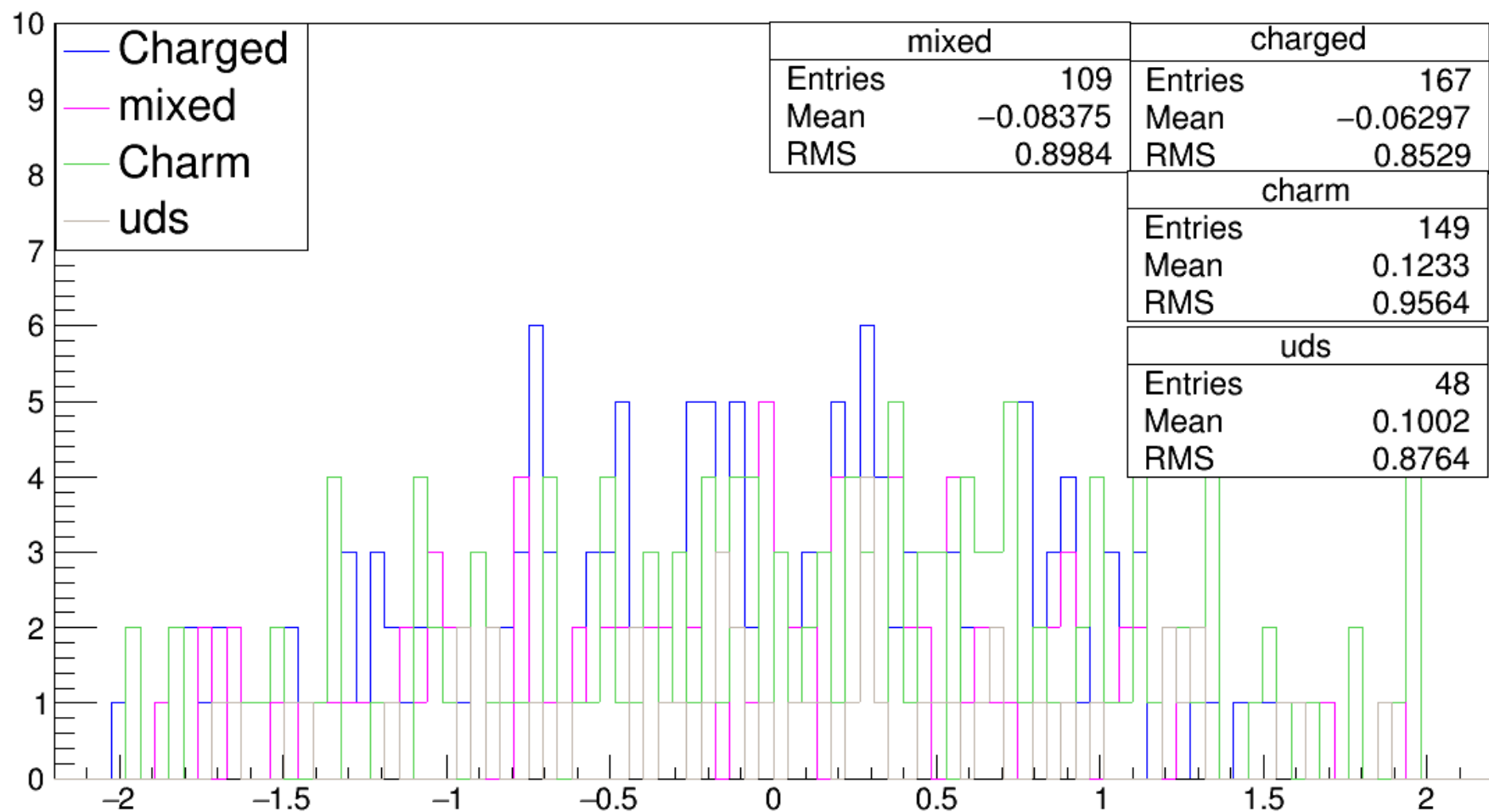
best(cos_tag+cos_sig) around D[abs(m_D-1.86)<0.015] generic MC



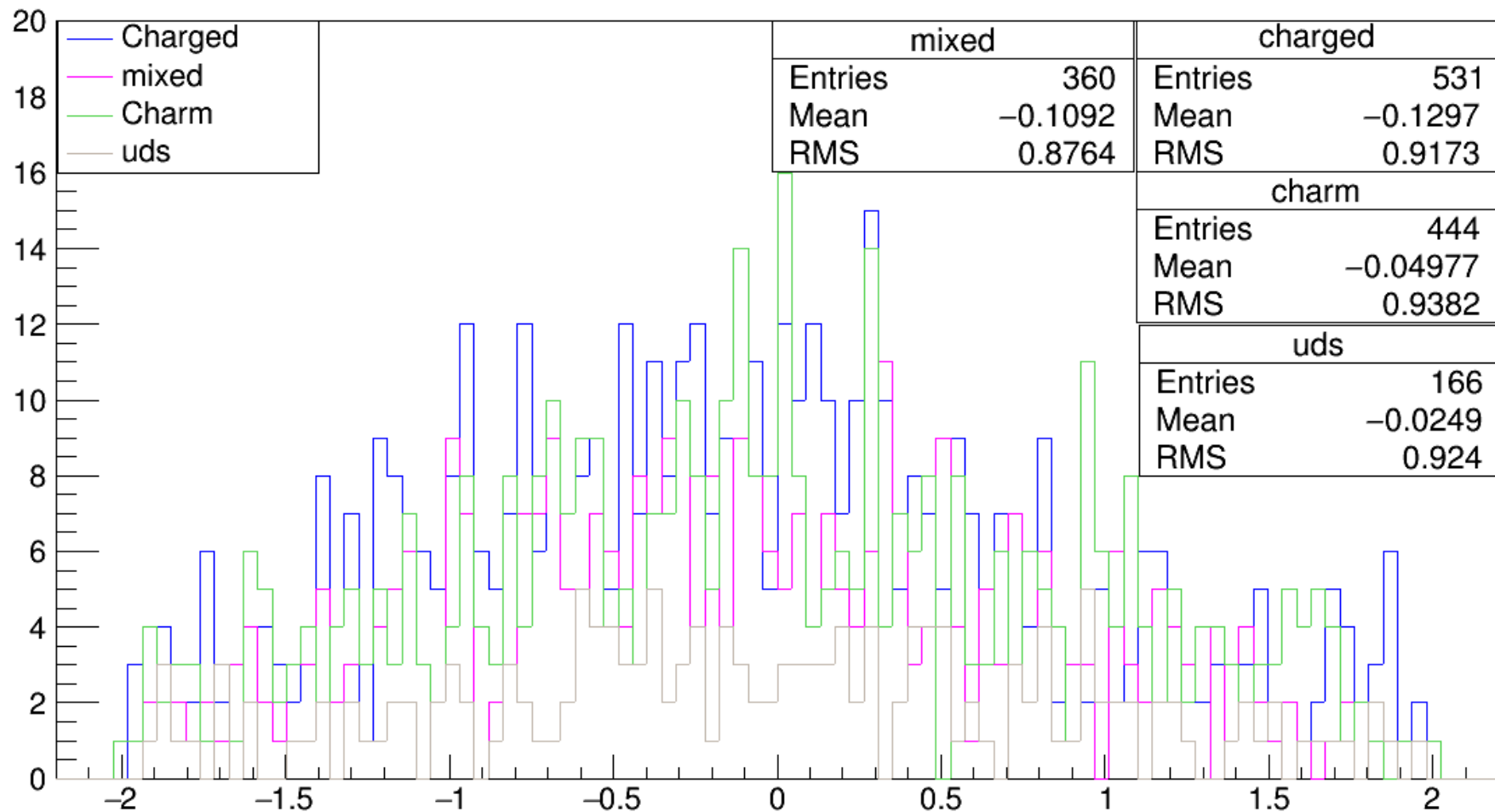
best(cos_tag+cos_sig) for D*[abs(m_D-2.006)<0.03] generic MC



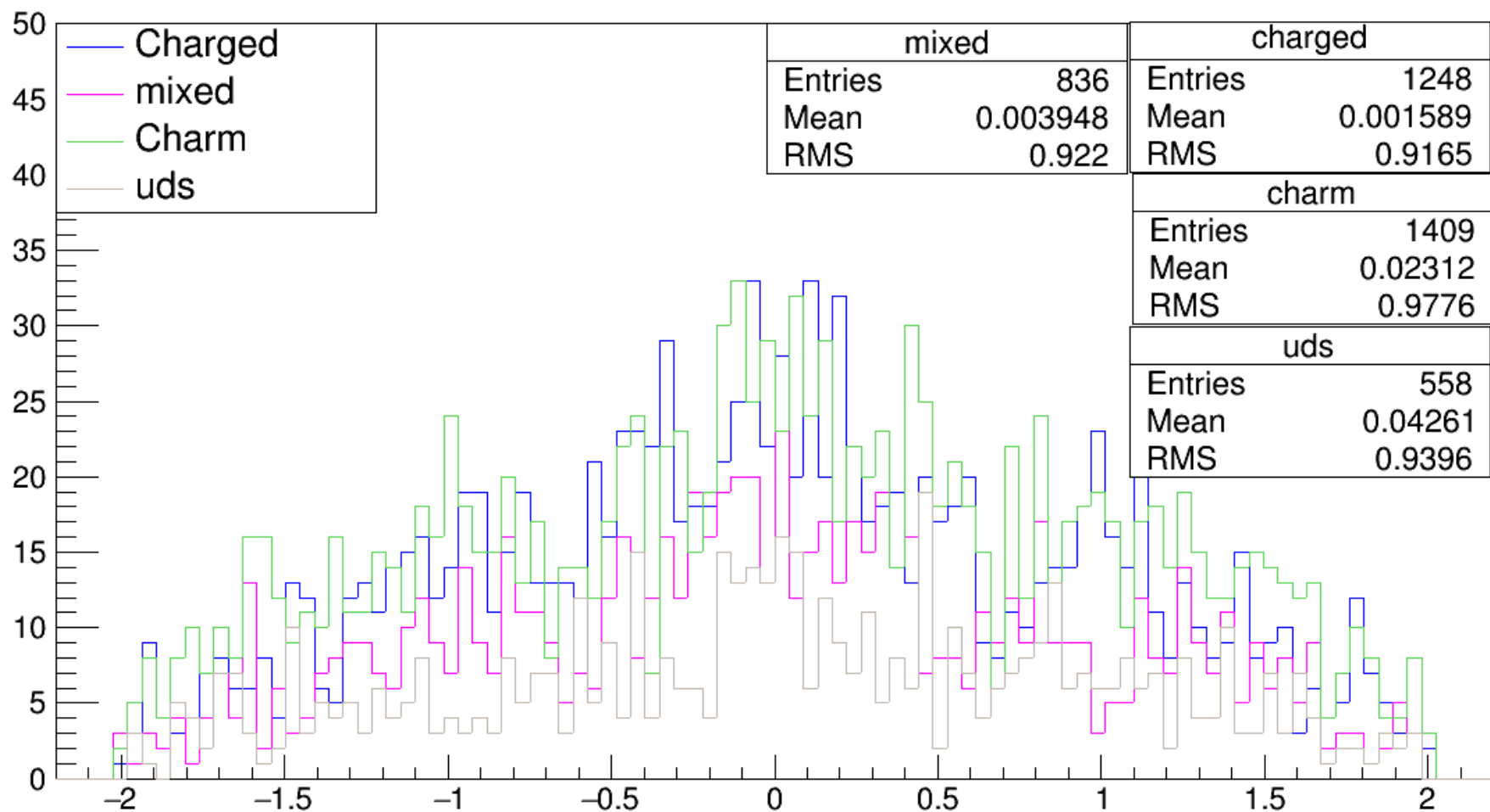
best(cos_tag+cos_sig) between D and D*[abs(m_D-1.96)<0.03] generic MC



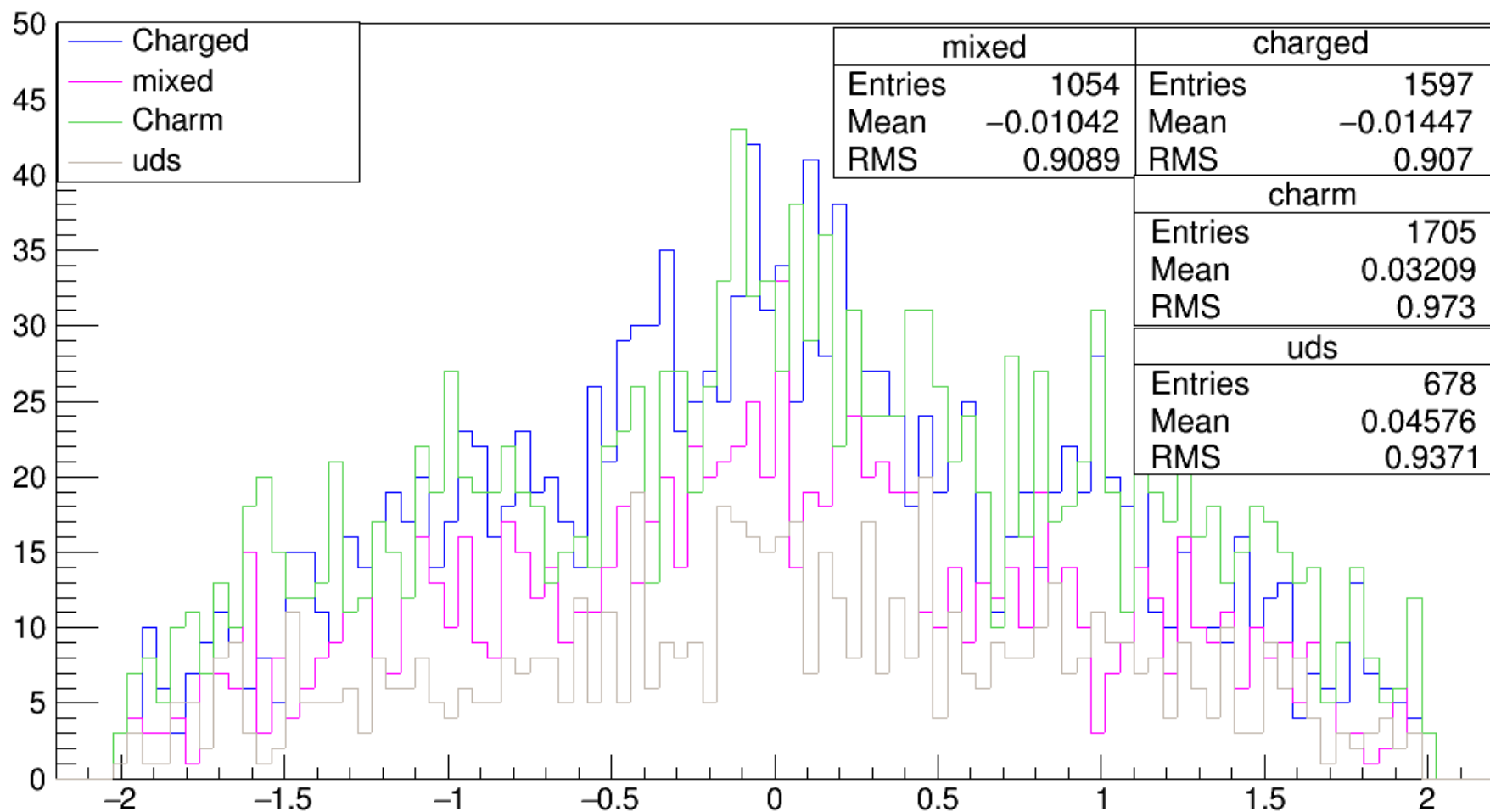
best(cos_tag+cos_sig) below D[m_D<1.86] generic MC



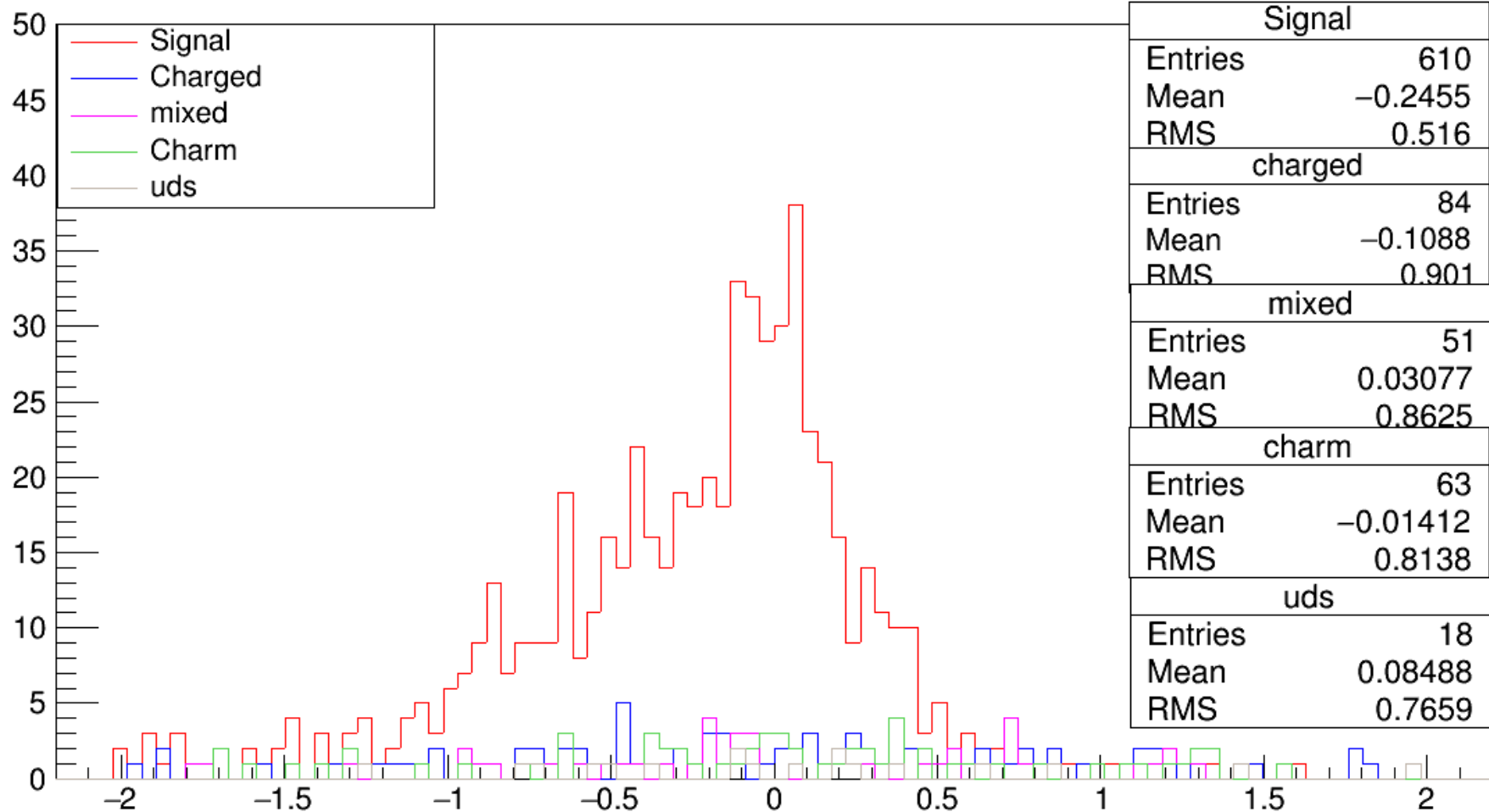
best(cos_tag+cos_sig) above $D^*[m_{D^*} > 2.006]$ generic MC



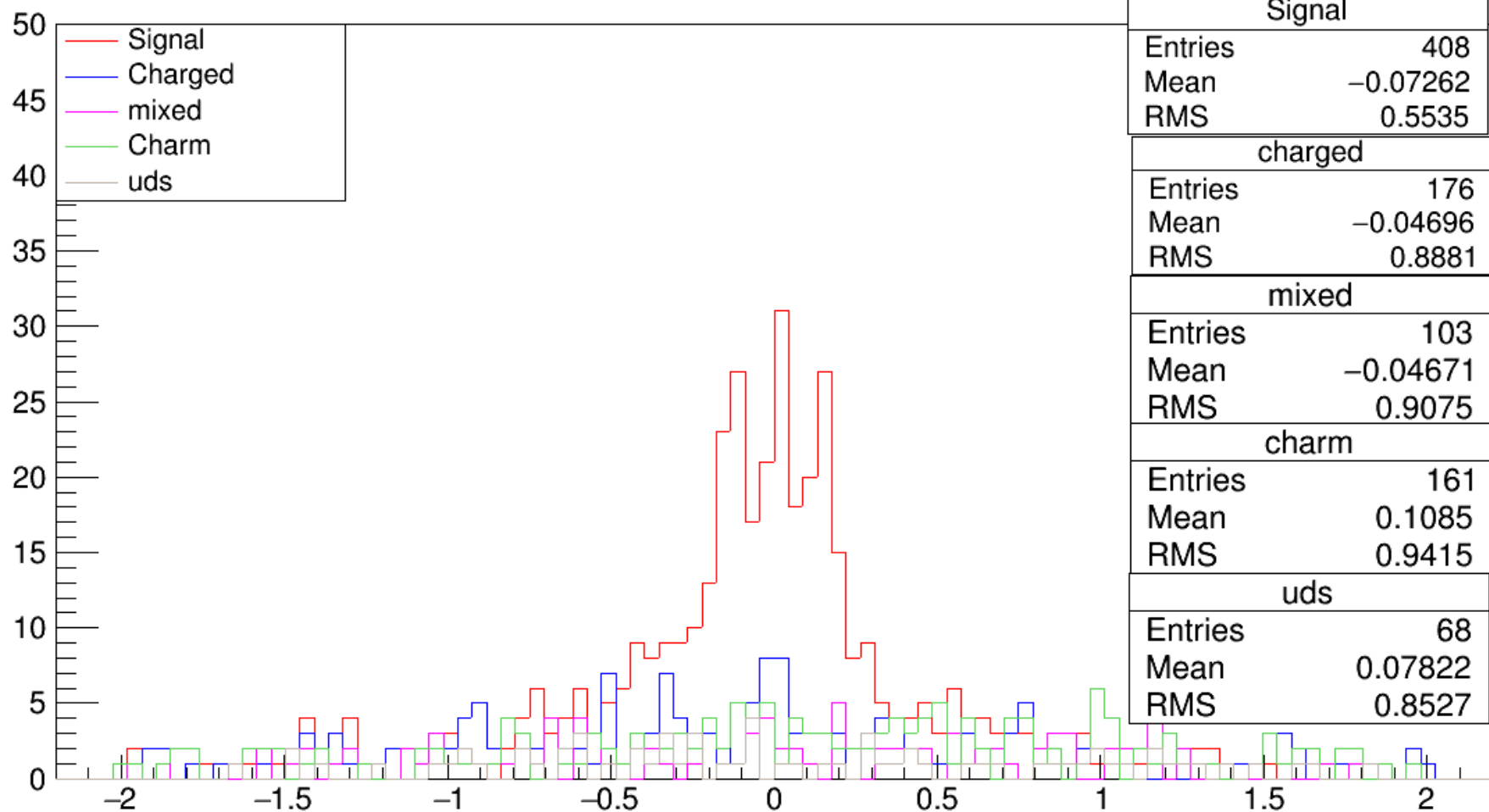
best(cos_tag+cos_sig) above D[m_D-1.865>0.015] generic MC



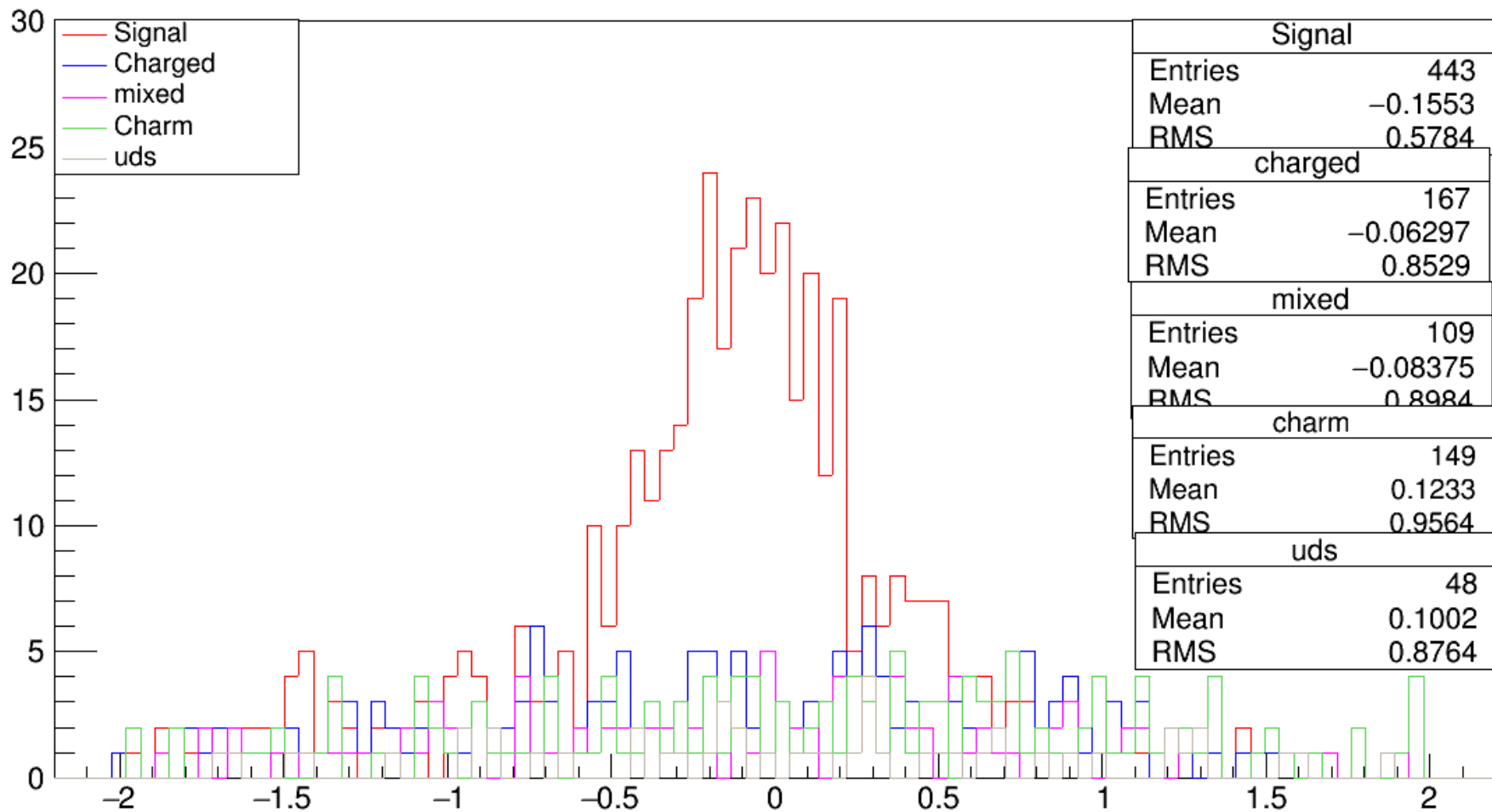
best(cos_tag+cos_sig) around $D[\text{abs}(m_D - 1.865) < 0.015]$ both sig and generic MC



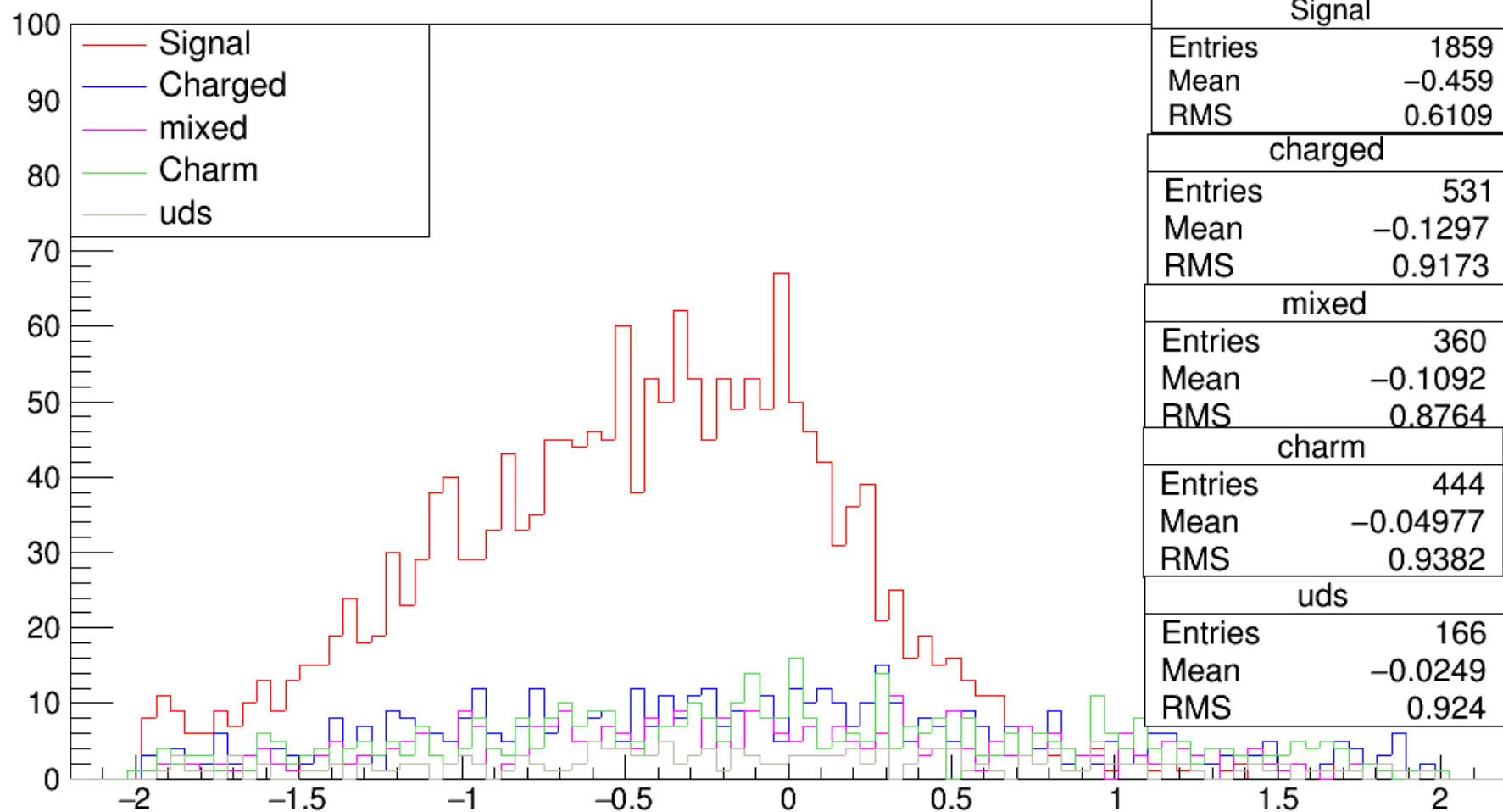
best(cos_tag+cos_sig) around D*[abs(m_D-2.006)<0.03] both sig and generic MC



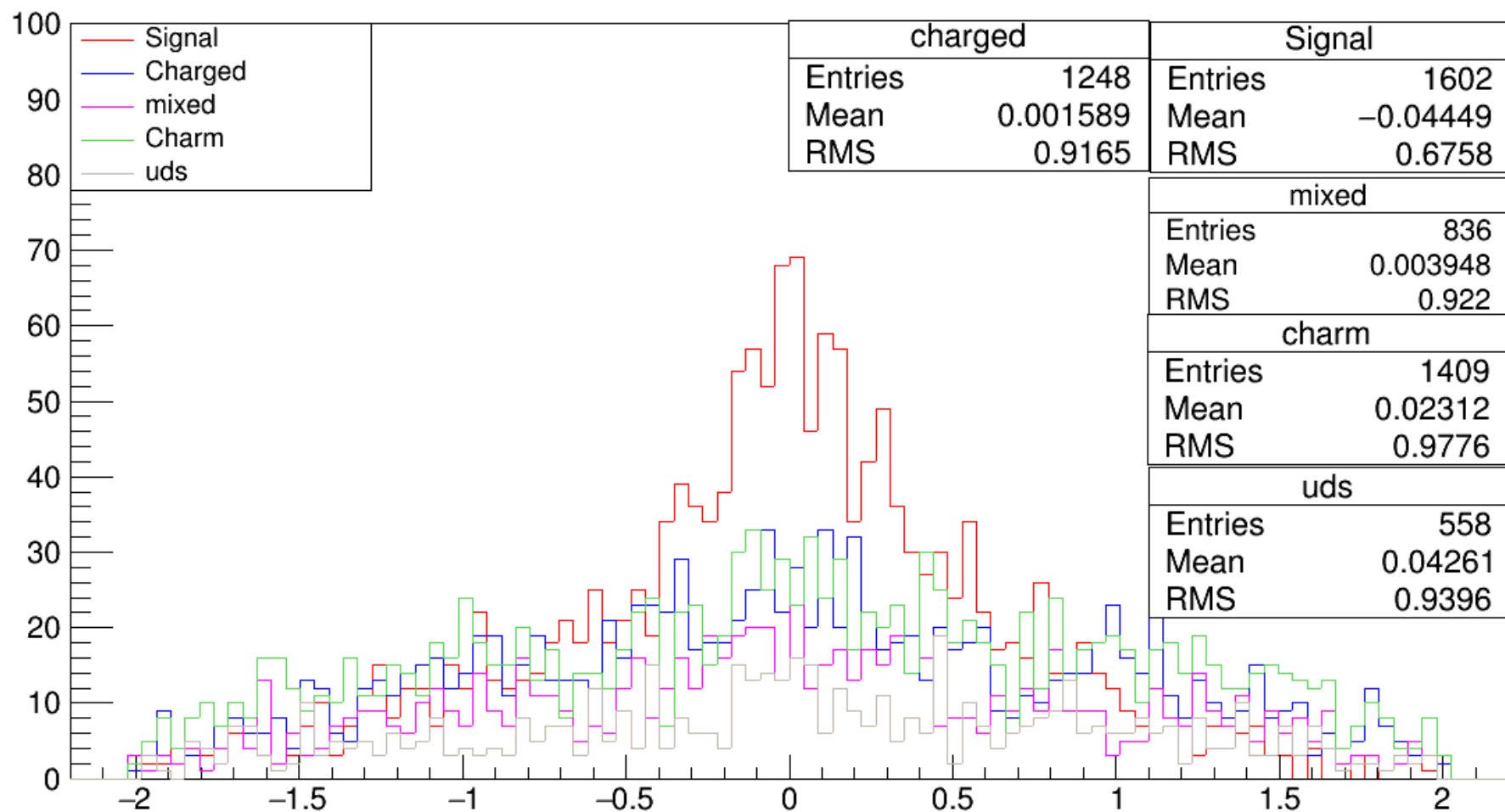
best(cos_tag+cos_sig) between D and D*[abs(m_D-1.96)<0.03] both sig and generic MC



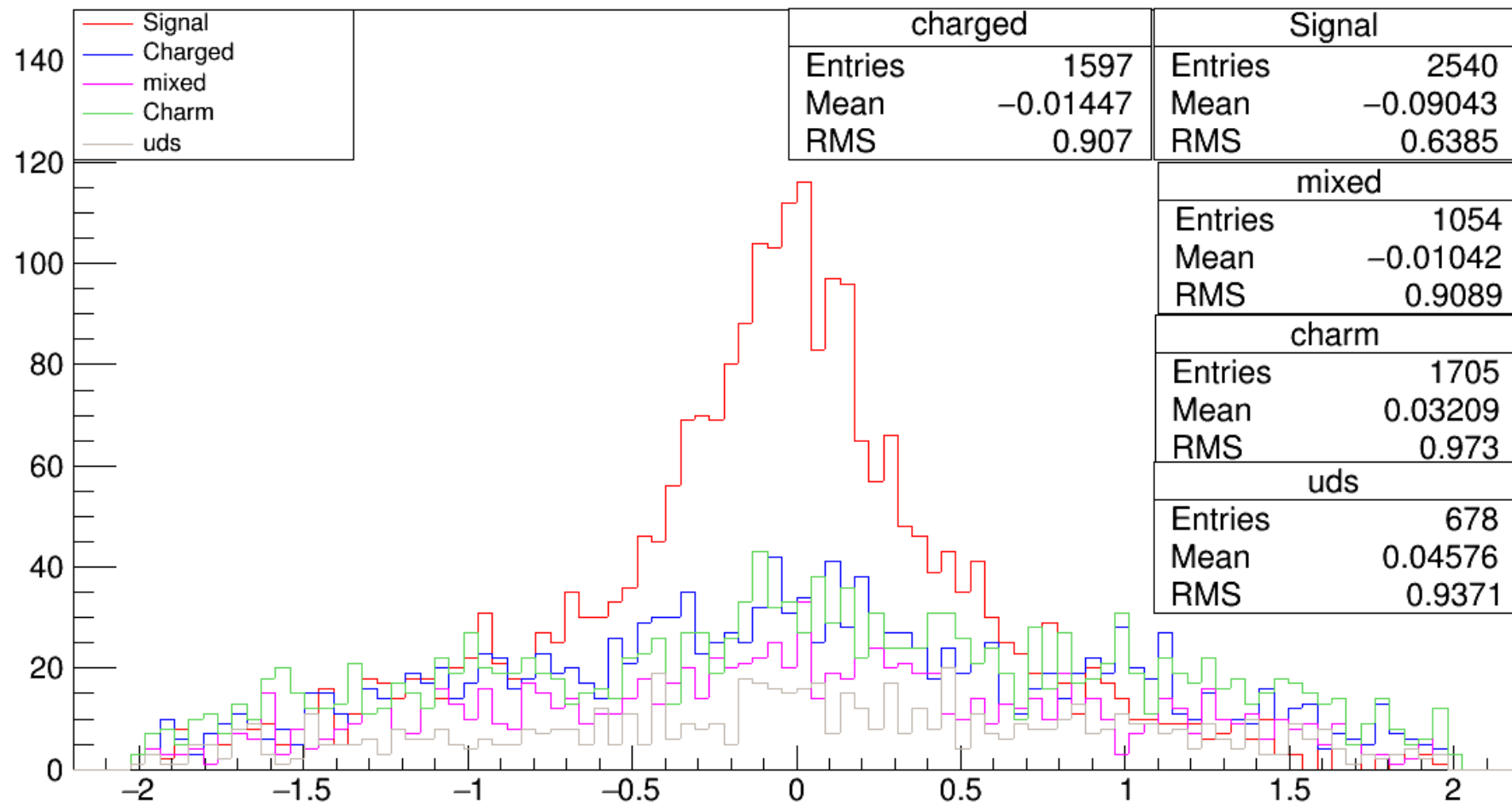
best(cos_tag+cos_sig) below D[m_D<1.86] both sig and generic MC



best(cos_tag+cos_sig) above D*[m_D>2.006] both sig and generic MC

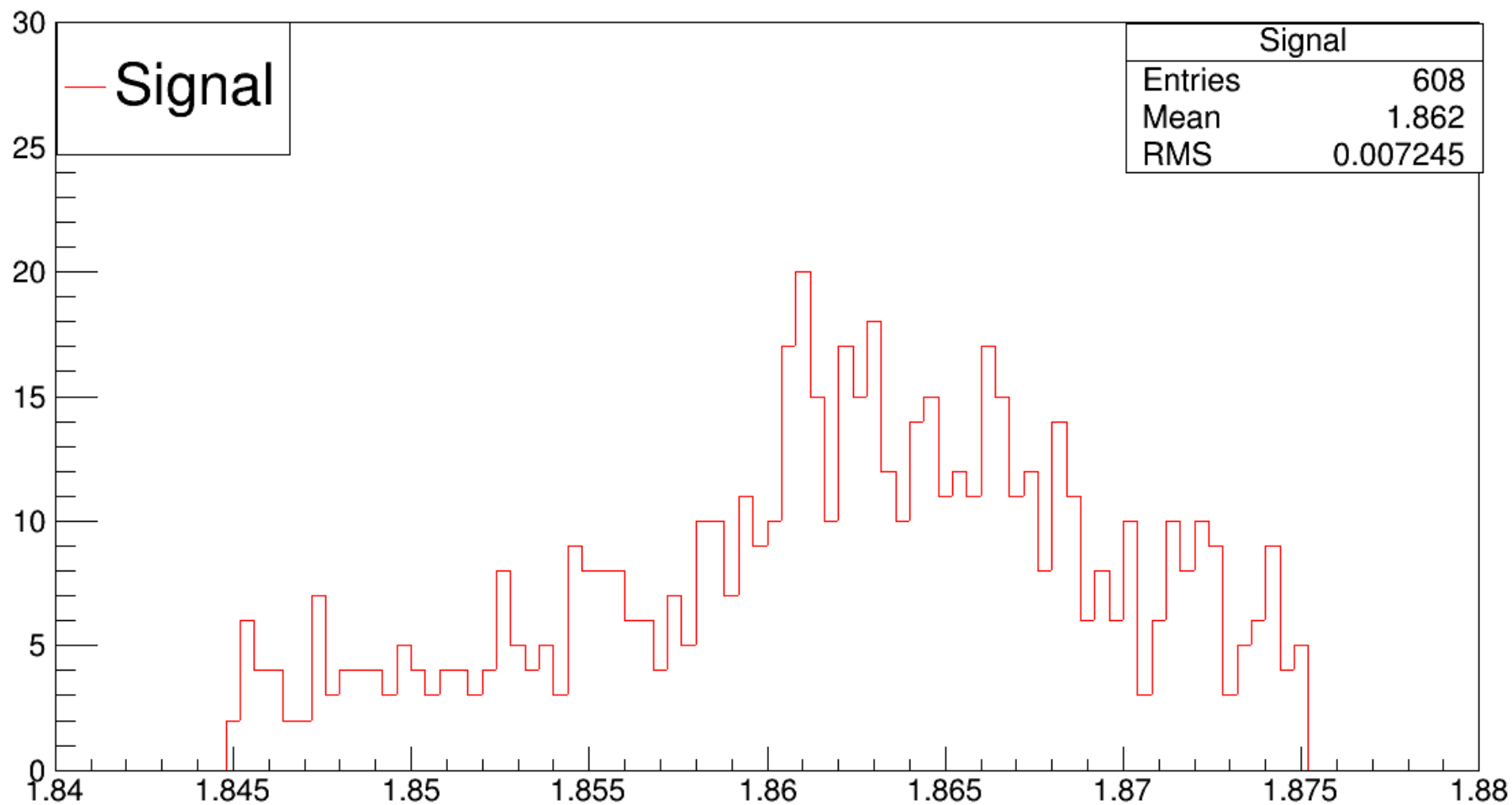


best(cos_tag+cos_sig) above $D[m_D-1.865 > 0.015]$ both sig and generic MC

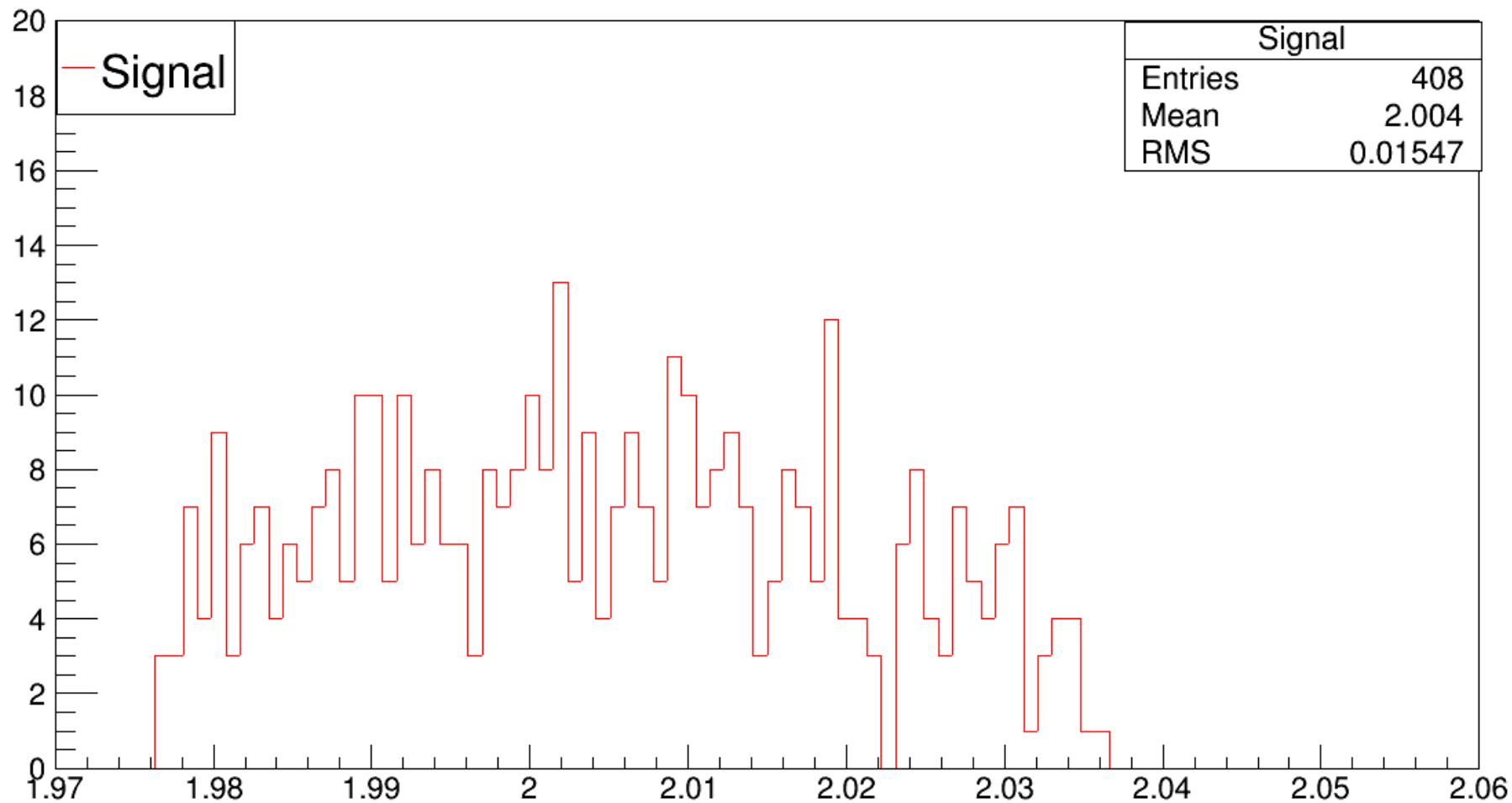


Backup

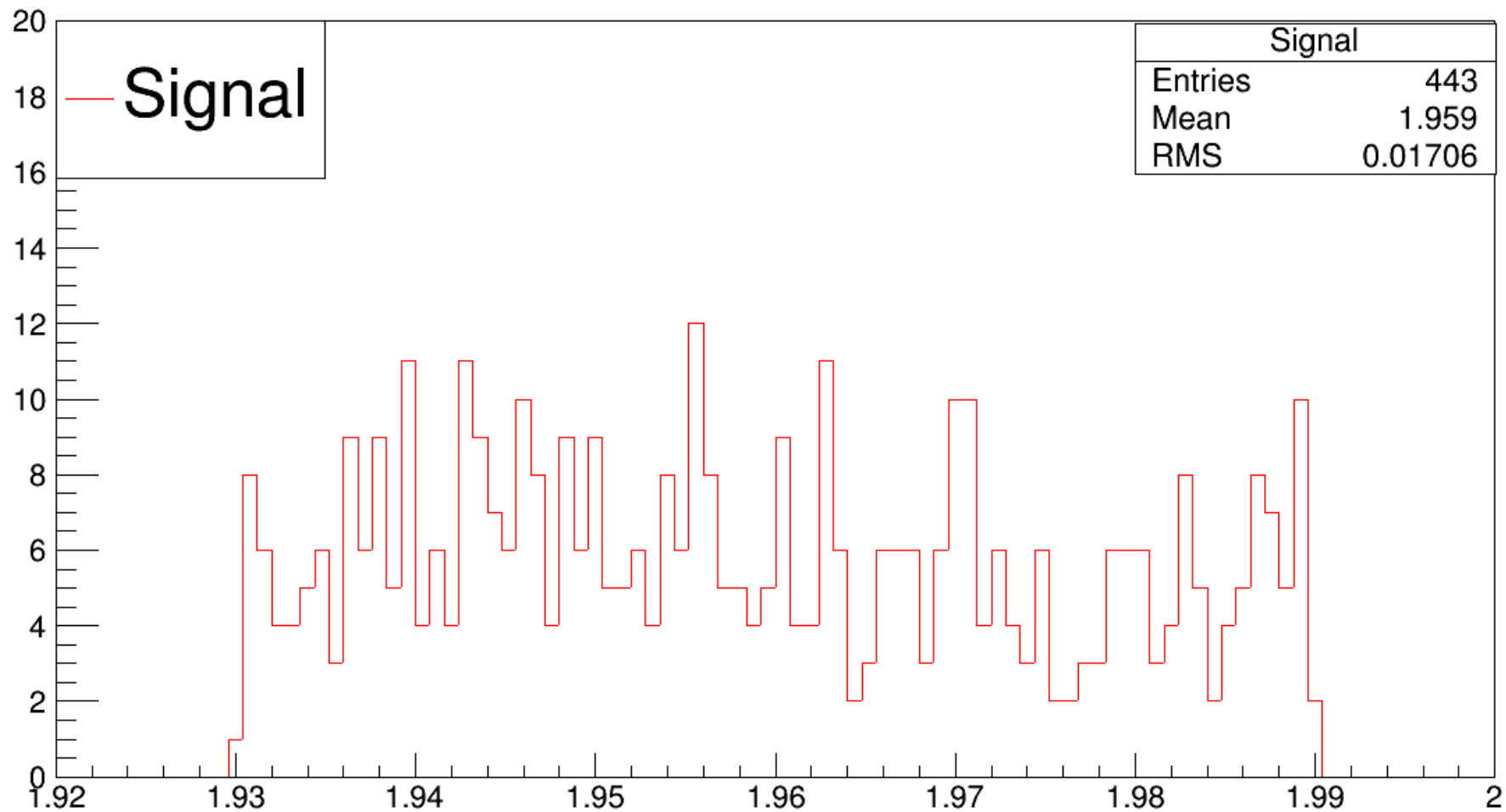
m_D around D[abs(m_D-1.86)<0.015] Sig. MC



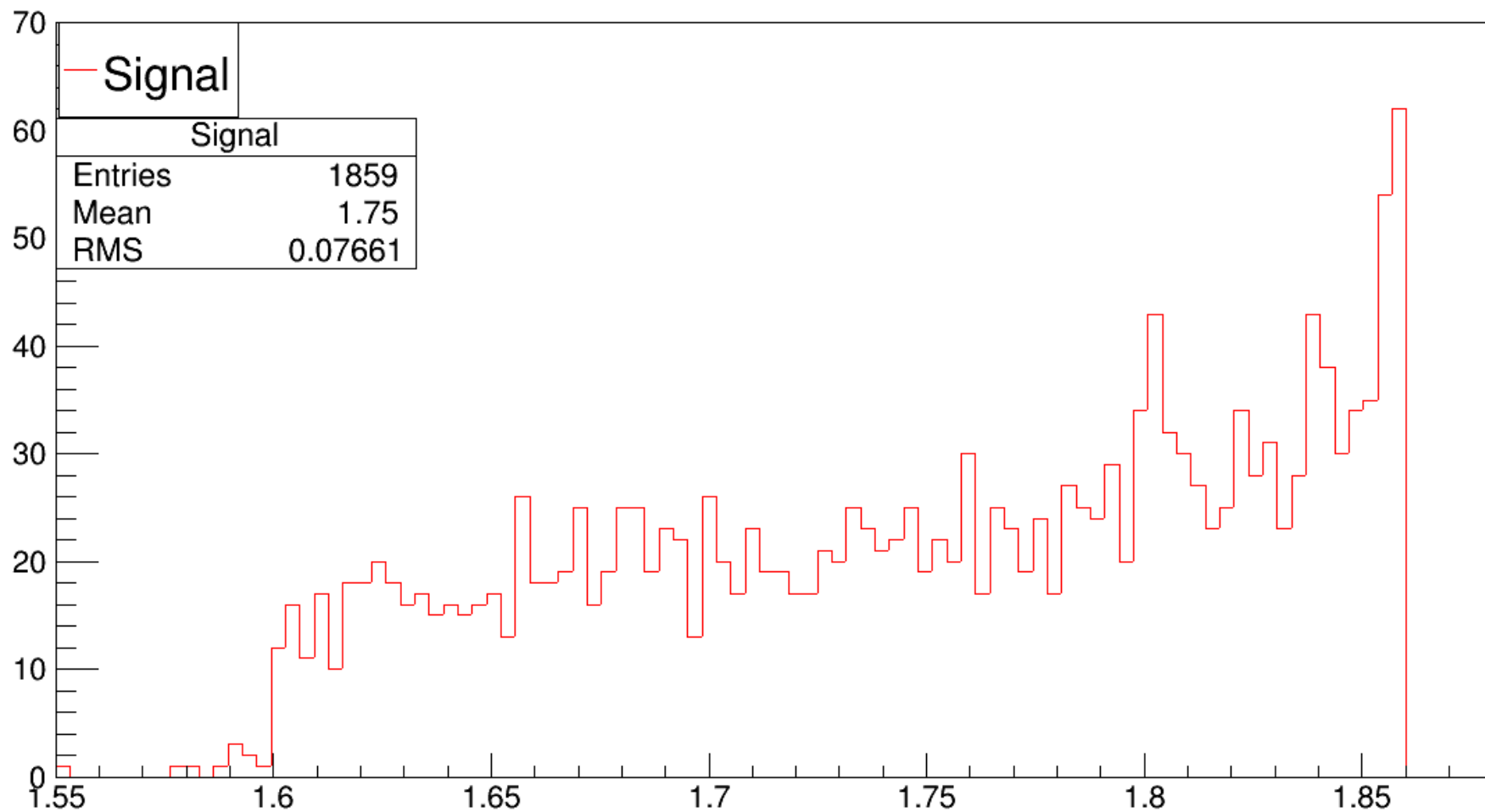
m_D around D*[abs(m_D-2.006)<0.03] Sig. MC



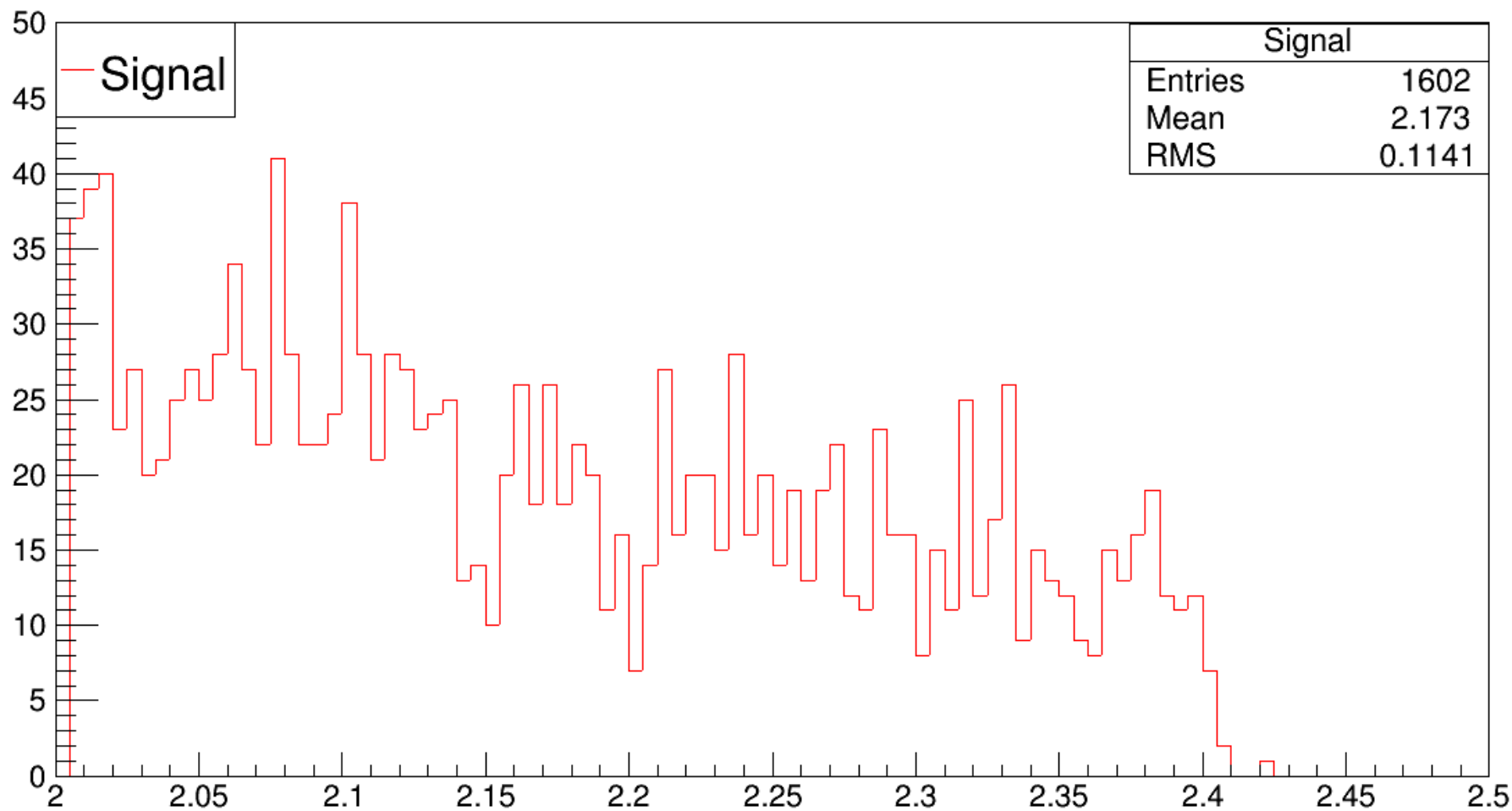
m_D between D and D*[abs(m_D-1.96)<0.03] Sig. MC



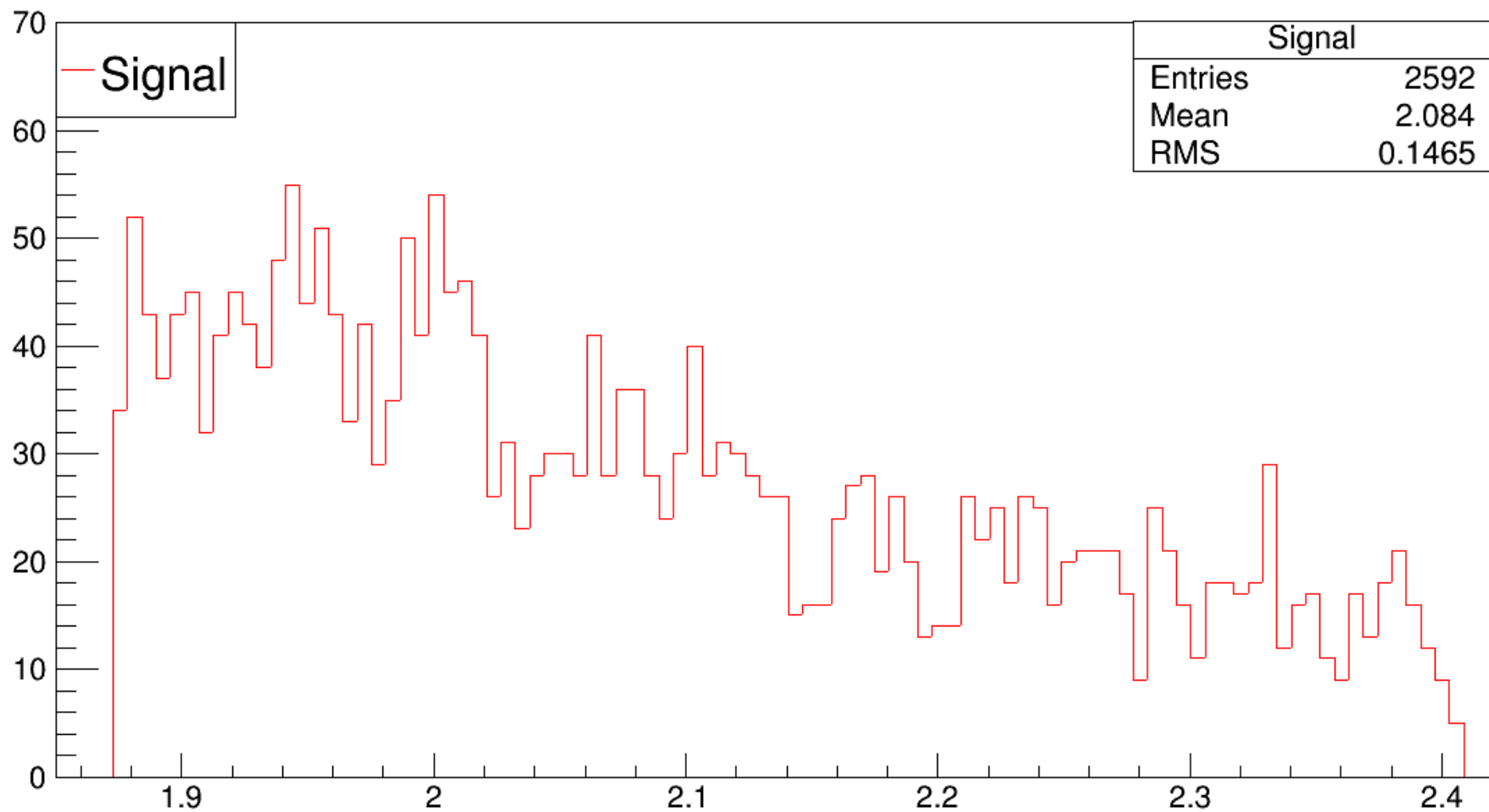
m_D less than D[m_D<1.86] Sig. MC



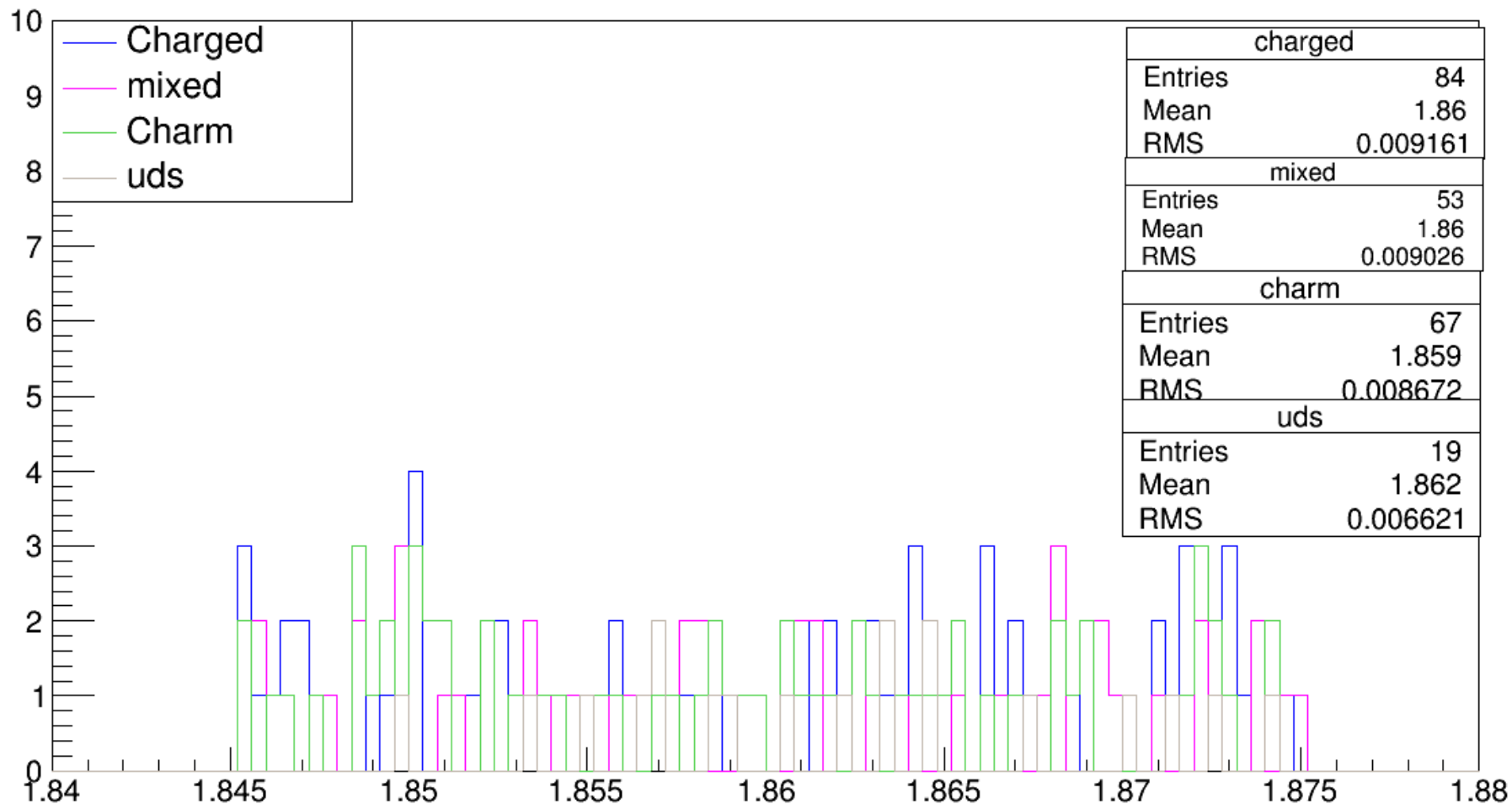
m_D greater than D*[m_D>2.006] Sig. MC



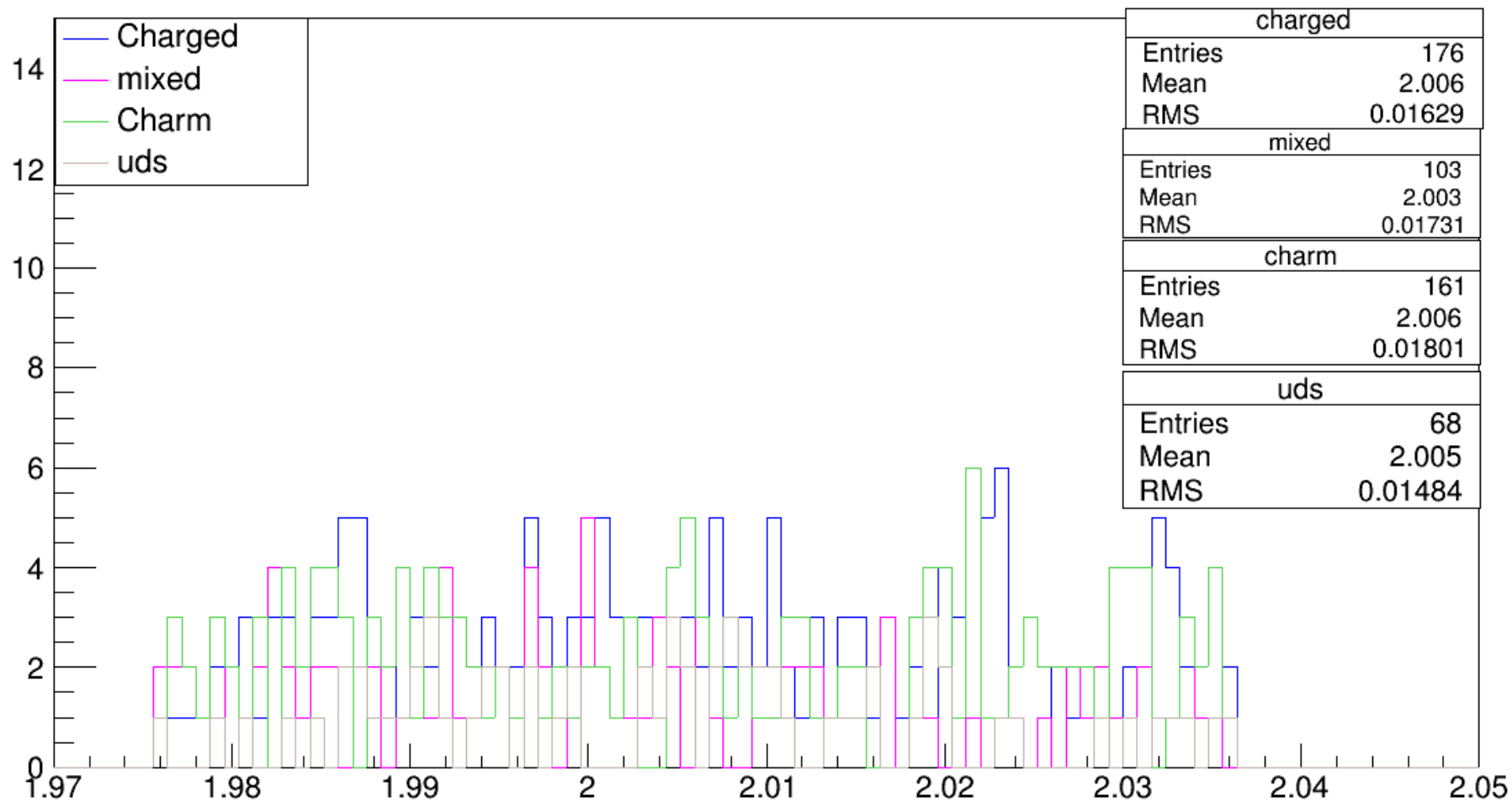
m_D greater than D[m_D-1.86>0.015] Sig. MC



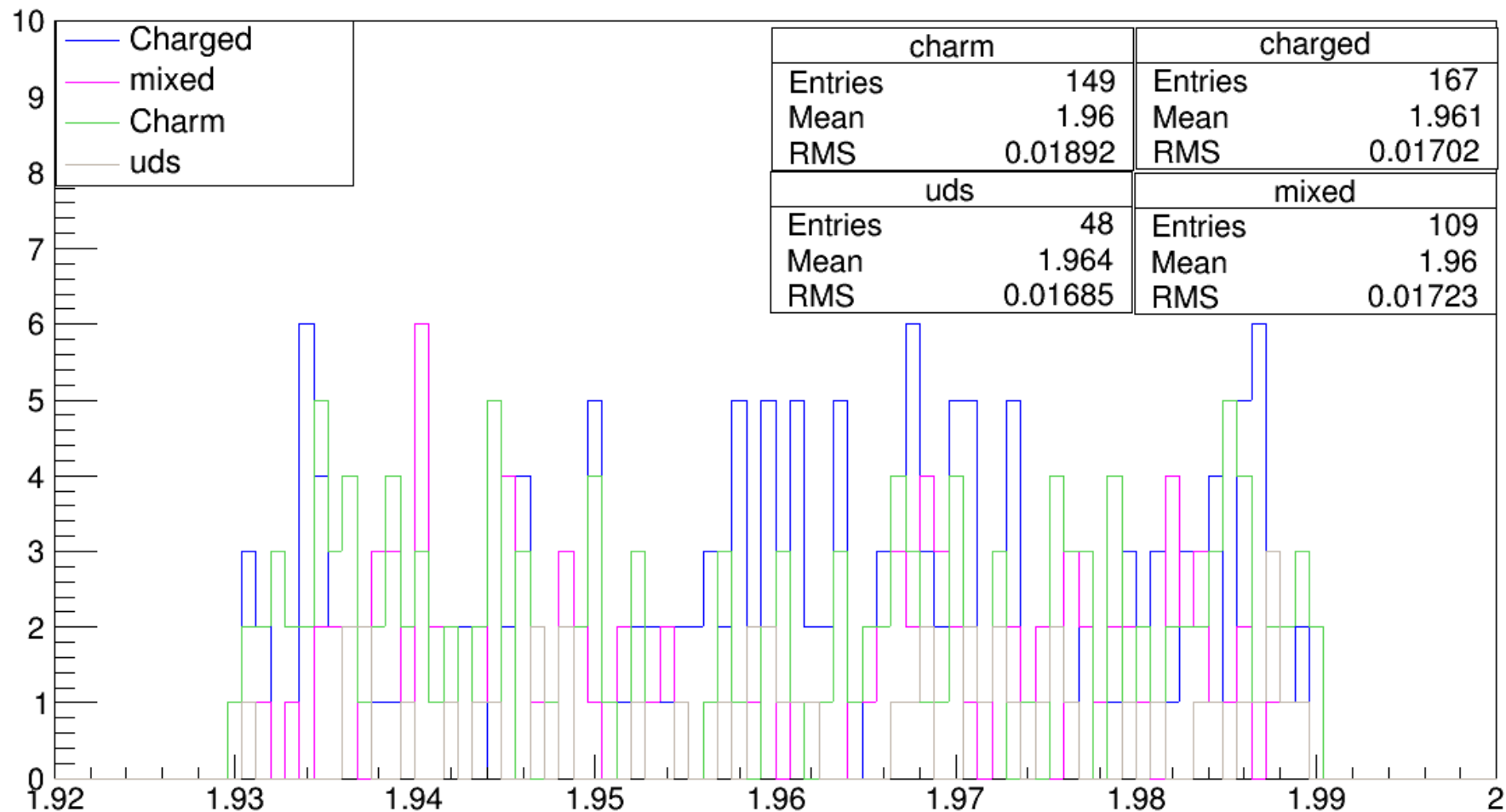
m_D around D[abs(m_D-1.86)<0.015] generic MC



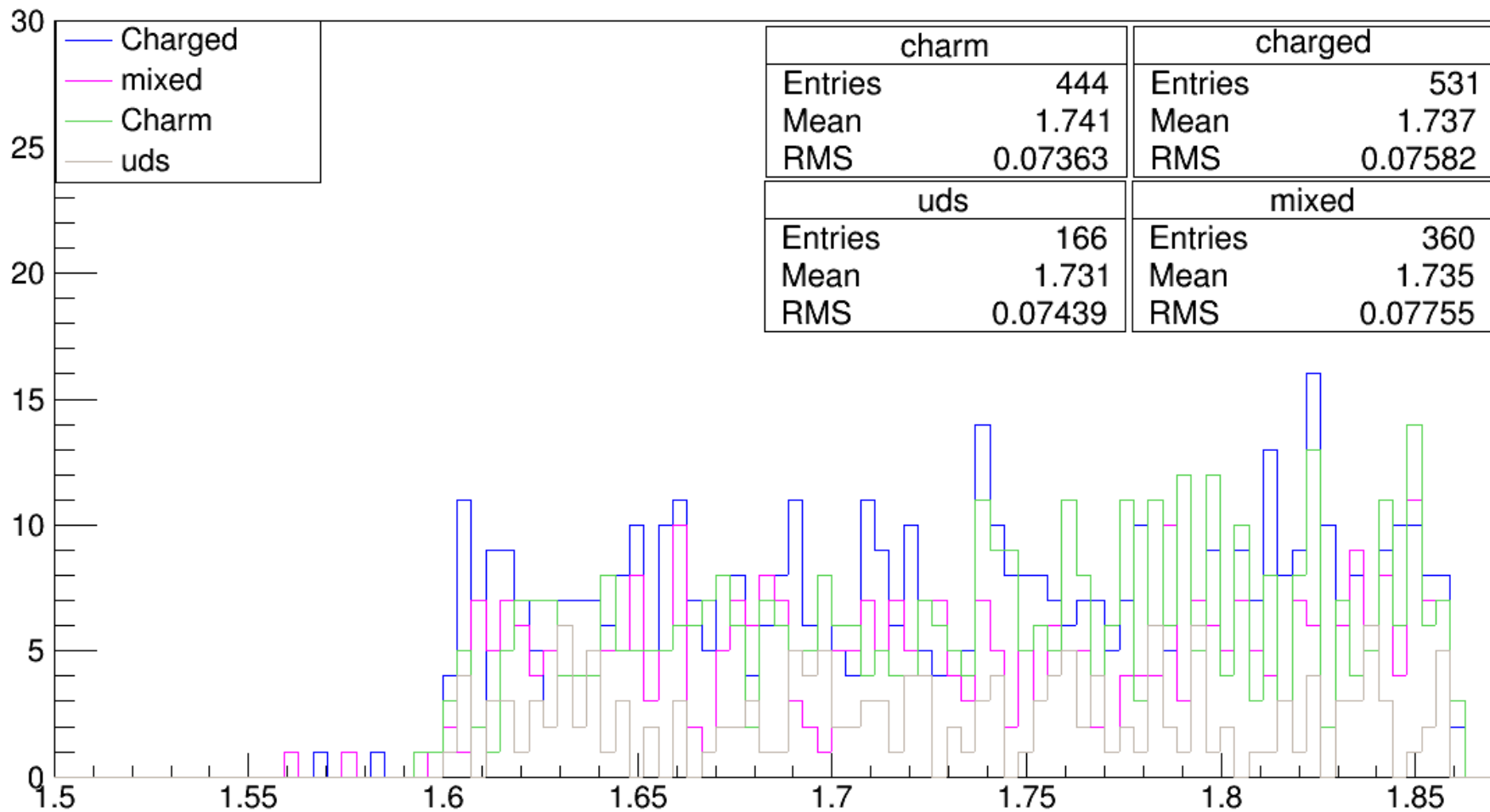
m_D around D*[abs(m_D-2.006)<0.03] generic MC



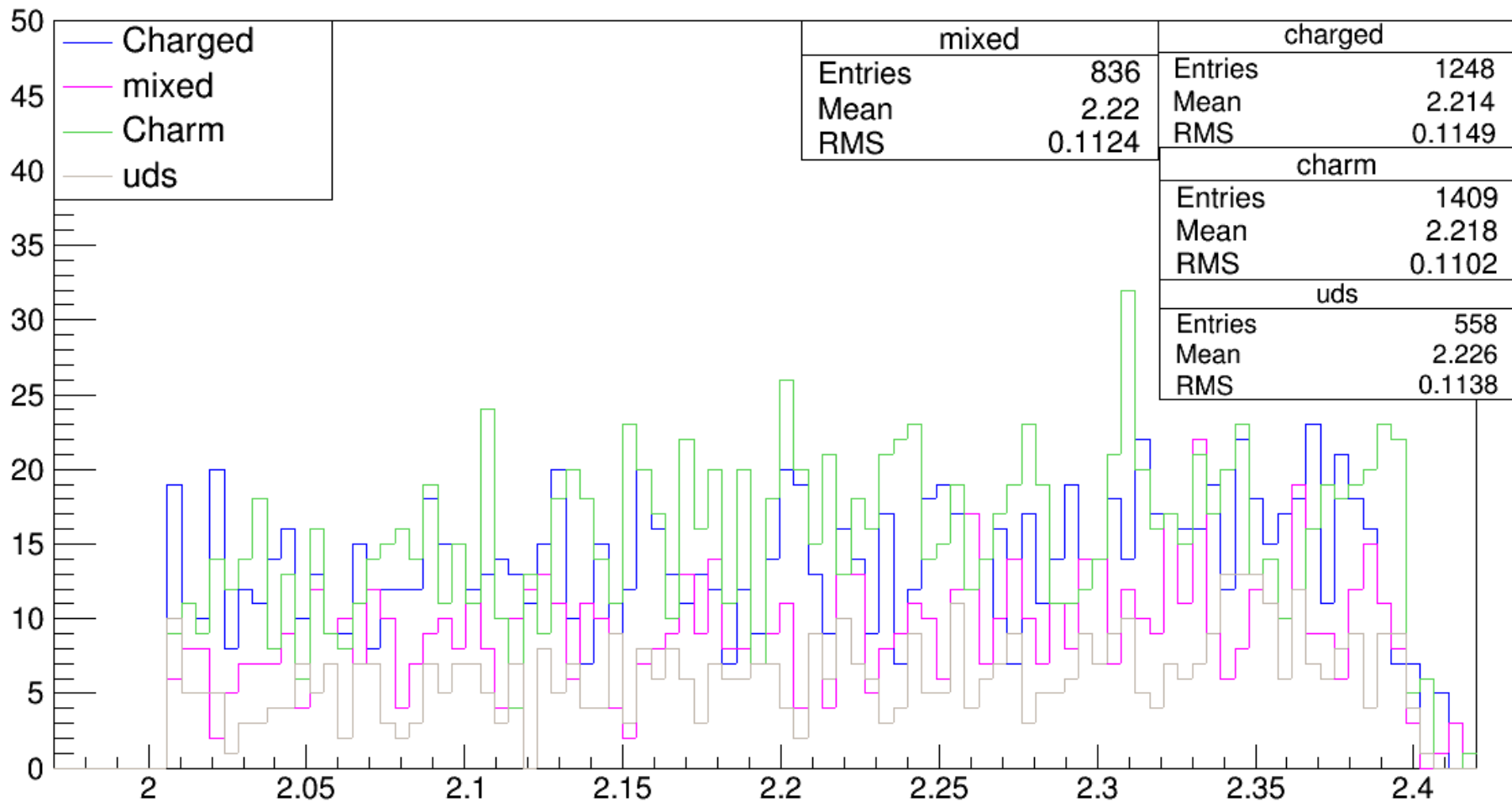
m_D in the region between D and D*[abs(m_D-1.96)<0.03] generic MC



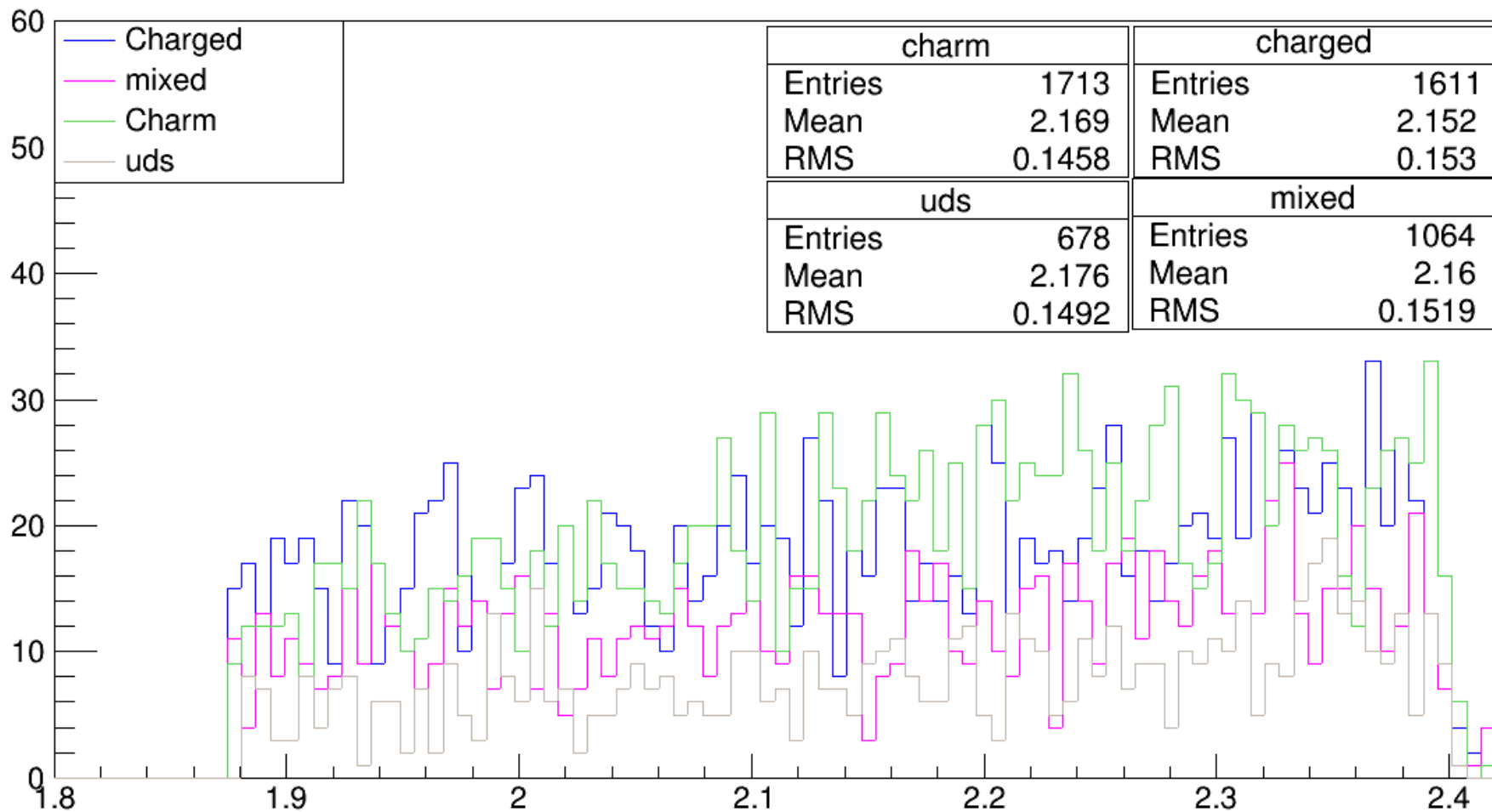
m_D less than D[m_D < 1.86] generic MC



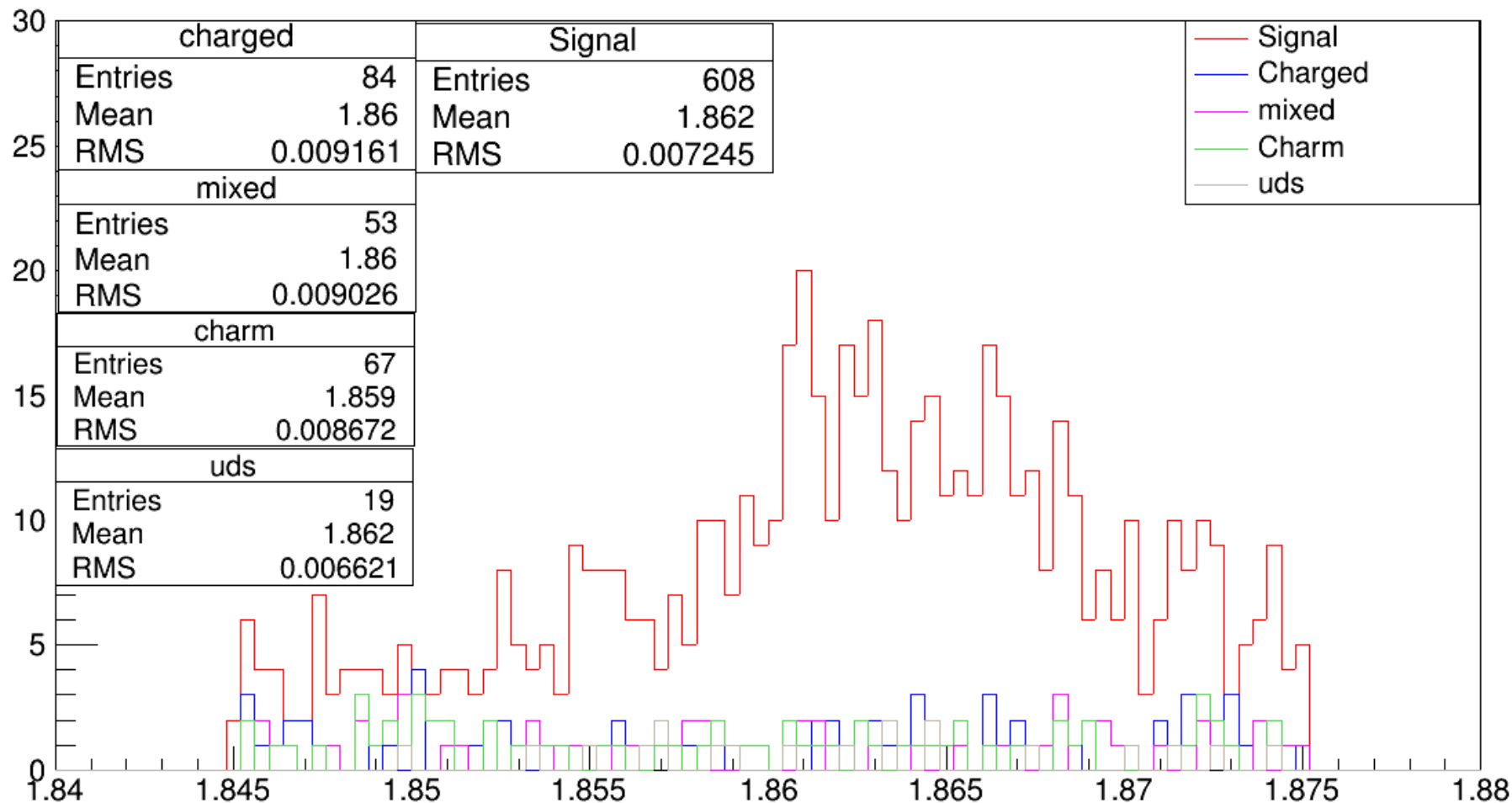
m_D greater than D*[m_D > 2.006] generic MC



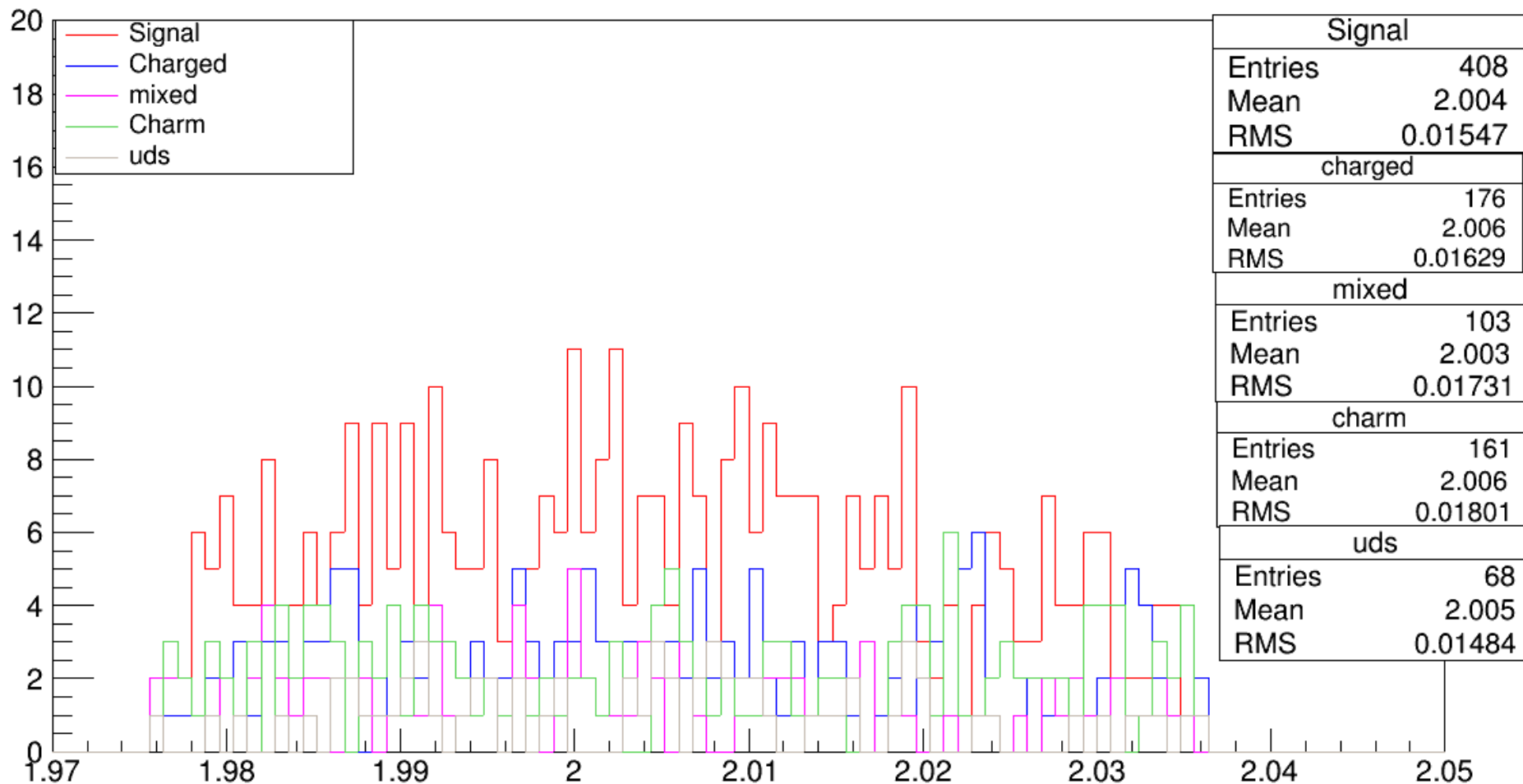
m_D in the region [m_D-1.86 > 0.015] generic MC



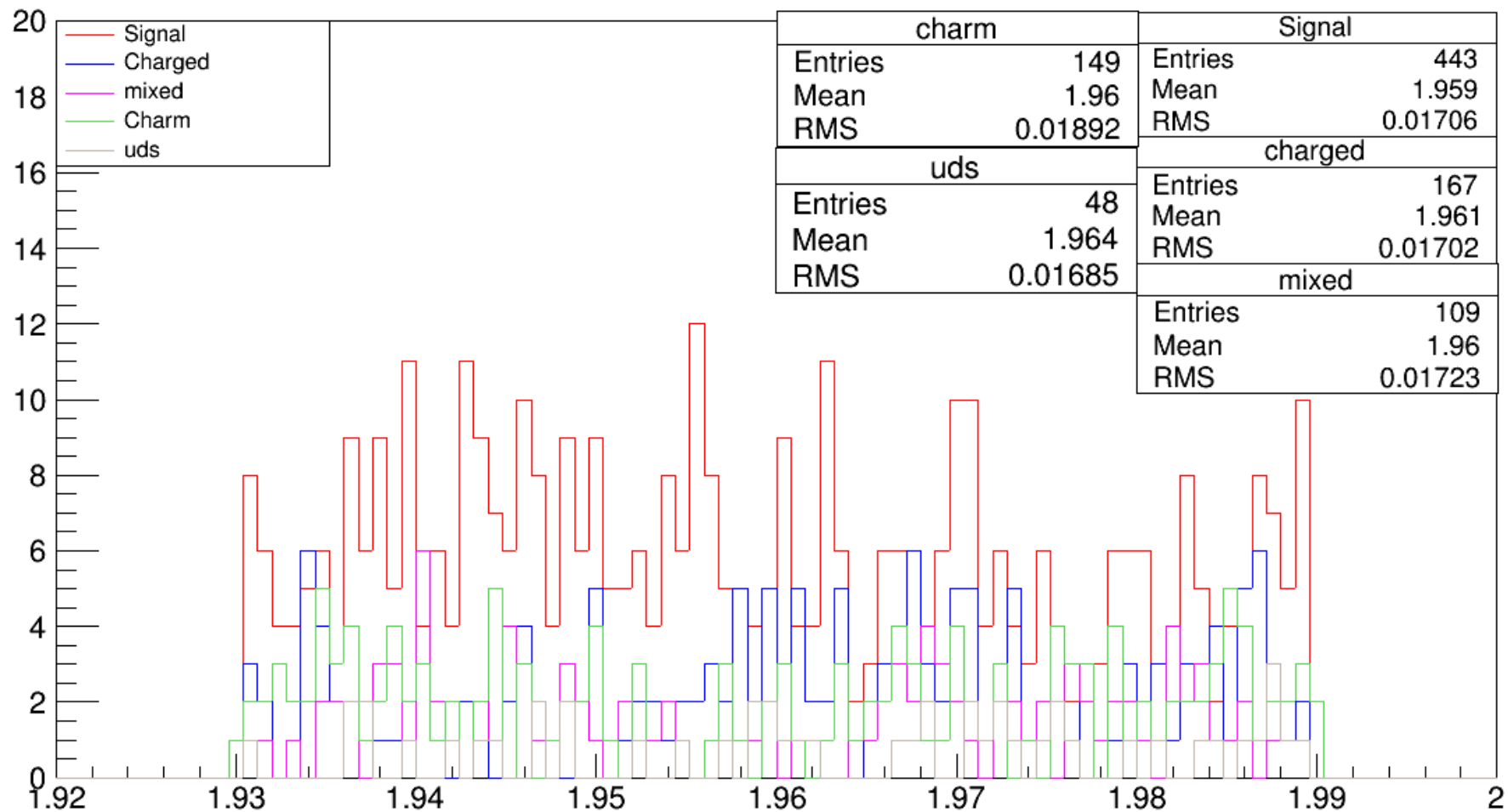
m_D around D[abs(m_D-1.86)<0.015] generic and sig MC



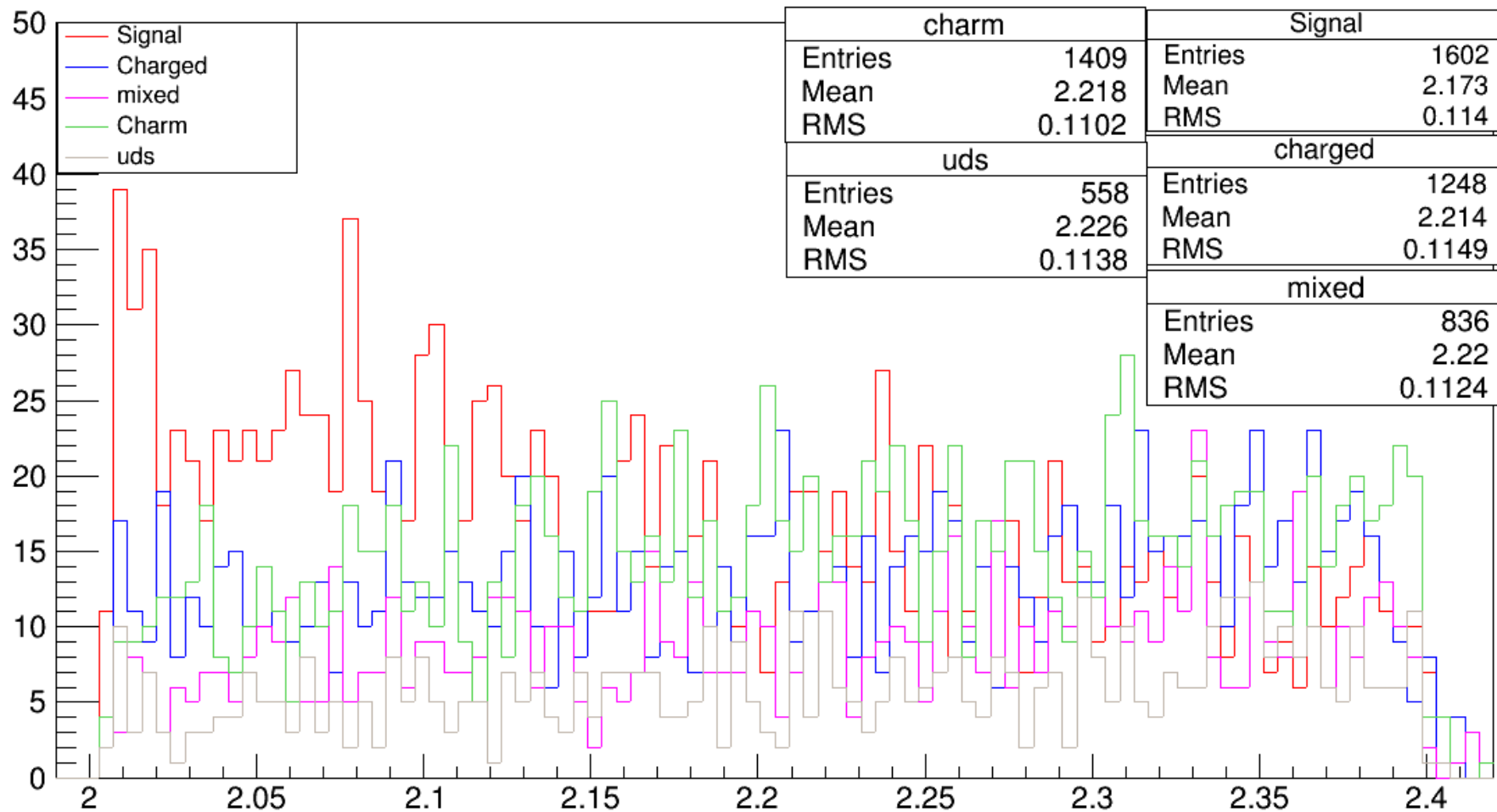
m_D around D*[abs(m_D-2.006)<0.03] generic and sig MC



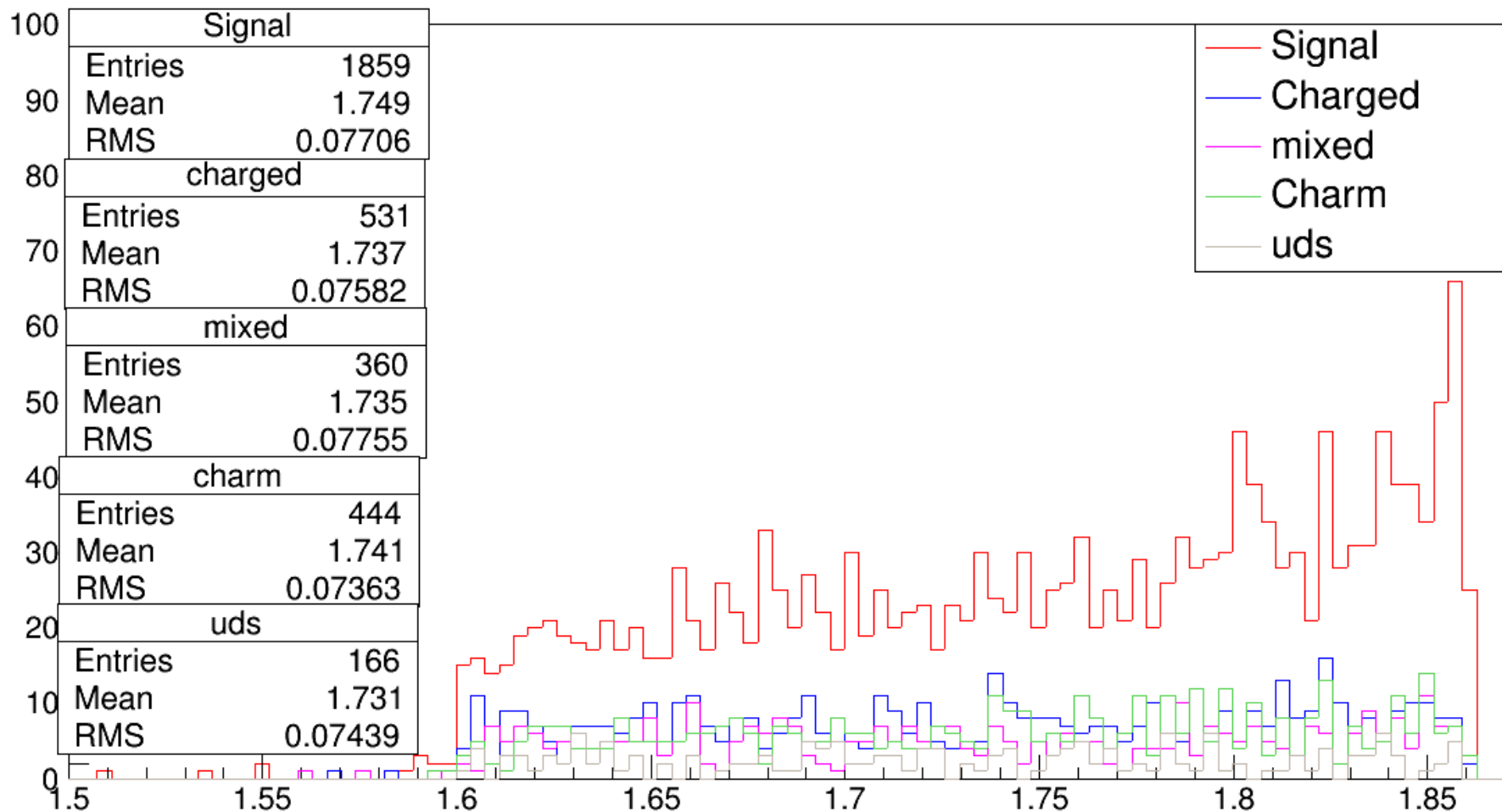
m_D in the region between D and D*[abs(m_D-1.96)<0.03] generic and sig MC



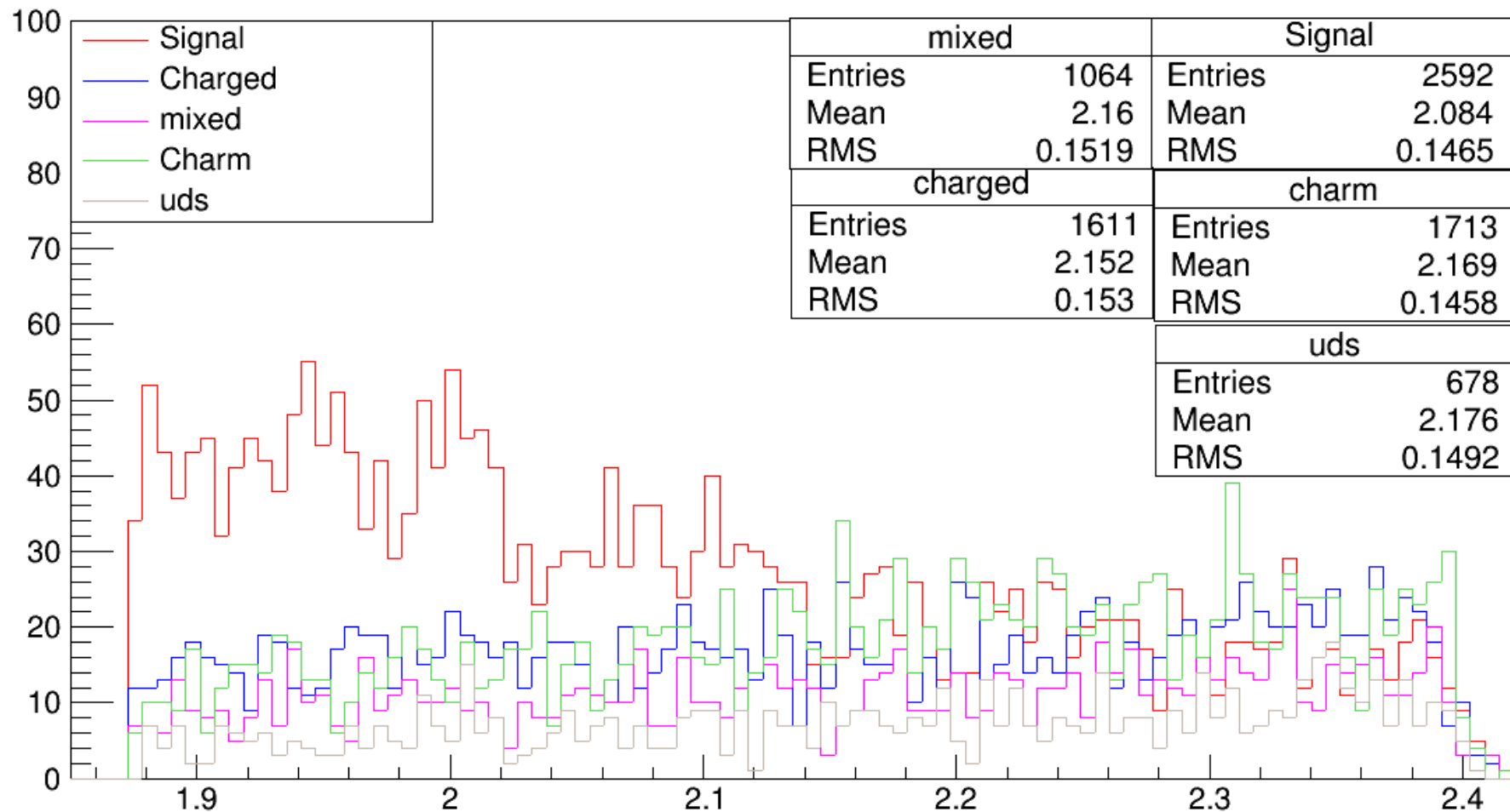
m_D greater than D*[m_D > 2.006] generic MC



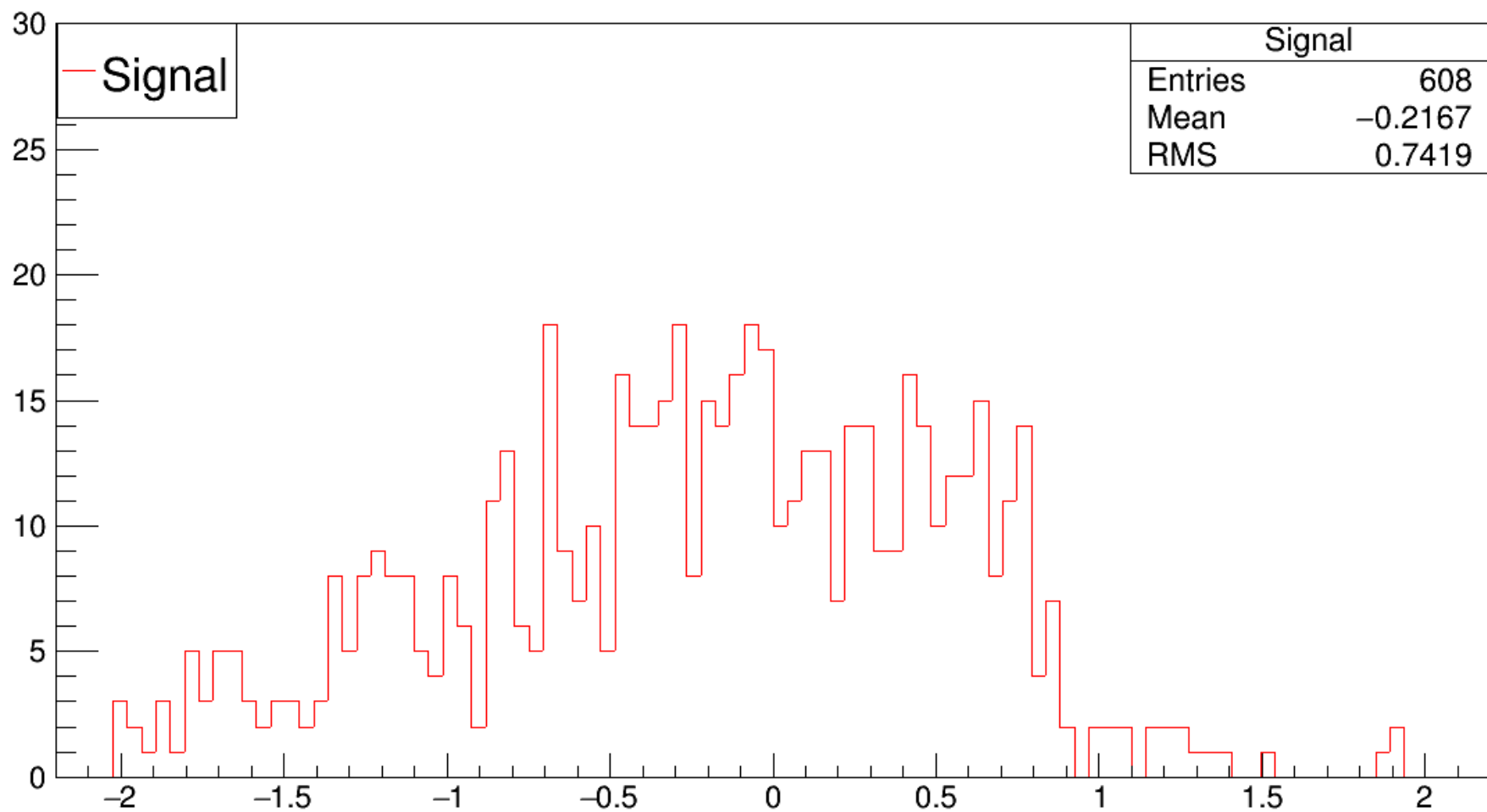
m_D less than D[m_D < 1.86] generic MC



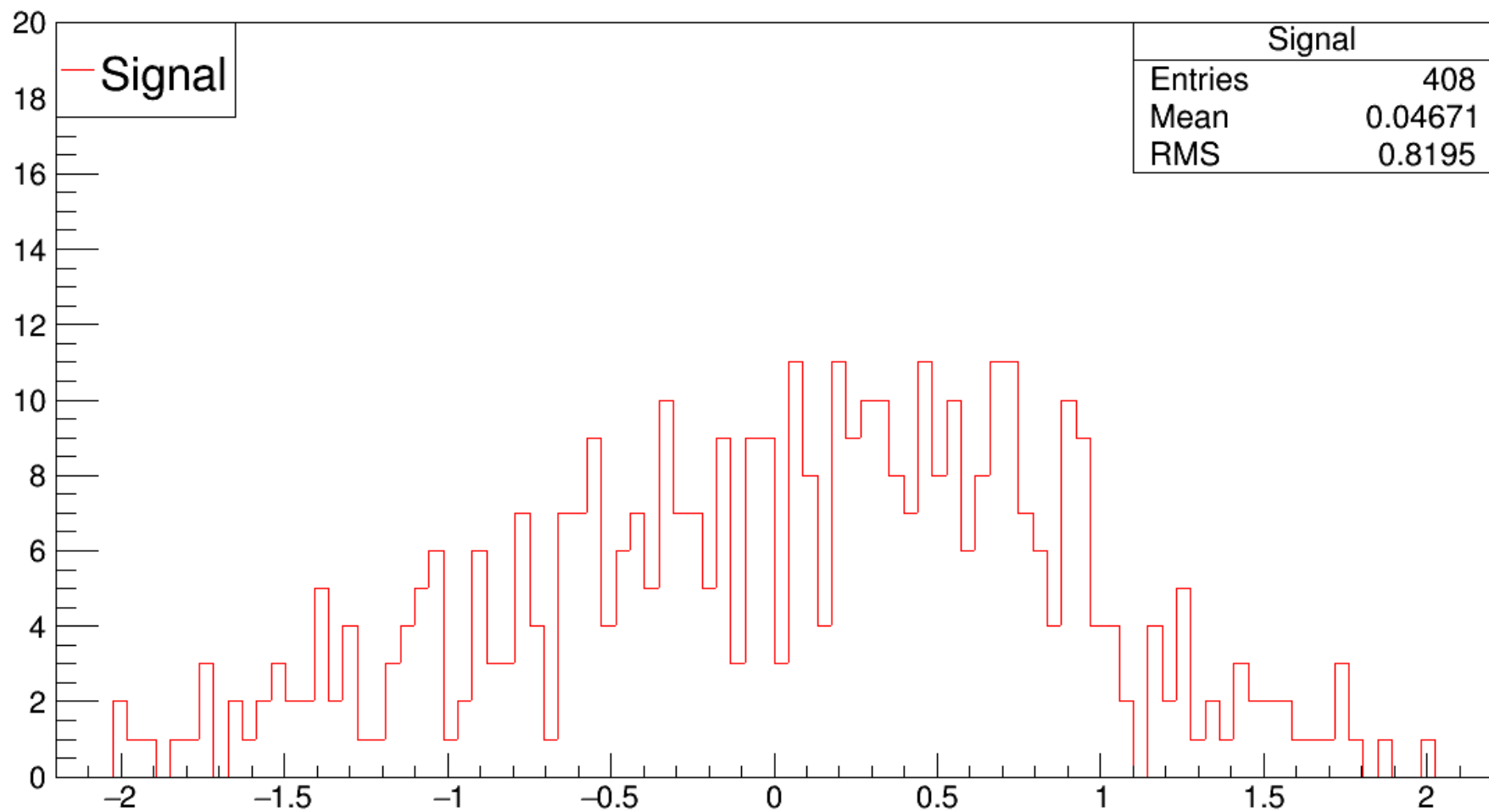
m_D in the region [m_D-1.86>0.015] generic and sig MC



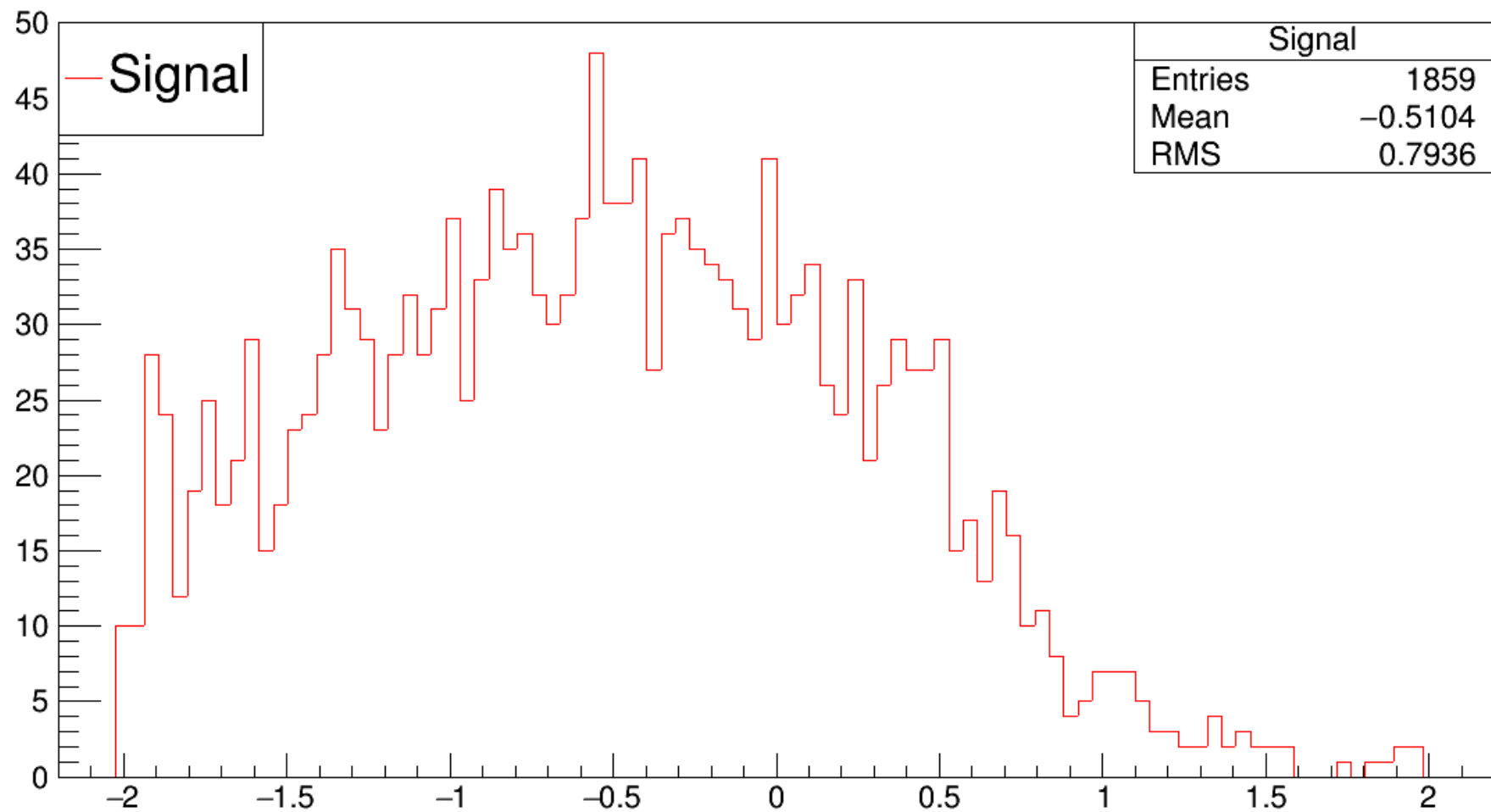
Cos(PBtag,Pvis) in the region around D[abs(m_D-1.86)<0.015] Sig. MC



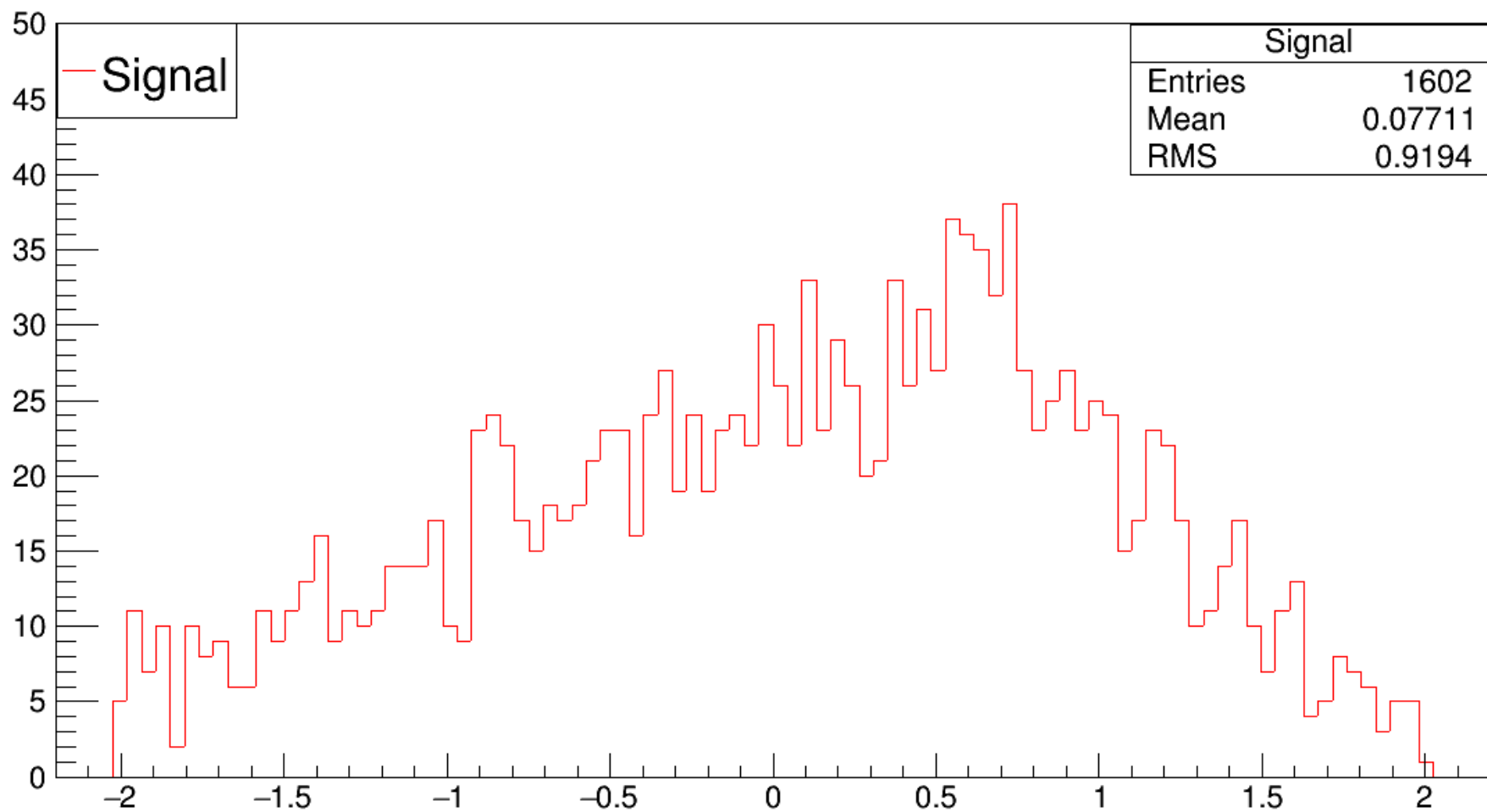
Cos(PBtag,Pvis) in the region around D^* [abs(m_D-2.006)<0.03] Sig. MC



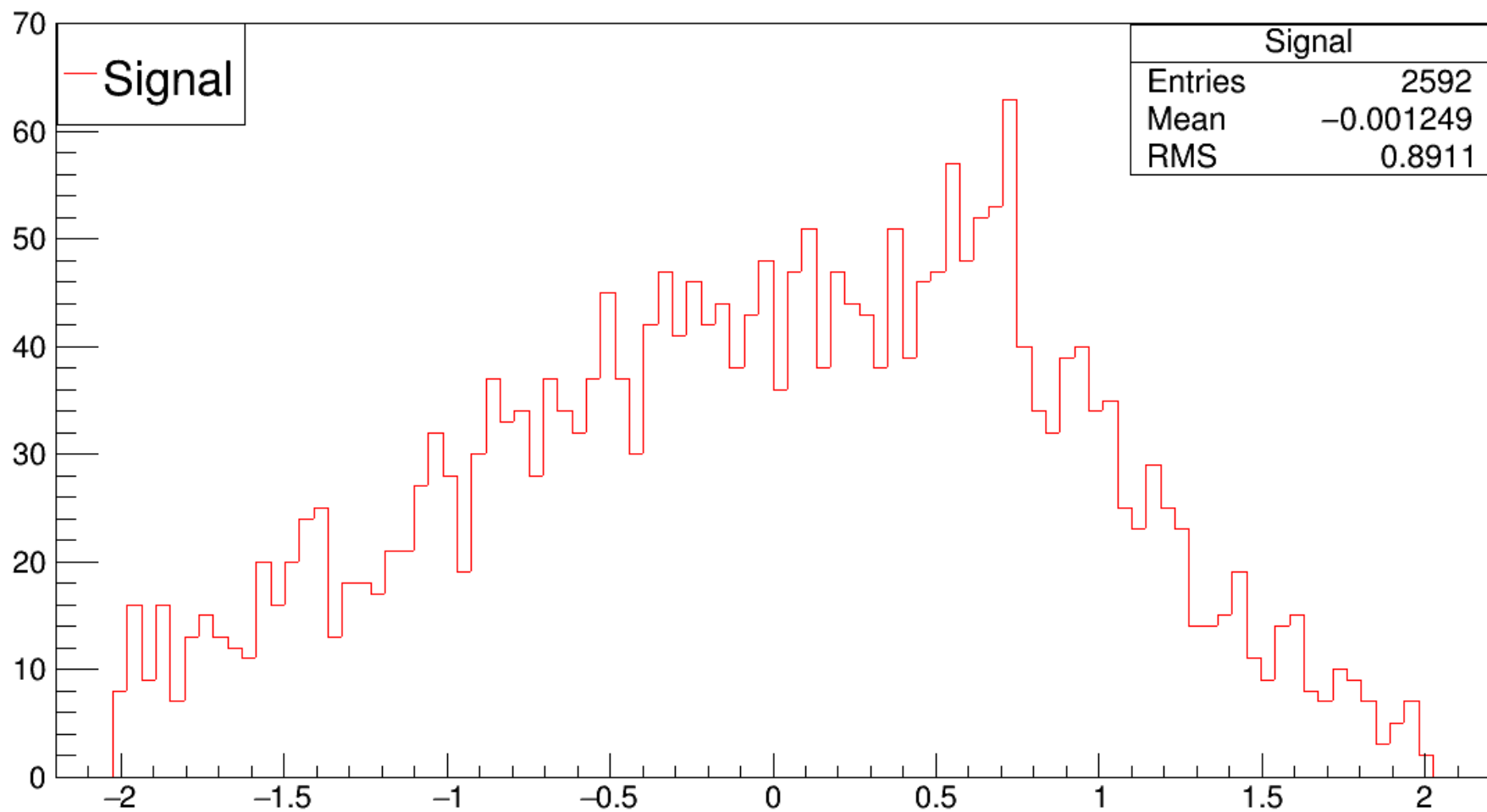
Cos(PBtag,Pvis) in the region less than D[m_D<1.86] Sig. MC



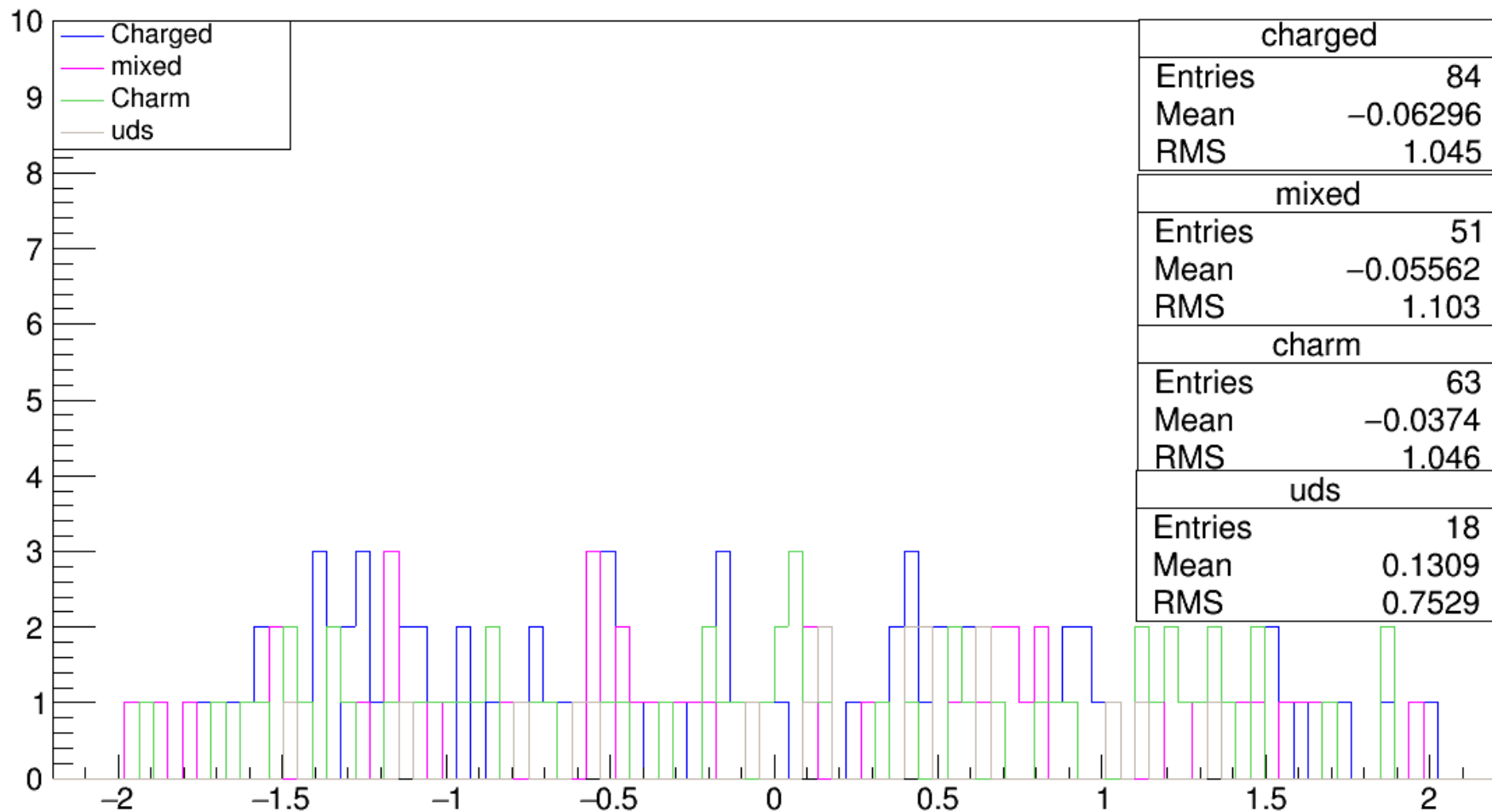
Cos(PBtag,Pvis) in the region greater than D*[m_D>2.006] Sig. MC



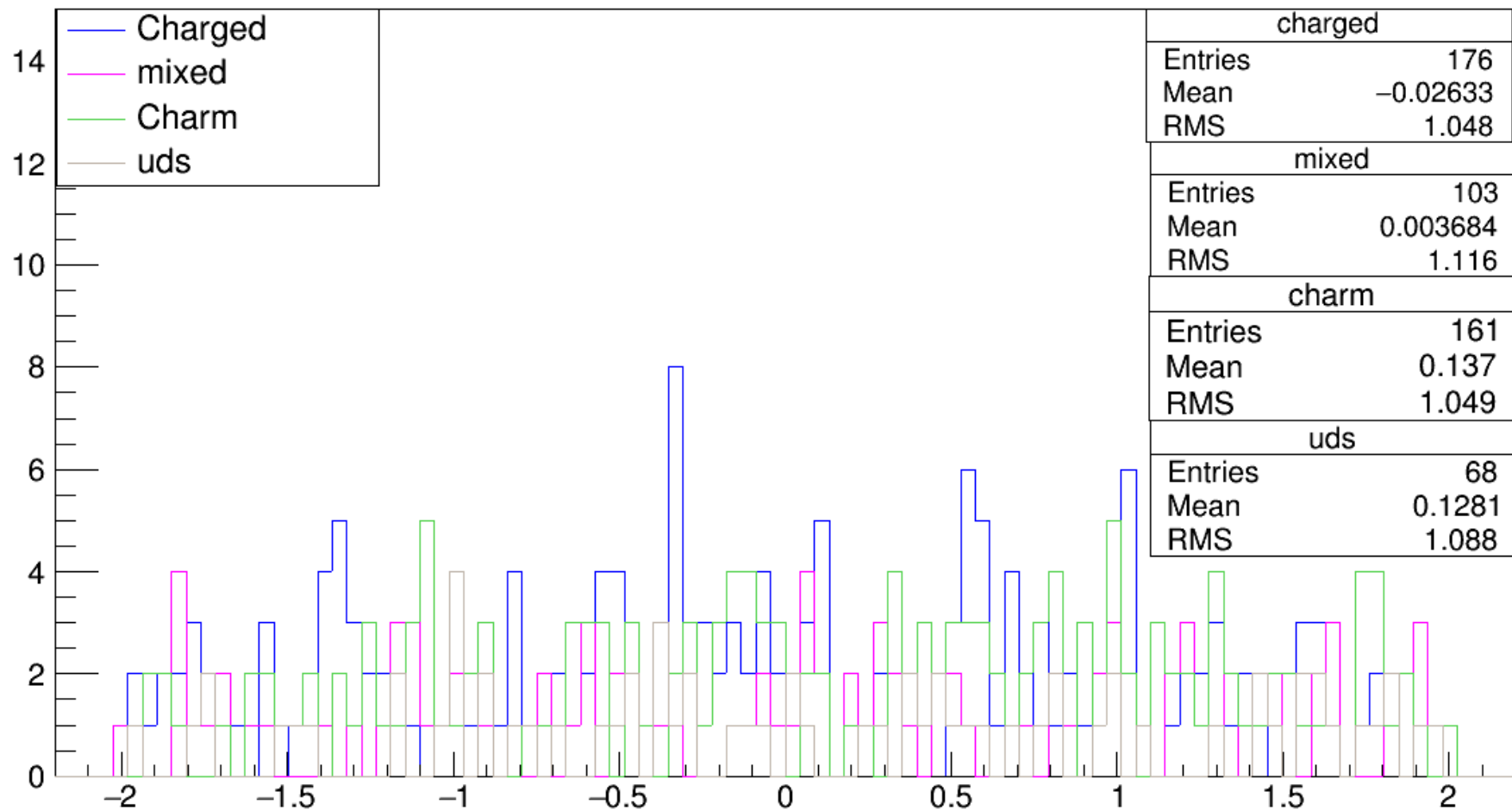
Cos(PBtag,Pvis) in the region greater than $D[m_{D-1.86} > 0.015]$ Sig. MC



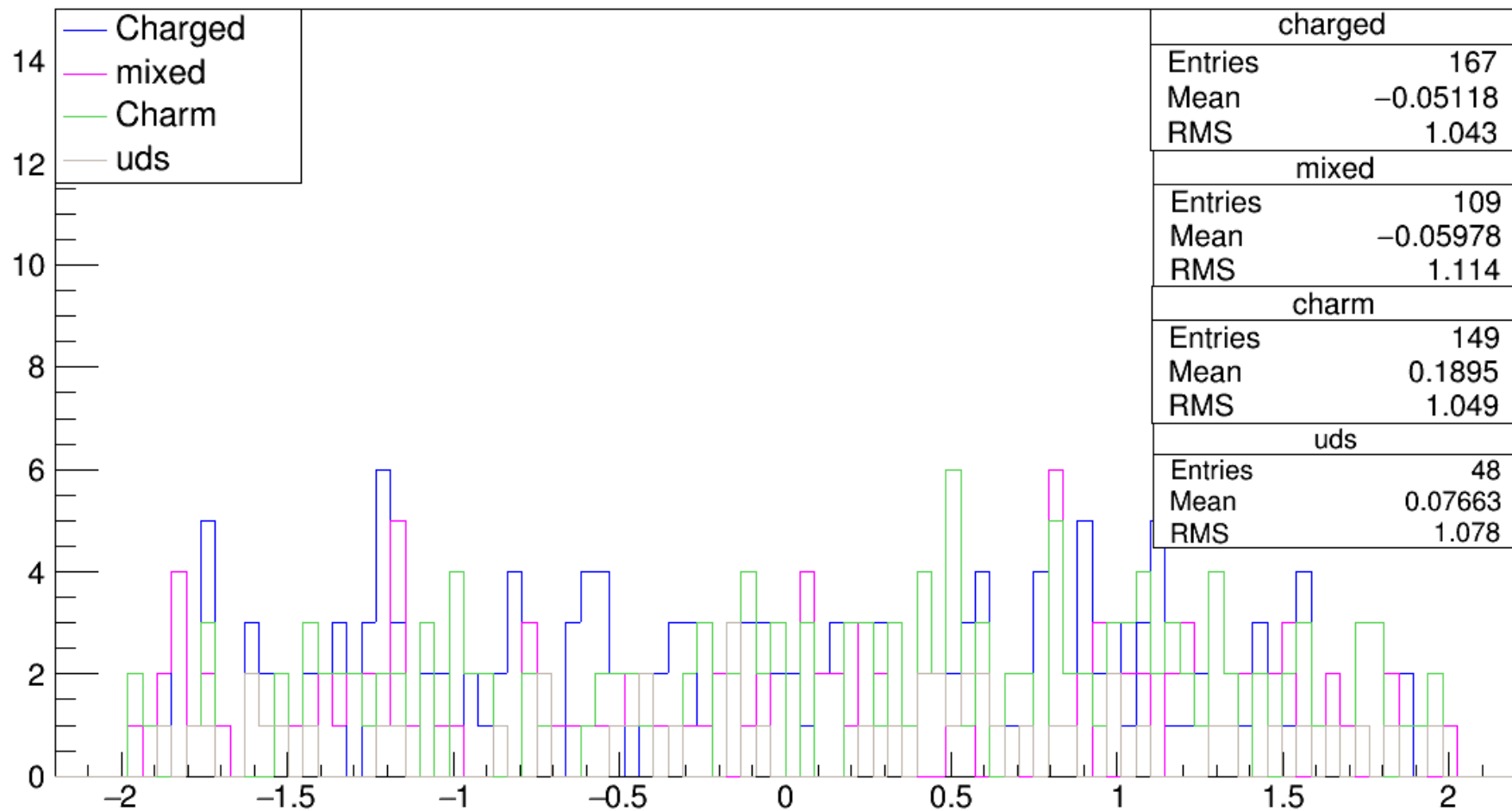
cos(PBtag,Pvis) around D[abs(m_D-1.865)<0.015] generic MC



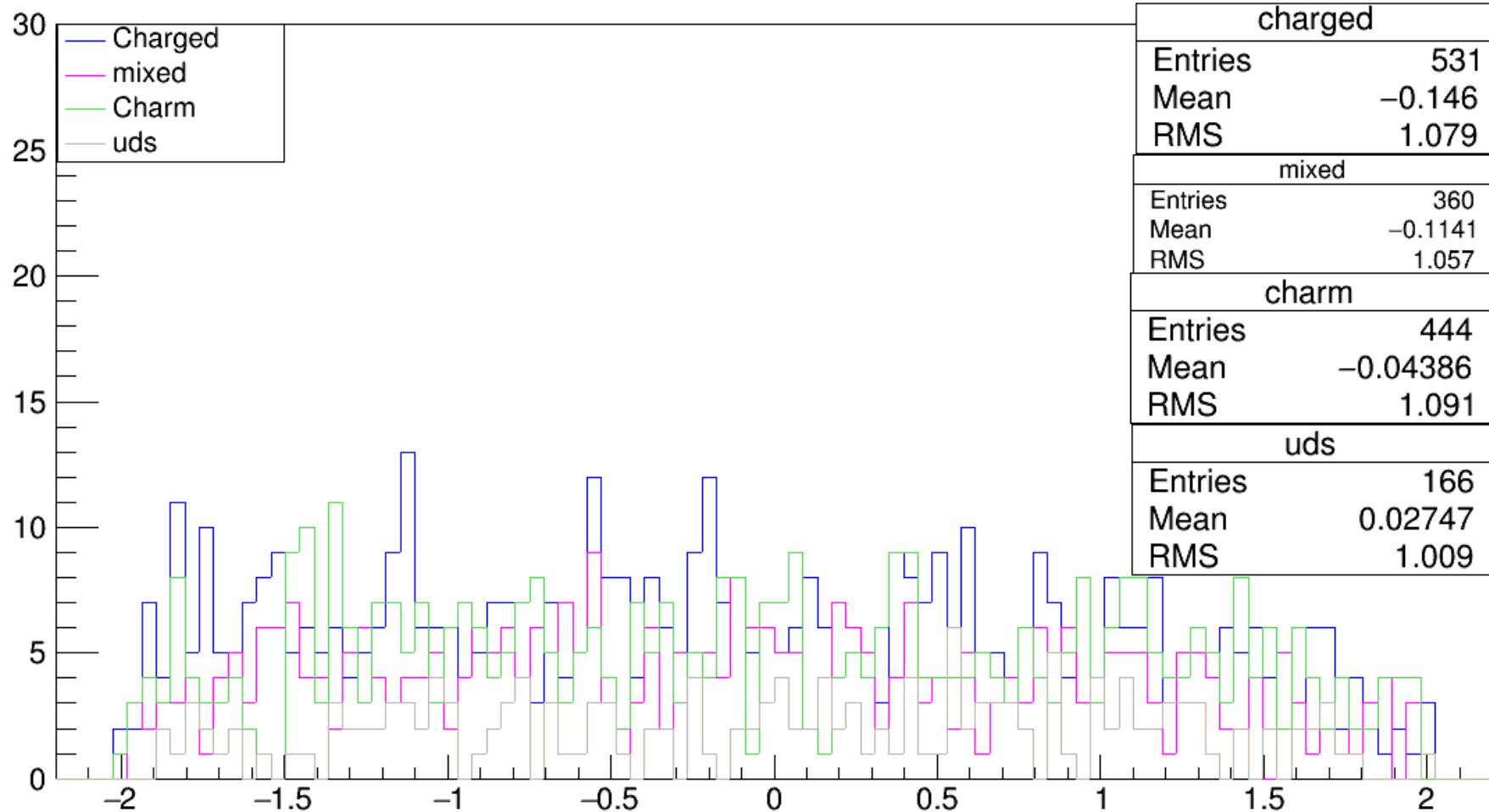
cos(PBtag,Pvis) around D*[abs(m_D-2.006)<0.03] generic MC



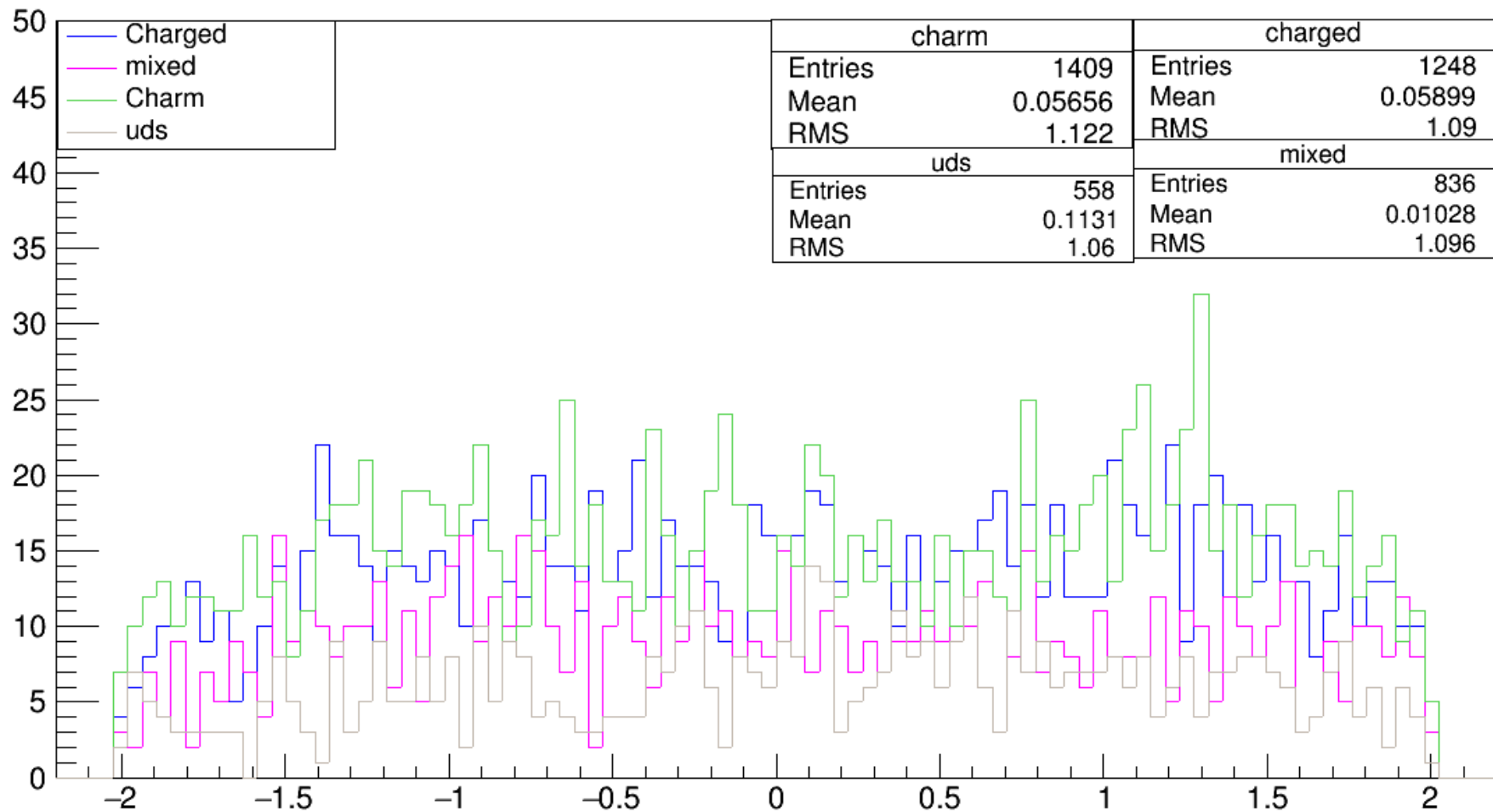
cos(PBtag,Pvis) in the region between D and D*[abs(m_D-1.96)<0.03] generic MC



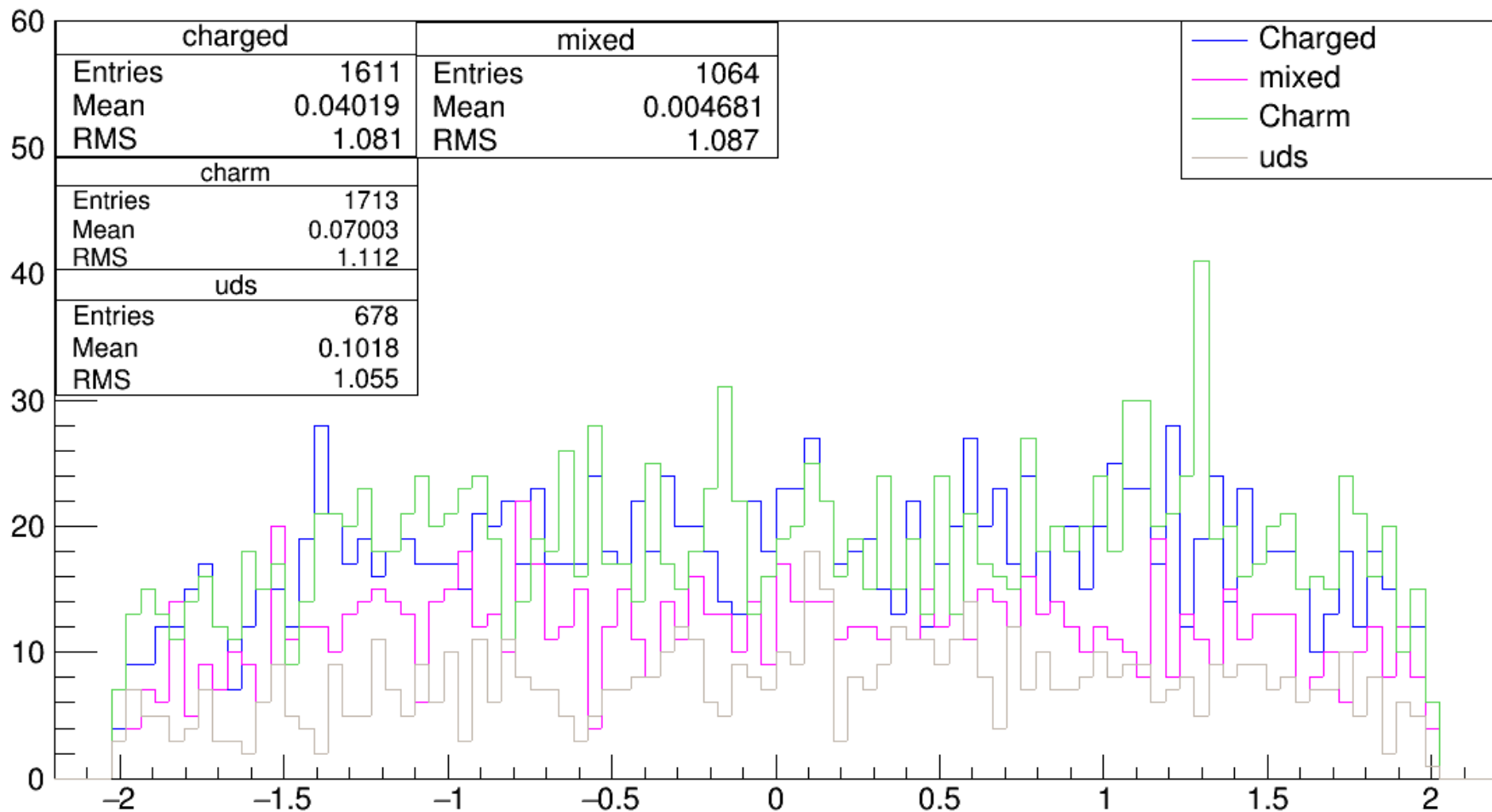
cos(PBtag,Pvis) less than D[m_D<1.86] generic MC



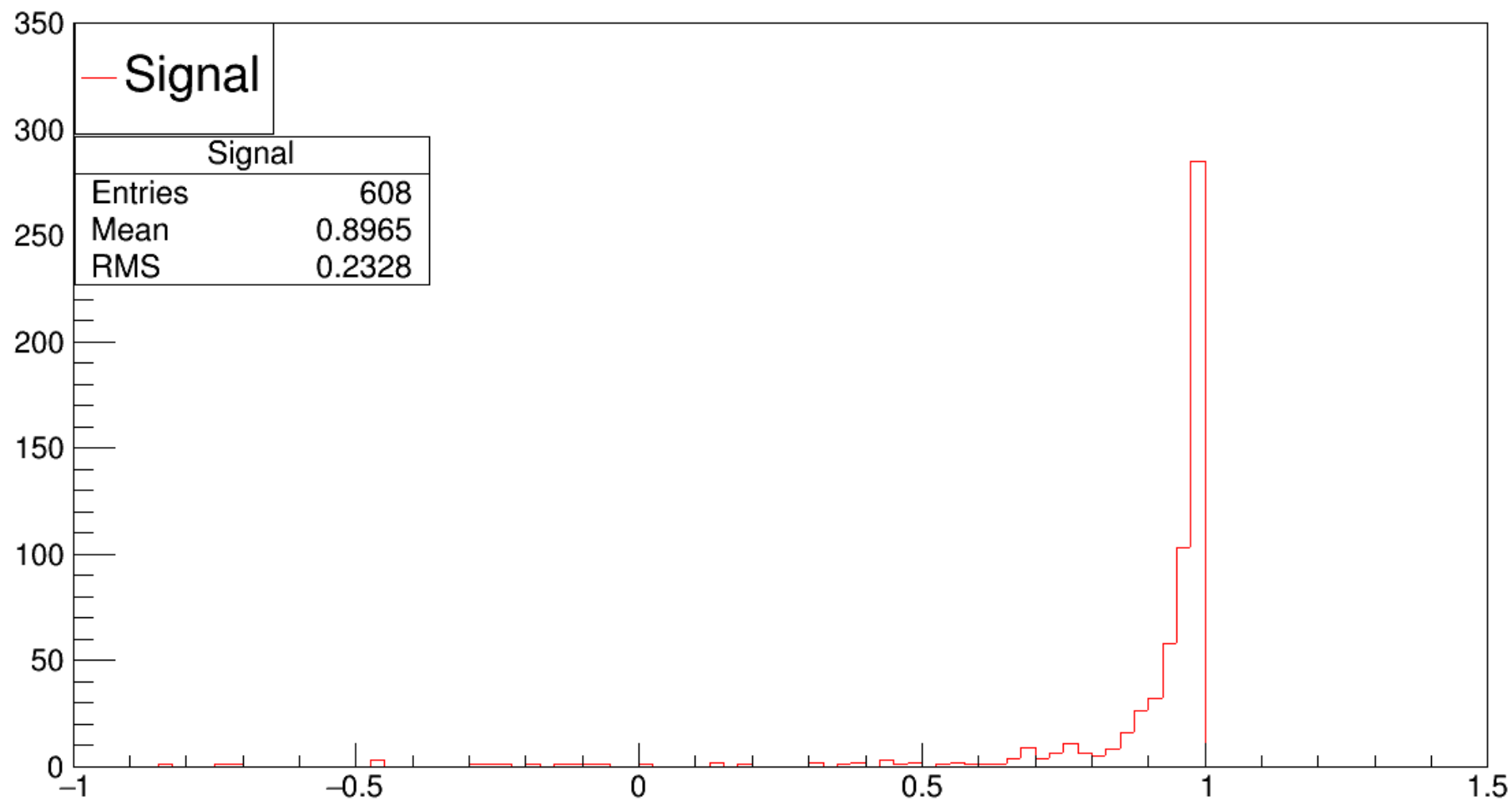
cos(PBtag,Pvis) above D*[m_D>2.006] generic MC



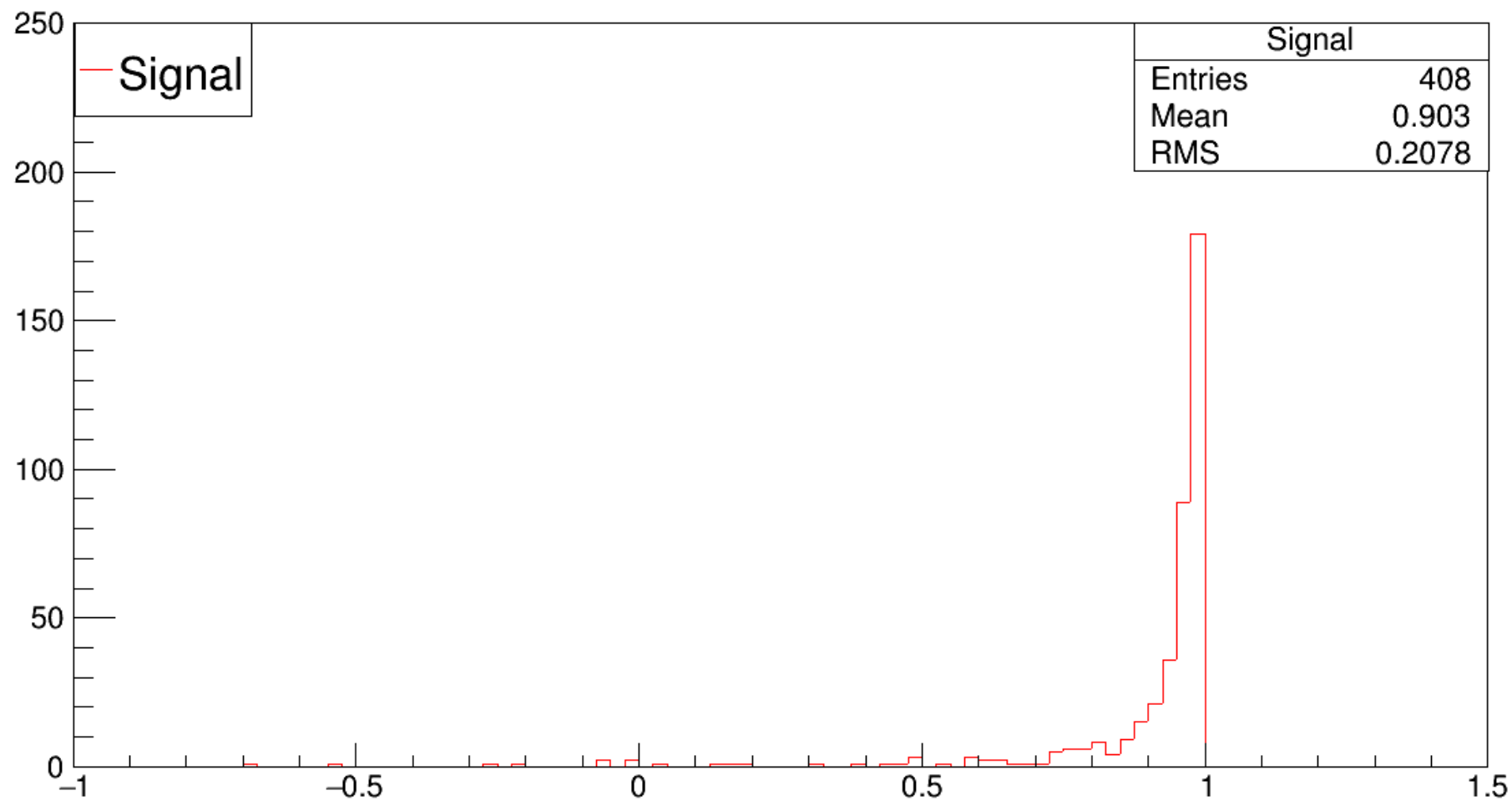
cos(PBtag,Pvis) in the region [m_D-1.86 > 0.015] generic MC



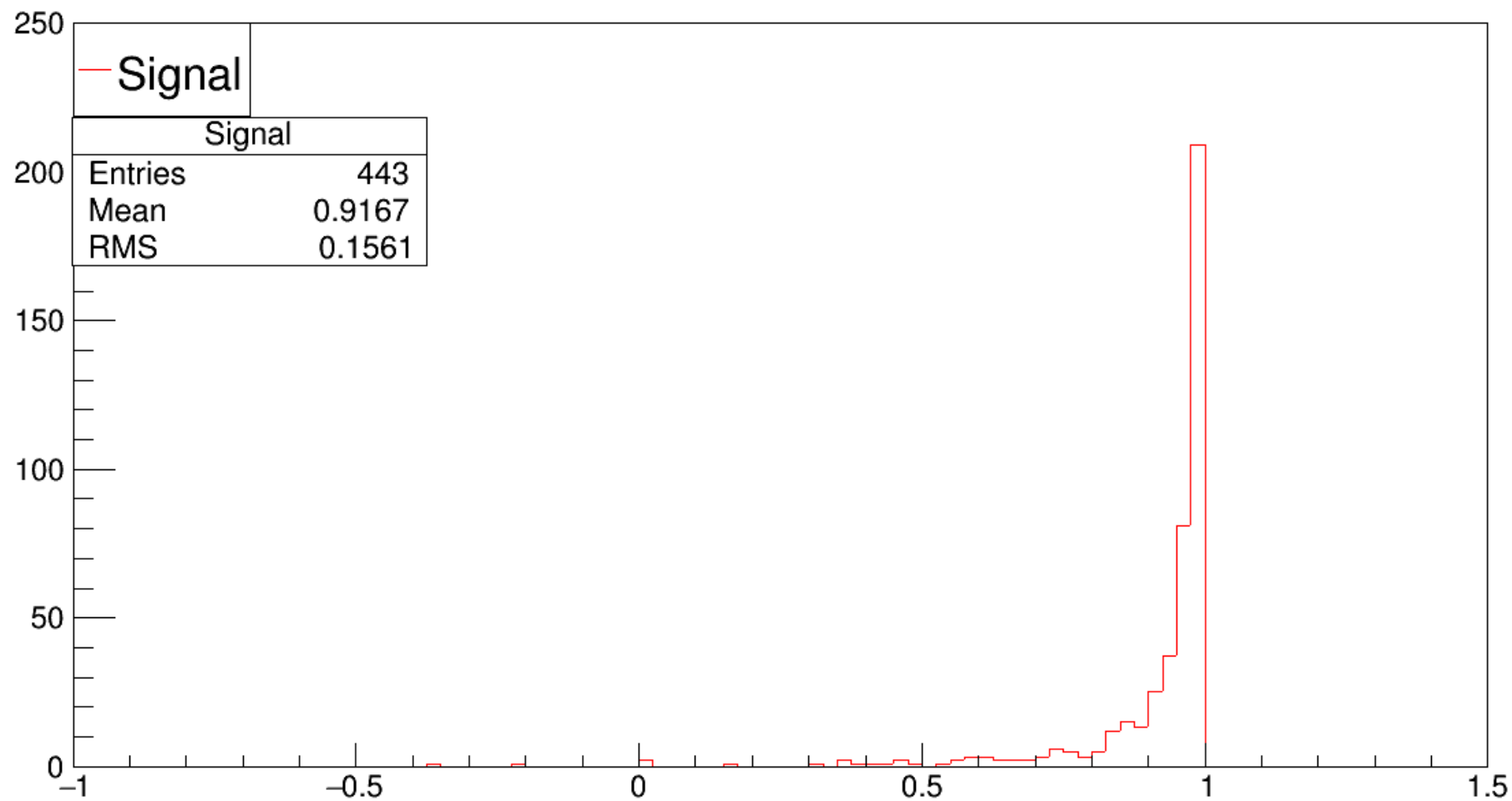
sin_phi in the region around D[abs(m_D-1.86)<0.015] Sig. MC



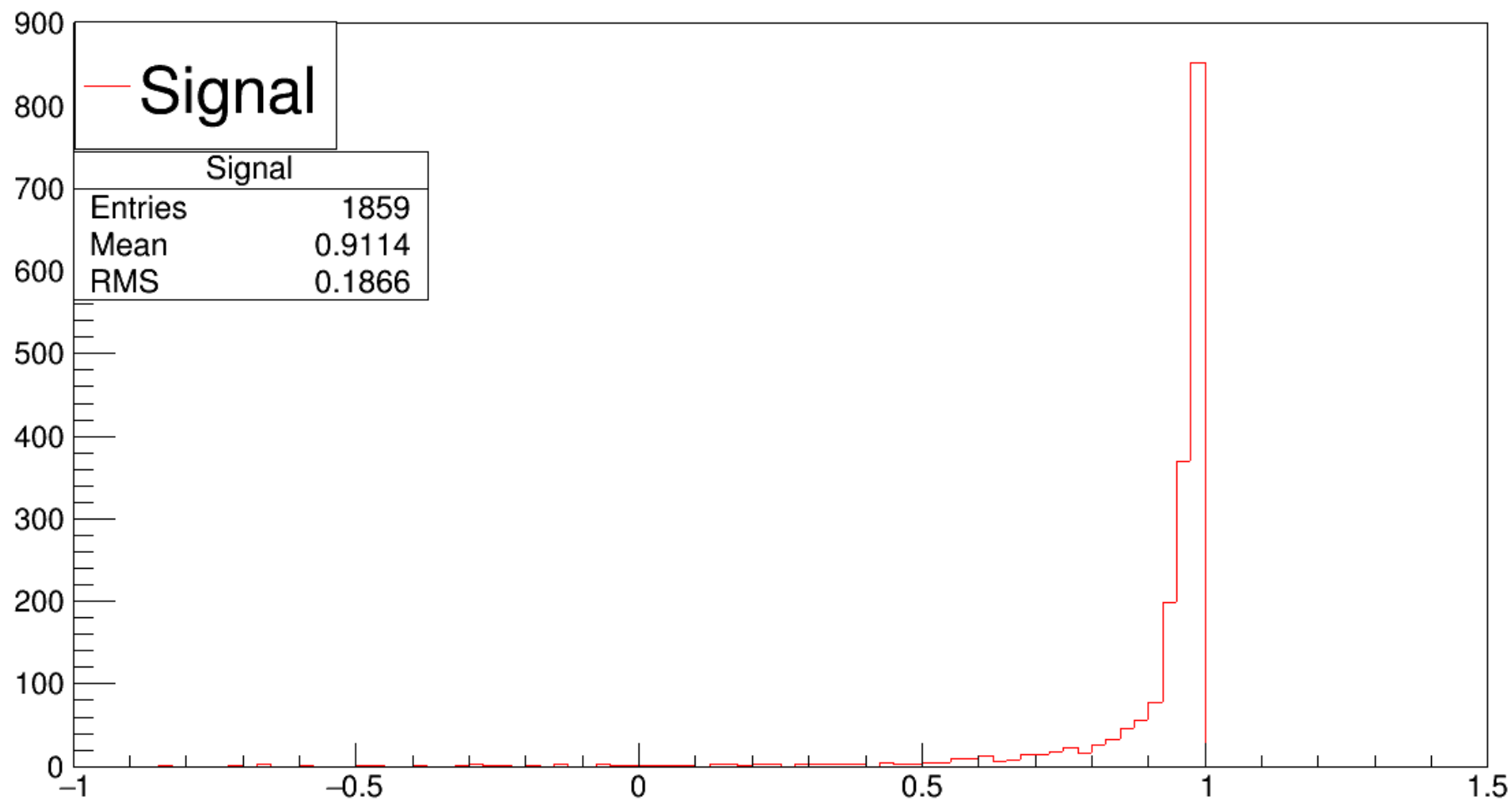
sin_phi in the region around D*[abs(m_D-2.006)<0.03] Sig. MC



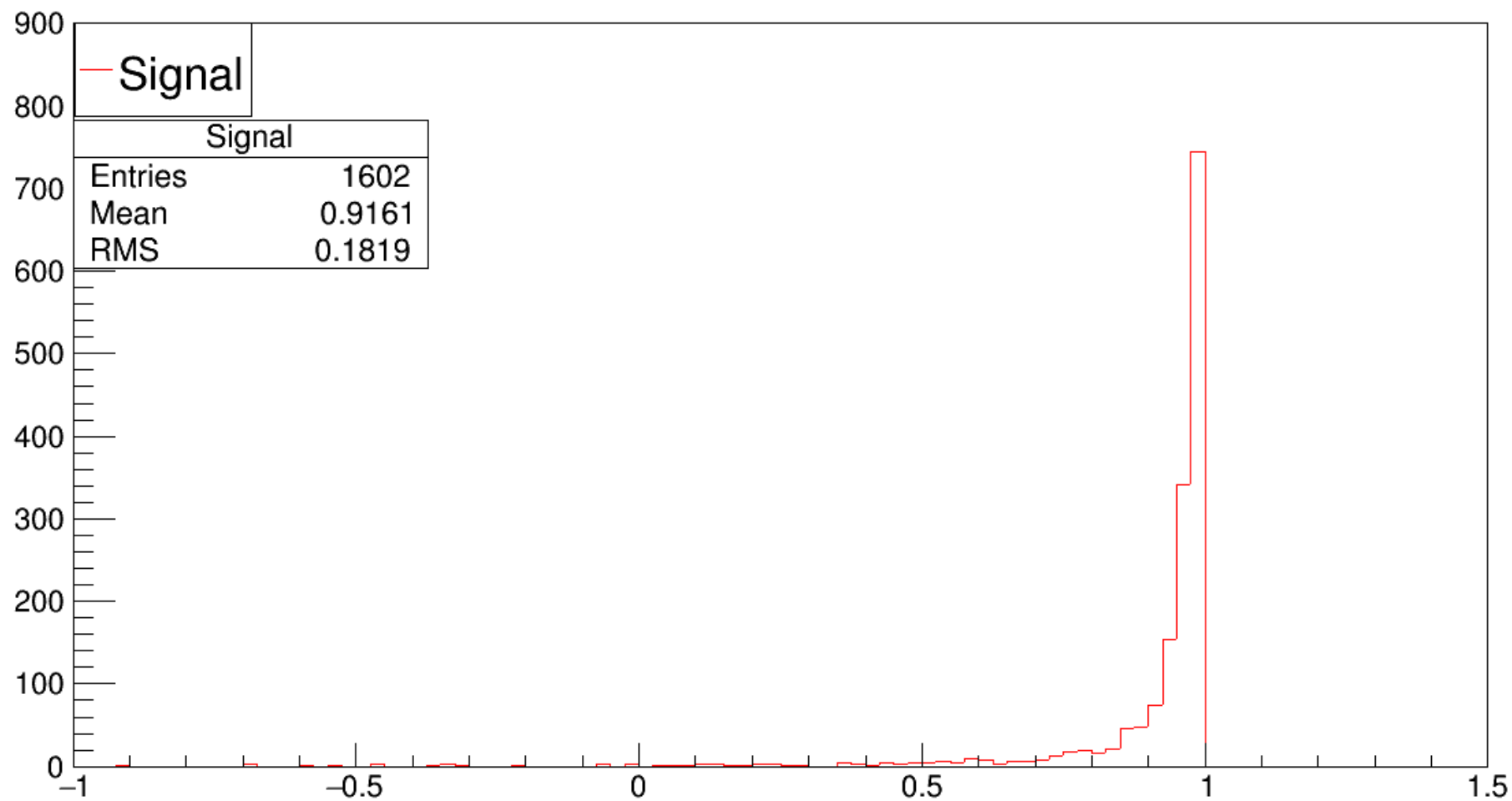
sin_phi in the region between D and D*[abs(m_D-1.96)<0.03] Sig. MC



sin_phi in the region less than D[m_D<1.86] Sig. MC



sin_phi in the region greater than D*[m_D>2.006] Sig. MC



sin_phi in the region greater than D[m_D-1.86>0.015] Sig. MC

