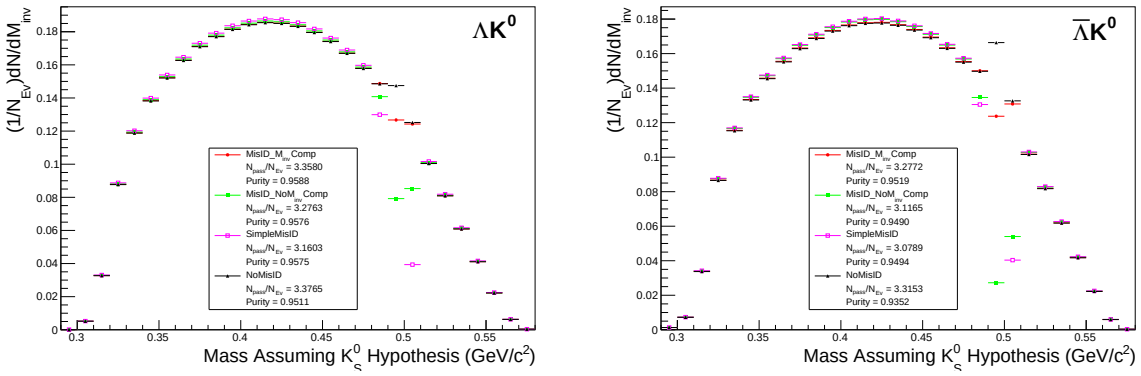
0.0.1 Λ *Reconstruction*

The following cuts were used to select good Λ ($\bar{\Lambda}$) candidates:

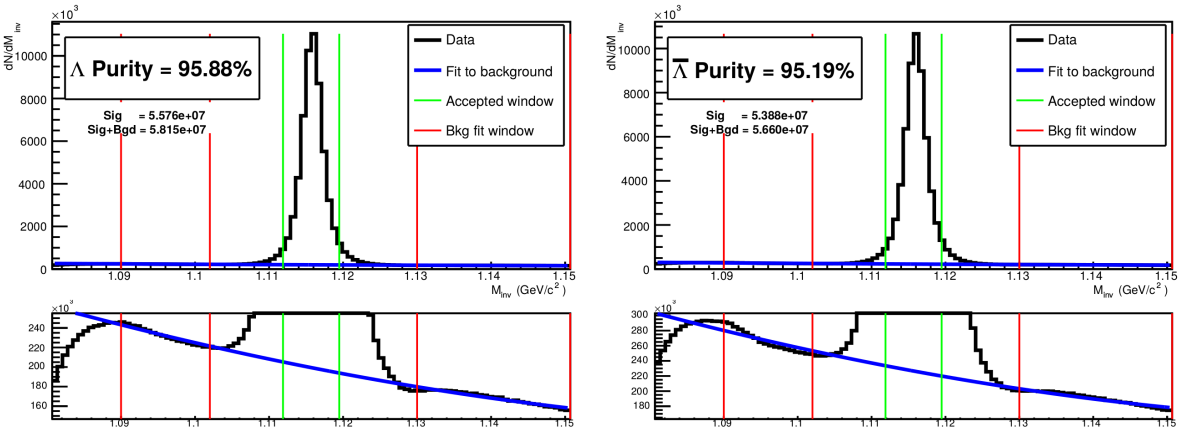
1. Cuts Common to Both Daughters
   (a) $|\eta| < 0.8$
   (b) SetTPCnclsDaughters(80)
   (c) SetStatusDaughters(AliESDtrack::kTPCrefic)
   (d) SetMaxDcaV0Daughters(0.4)
2. Pion Specific Daughter Cuts
   (a) $p_T > 0.16$
   (b) DCA to prim vertex > 0.3
3. Proton Specific Daughter Cuts
   (a) $p_T >$
      – 0.5 (p)
      – 0.3 ($\bar{p}$)
   (b) DCA to prim vertex > 0.1
4. V0 Cuts
   (a) $|\eta| < 0.8$
   (b) $p_T > 0.4$
   (c) $|m_{inv} - m_{PDG}| < 3.8$ MeV
   (d) Cosine of pointing angle > 0.9993
   (e) OnFlyStatus = false
   (f) Decay Length < 60 cm



(a) Mass assuming K^0_S-hypothesis for Λ collection, i.e. assume the daughters are $\pi^+\pi^-$ instead of $p^+\pi^-$.

(b) Mass assuming K^0_S-hypothesis for $\bar{\Lambda}$ collection, i.e. assume the daughters are $\pi^+\pi^-$ instead of $\pi^+\bar{p}^-$.

Fig. 1: Mass assuming K^0_S-hypothesis for V0 candidates passing all Λ (1a) and $\bar{\Lambda}$ (1b) cuts. The "NoMisID" distribution (black triangles) uses the V0 finder without any attempt to remove misidentified K^0_S. The slight peak in the "NoMisID" distribution around $m_{inv} = 0.5$ GeV/c^2 likely contains misidentified K^0_S particles in our Λ collection. "SimpleMisID" (pink squares) simply cuts out the entire peak, which throws away some good Λ and $\bar{\Lambda}$ particles. "MisID_NoM$_{inv}$Comp" (green squares) uses the misidentification cut outlined in the text, but does not utilize the invariant mass comparison method. "MisID_M$_{inv}$Comp" (red circles) utilizes the full misidentification methods, and is currently used for this analysis. "N$_{pass}$/N$_{ev}$" is the total number of $\Lambda(\bar{\Lambda})$ particles found, normalized by the total number of events. The purity of the collection is also listed. If one simply cuts out the entire peak, good Λ particles will be lost. Ideally, the Λ selection and K^0_S misidentification cuts are selected such that the peak is removed from this plot while leaving the distribution continuous.



(a) Λ Purity

(b) $\bar{\Lambda}$ Purity

Fig. 2: Λ and $\bar{\Lambda}$ Purity