

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

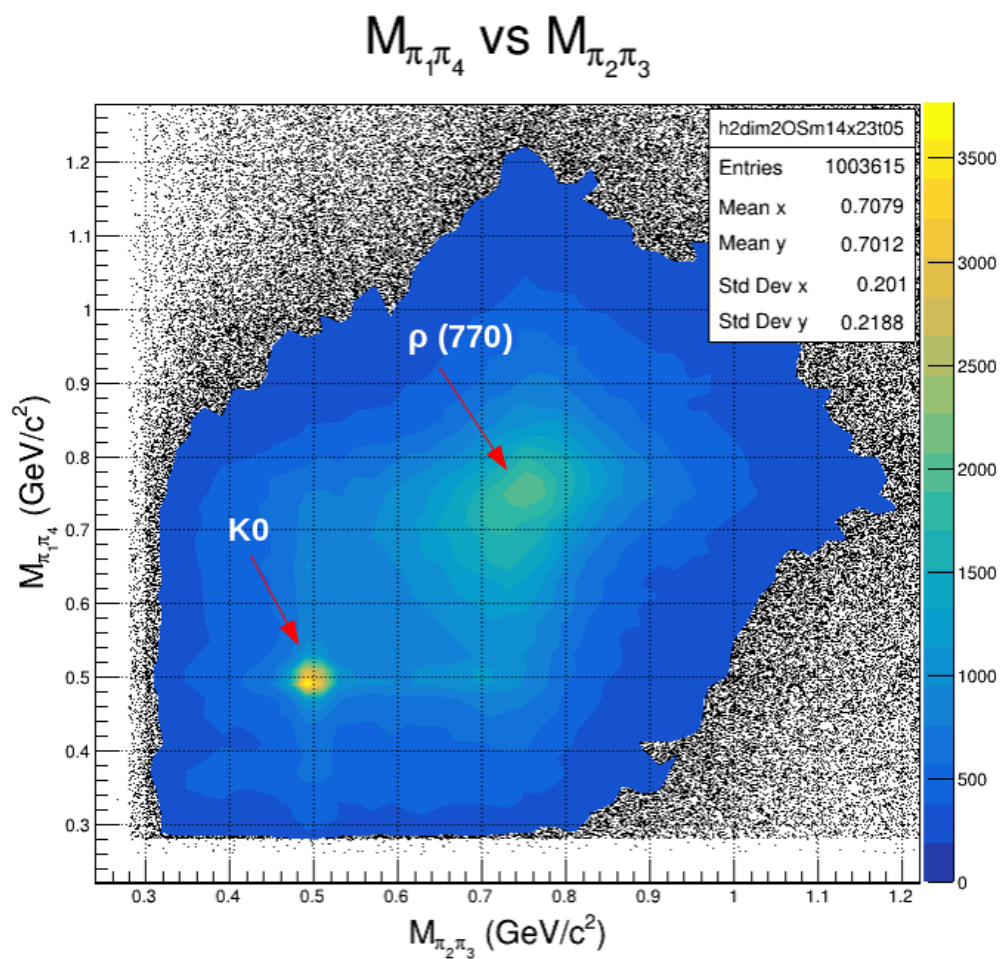


Figure 2: Pion pair scatter plot – full 2018 data

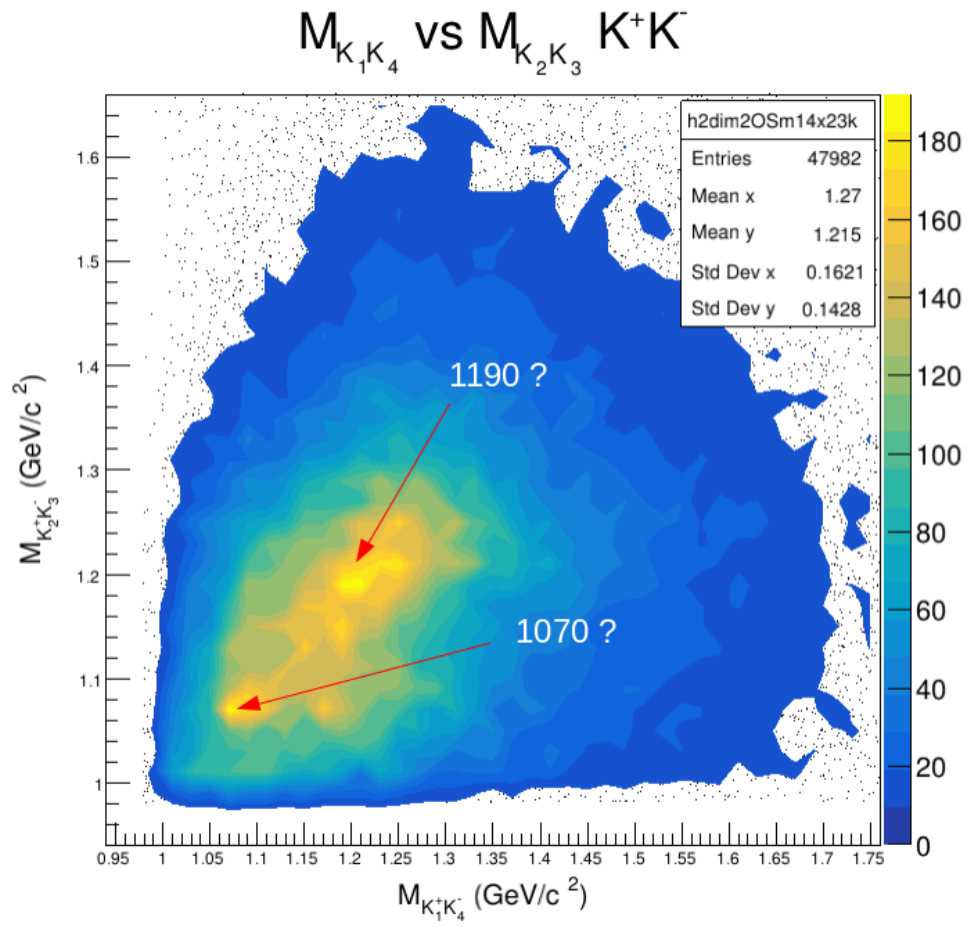


Figure 3: Kaon pair scatter plot – small sample, no PID; notice that we do not see $\phi(1020)\phi(1020)$ events, but they ought to be present; perhaps we need more statistic

K0sK0s channel balance 2018 TB/BT+TT/BB

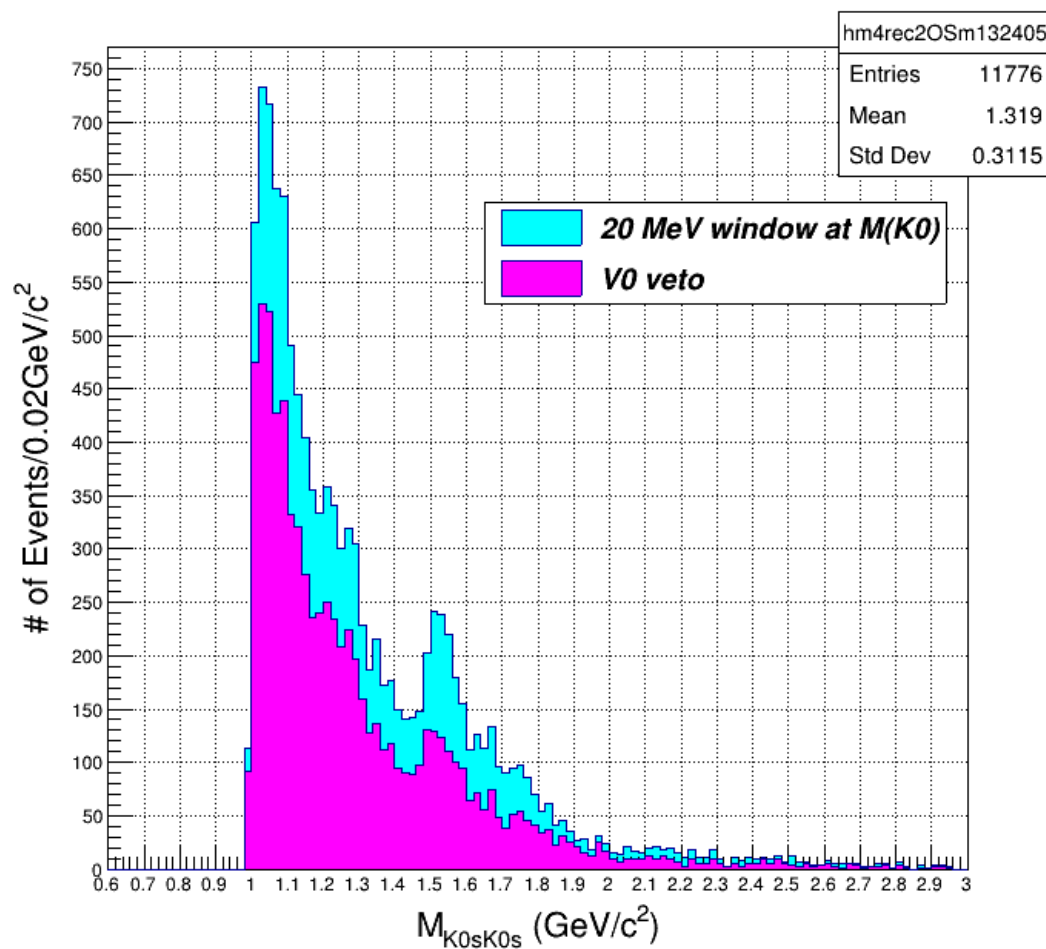


Figure 4: 1540 MeV signal observed on the $K0sK0s$ channel via 20MeV window at $M(K0)$; V0 veto filters events that are not present in the Kalman's $K0s$ collection

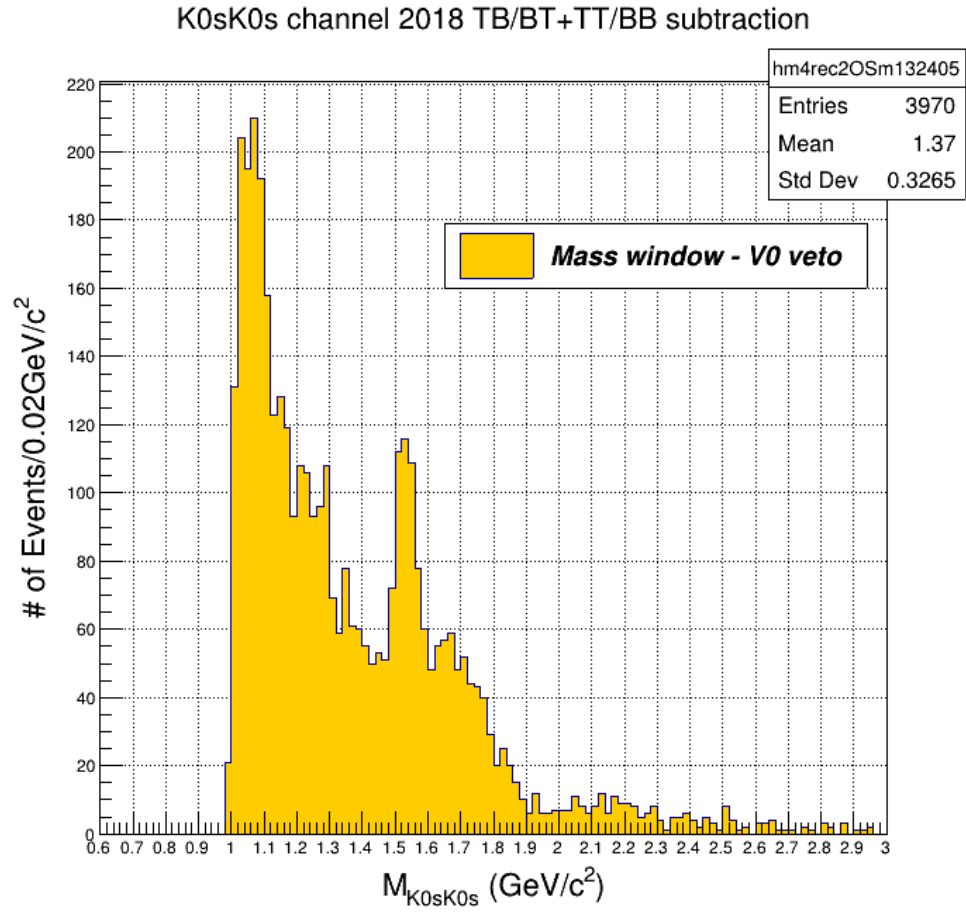


Figure 5: Subtracting the magenta from the cyan events in the previous figure, we have a set related to the secondary vertices only

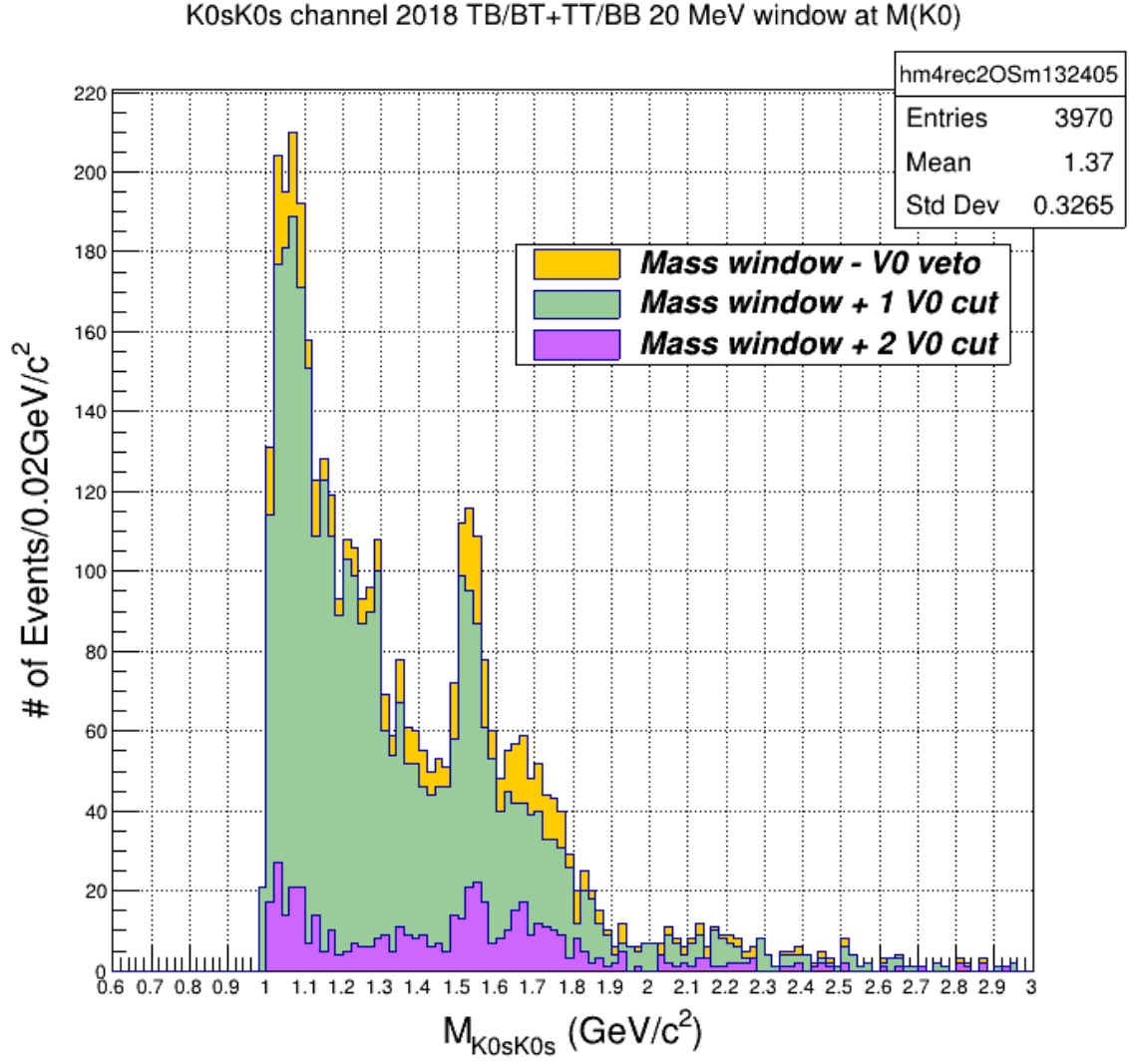


Figure 6: Comparison of 2V0 and 1V0 events present in the yellow set (fig.5)

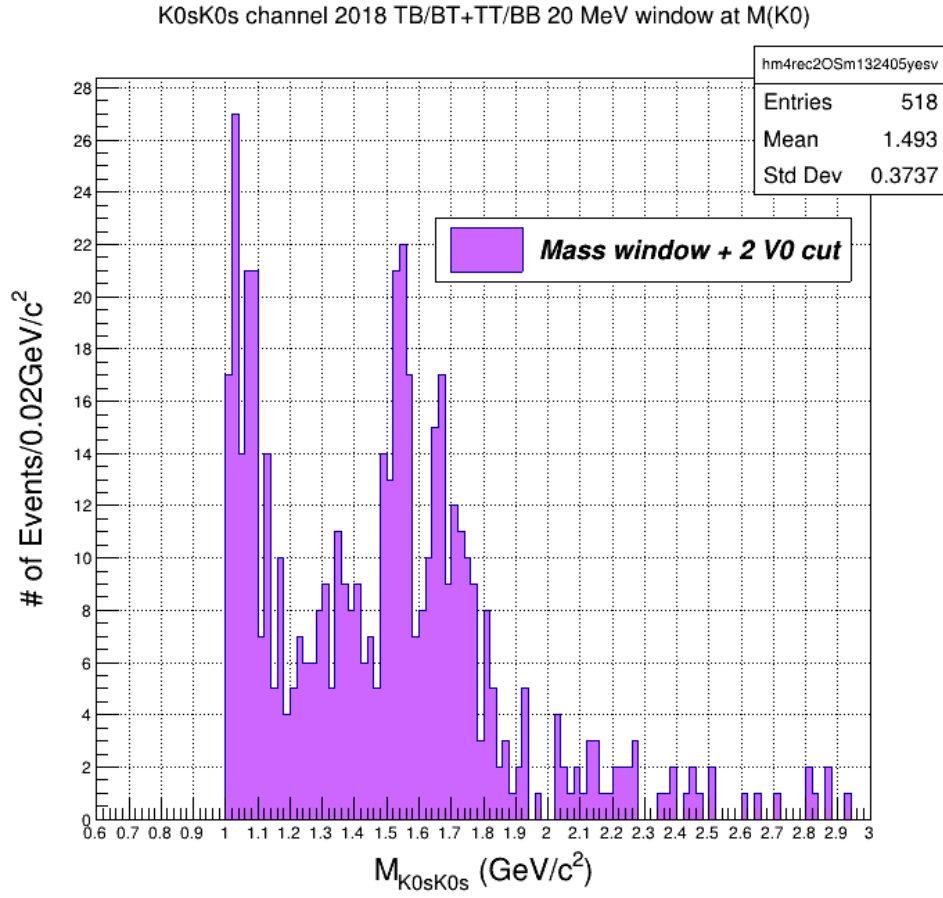


Figure 7: Actual K0sK0s mass distribution produced via the mass window technique; the shape of the structure is similar to that one obtained from the Kalman filter (fig.8)

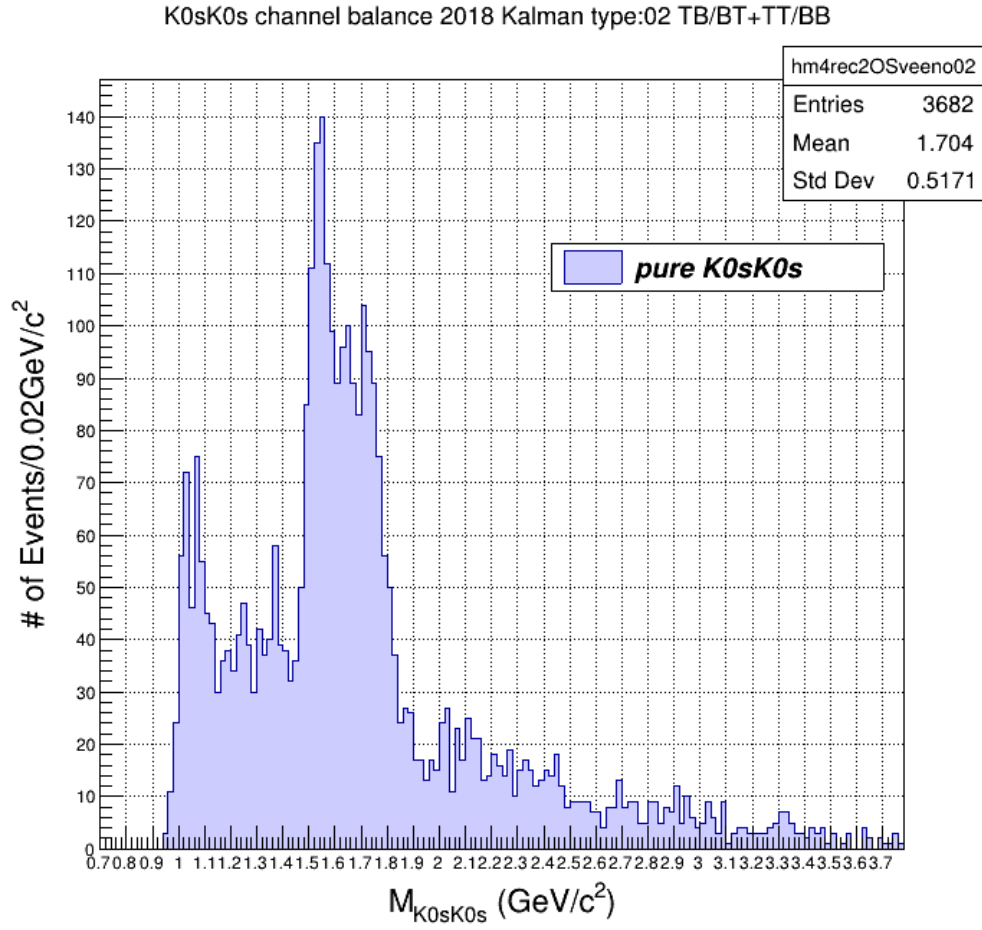


Figure 8: $M(K0sK0s)$ distribution via Kalman filter – full 2018 data;
there is a signal around 1 GeV; could it be $\phi(1020)$?

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

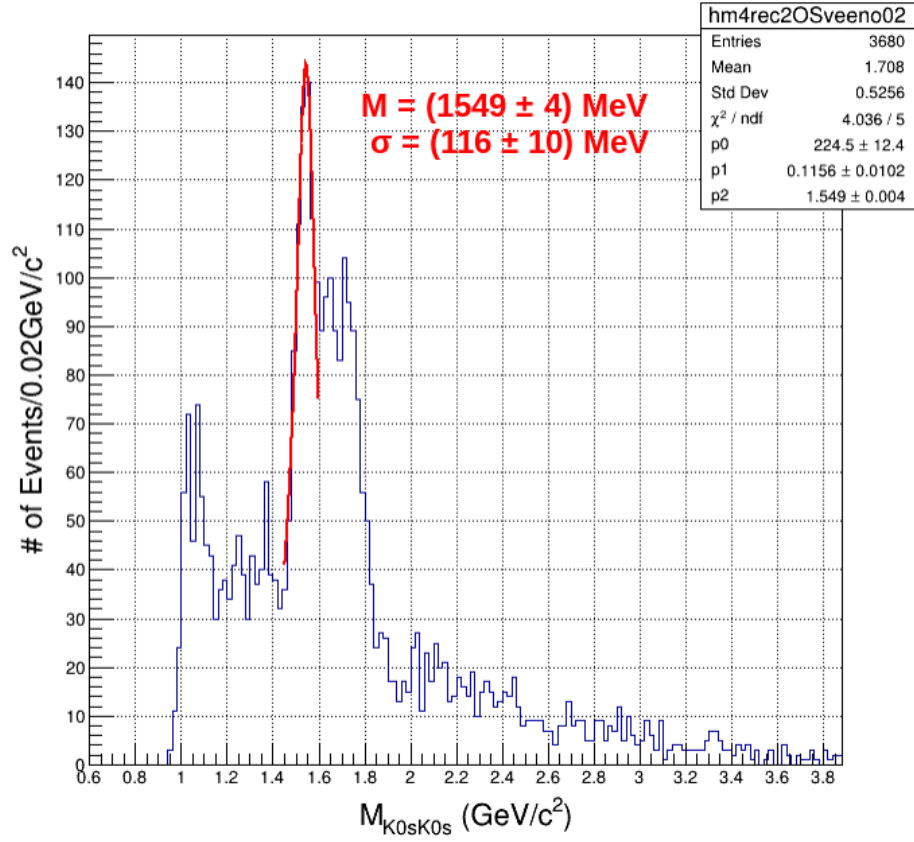


Figure 9: Breit-Wigner fit for the 1549 MeV signal on the K0sK0s channel

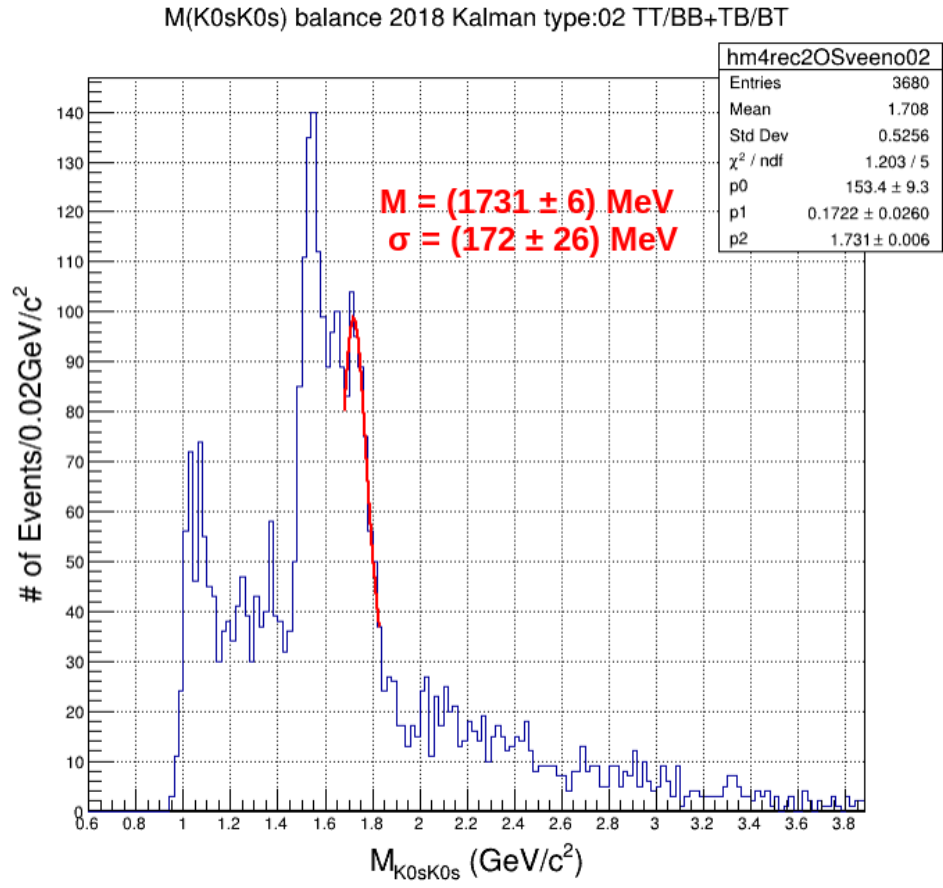


Figure 10: Breit-Wigner fit for the 1731 MeV signal on the K⁰sK⁰s channel

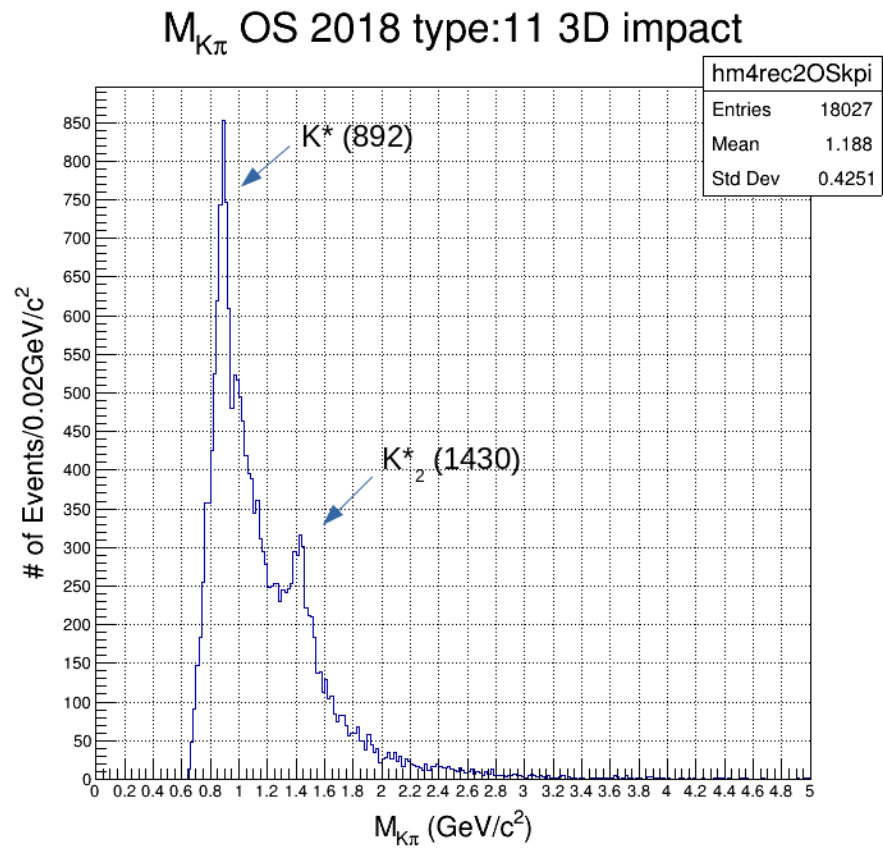


Figure 11: One primary and one secondary vertex, $K^* \rightarrow K + \pi^-$ or $K^* \rightarrow K + \pi^+$ events