

Figure 1: 4-momentum transfer squared for the protons left and right

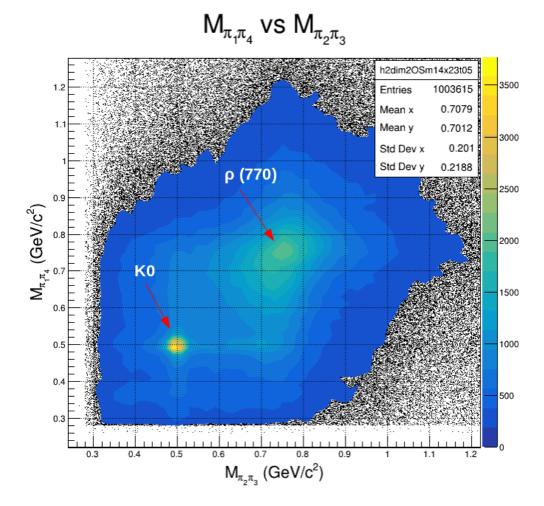


Figure 2: Pion pair scatter plot – full 2018 data

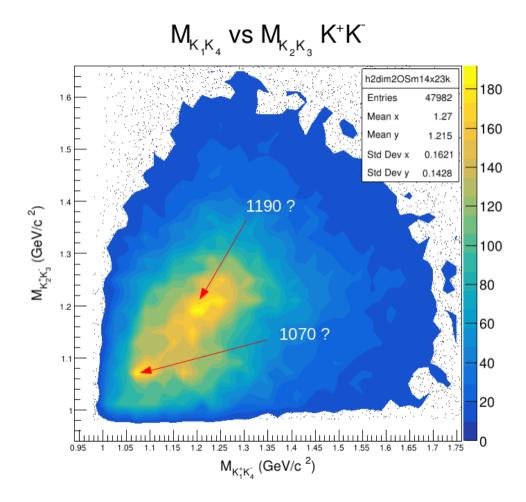


Figure 3: Kaon pair scatter plot – small sample, no PID; notice that we do not see $\phi(1020)\phi(1020)$ events, but they ought to be present; perhaps we need more statistic

K0sK0s channel balance 2018 TB/BT+TT/BB

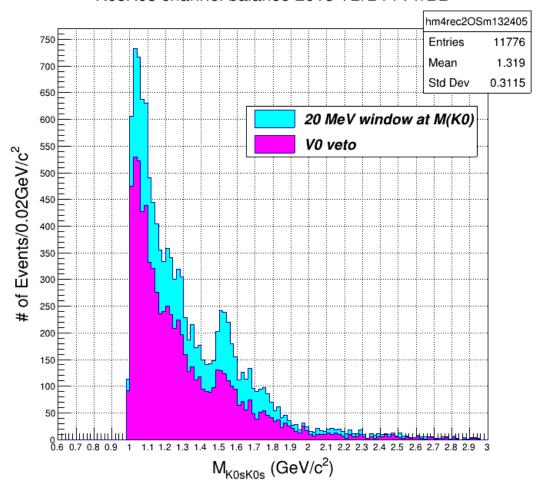


Figure 4: 1540 MeV signal observed on the K0sK0s channel via 20MeV window at M(K0); V0 veto filters events that are not present in the Kalman's K0s collection

K0sK0s channel 2018 TB/BT+TT/BB subtraction hm4rec2OSm132405 220 Entries 3970 Mean 1.37 200 Std Dev 0.3265 180 Mass window - V0 veto 160 # of Events/0.02GeV/c² 140 120 100 80 20 0.6 0.7 0.8 0.9 1 1.1 1.2 1.3 1.4 1.5 1.6 1.7 1.8 1.9 2 2.1 2.2 2.3 2.4 2.5 2.6 2.7 2.8 2.9 3

Figure 5: Subtracting the magenta from the cyan events in the previous figure, we have a set related to the secondary vertices only

 $\rm M_{\rm K0sK0s}~(GeV/c^2)$

K0sK0s channel 2018 TB/BT+TT/BB 20 MeV window at M(K0)

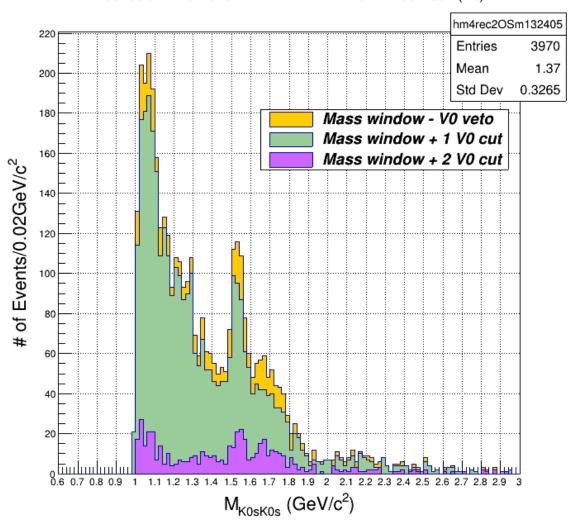


Figure 6: Comparison of 2V0 and 1V0 events present in the yellow set (fig.5)

K0sK0s channel 2018 TB/BT+TT/BB 20 MeV window at M(K0)

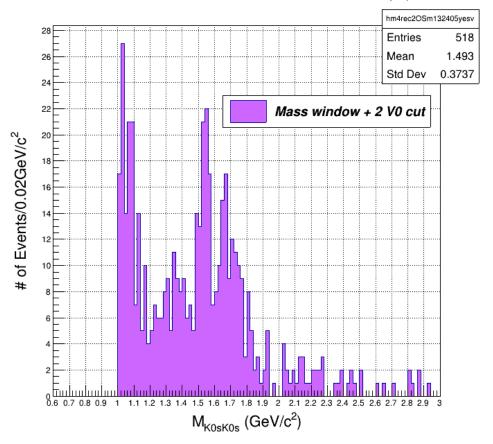


Figure 7: Actual K0sK0s mass distribution produced via the mass window technique; the shape of the structure is similar to that one obtained from the Kalman filter (fig.8)

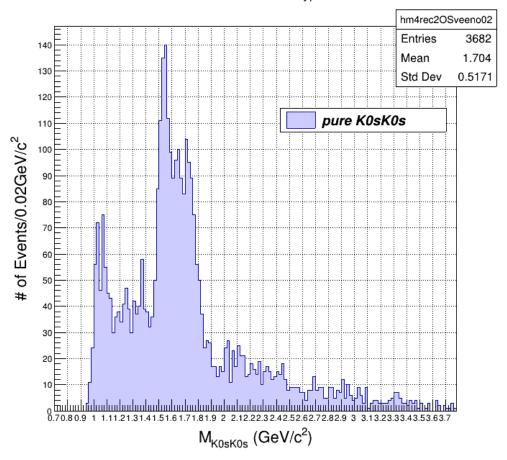


Figure 8: M(K0sK0s) distribution via Kalman filter – full 2018 data; there is a signal around 1 GeV; could it be $\phi(1020)$?

M(K0sK0s) balance 2018 Kalman type:02 TT/BB+TB/BT

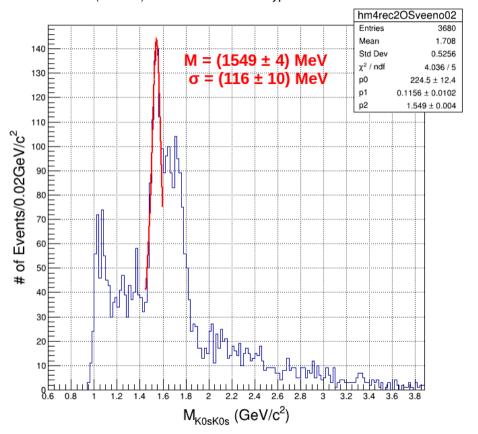


Figure 9: Breit-Wigner fit for the 1549 MeV signal on the K0sK0s channel

M(K0sK0s) balance 2018 Kalman type:02 TT/BB+TB/BT

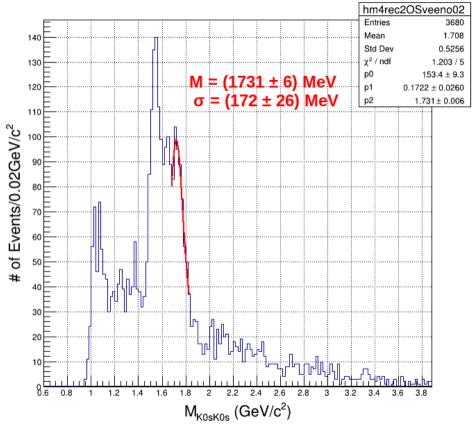


Figure 10: Breit-Wigner fit for the 1731 MeV signal on the K0sK0s channel

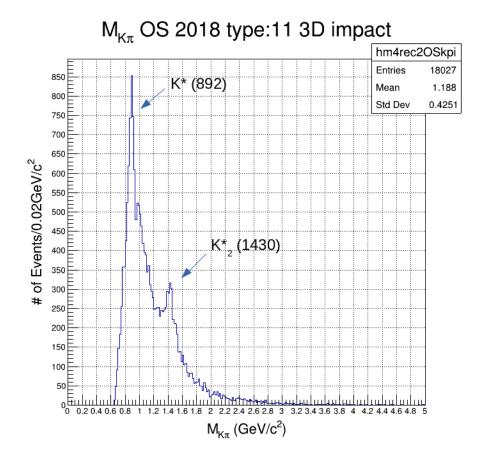


Figure 11: One primary and one secondary vertex, K^* -->K+pi- or K^* -->K-pi+ events