

2018. 02. 07 하늘 미팅

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# $J^P(=??)$ of $\Sigma(1670)$

- $\Lambda_c^+ \rightarrow \Sigma(1670)\pi \rightarrow \Lambda(1405)\pi\pi \rightarrow \Sigma\pi\pi\pi$  50k
- $\Lambda_c^+ \rightarrow \Sigma\pi\pi\pi$  100k
- $\Lambda_c^+ \rightarrow \Sigma\omega \rightarrow \Sigma\pi^+\pi^-\pi^0$  50k
- $\Lambda_c^+ \rightarrow \Sigma\rho\pi \rightarrow \Sigma\pi\pi\pi$  50k

mass : TRadnom -> BreitWigner(mass,width)

# Charge combinations

$$1. \Lambda_c^+ \rightarrow \Sigma(1670)^+\pi^0 \rightarrow \Lambda(1405)\pi^+\pi^0$$

$$1\text{-a. } \Lambda_c^+ \rightarrow \Sigma(1670)^+\pi^0 \rightarrow \Lambda(1405)\pi^+\pi^0 \rightarrow \Sigma^+\pi^-\pi^+\pi^0$$

$$1\text{-b. } \Lambda_c^+ \rightarrow \Sigma(1670)^+\pi^0 \rightarrow \Lambda(1405)\pi^+\pi^0 \rightarrow \Sigma^0\pi^0\pi^+\pi^0$$

$$1\text{-c. } \Lambda_c^+ \rightarrow \Sigma(1670)^+\pi^0 \rightarrow \Lambda(1405)\pi^+\pi^0 \rightarrow \Sigma^-\pi^+\pi^+\pi^0$$

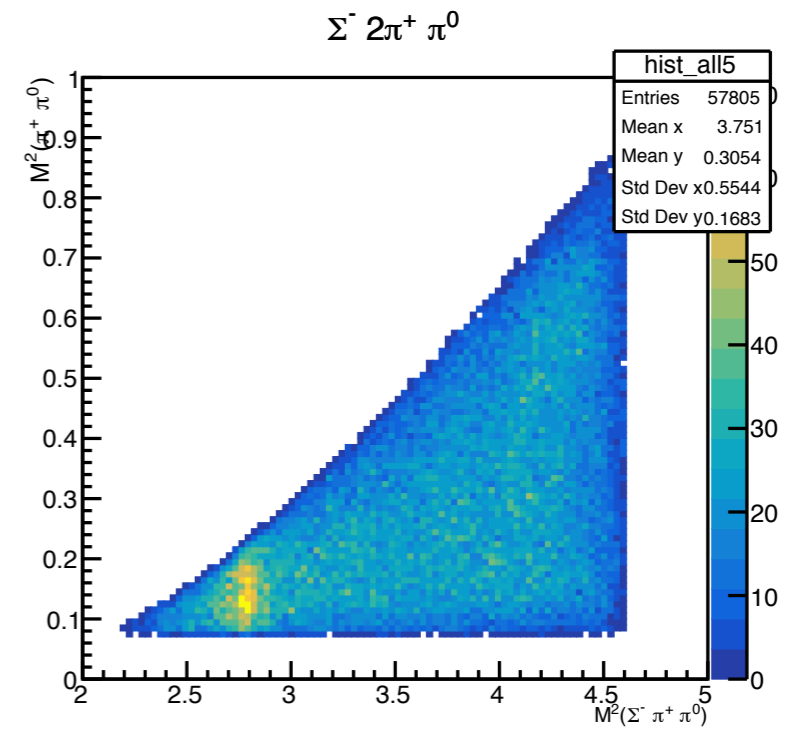
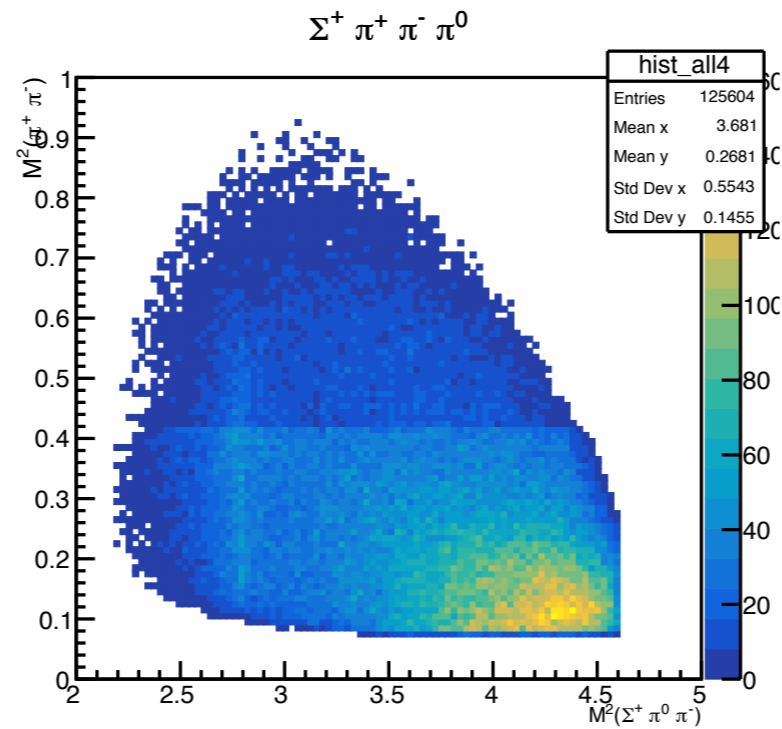
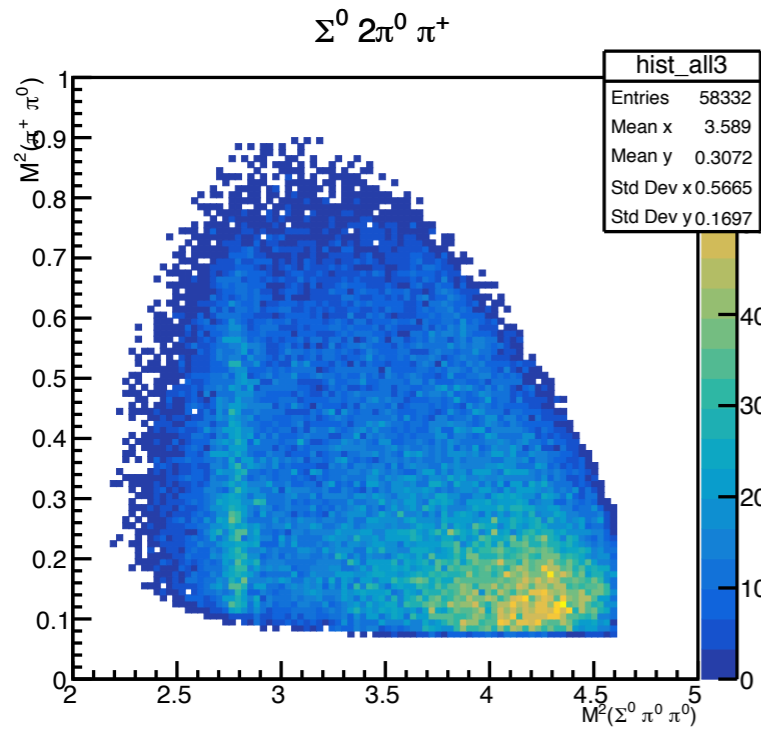
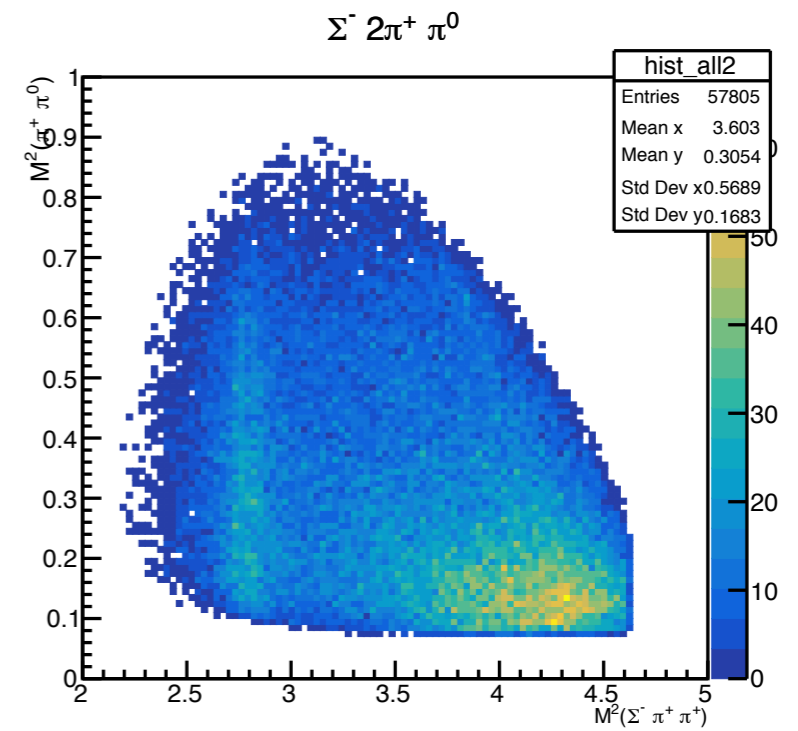
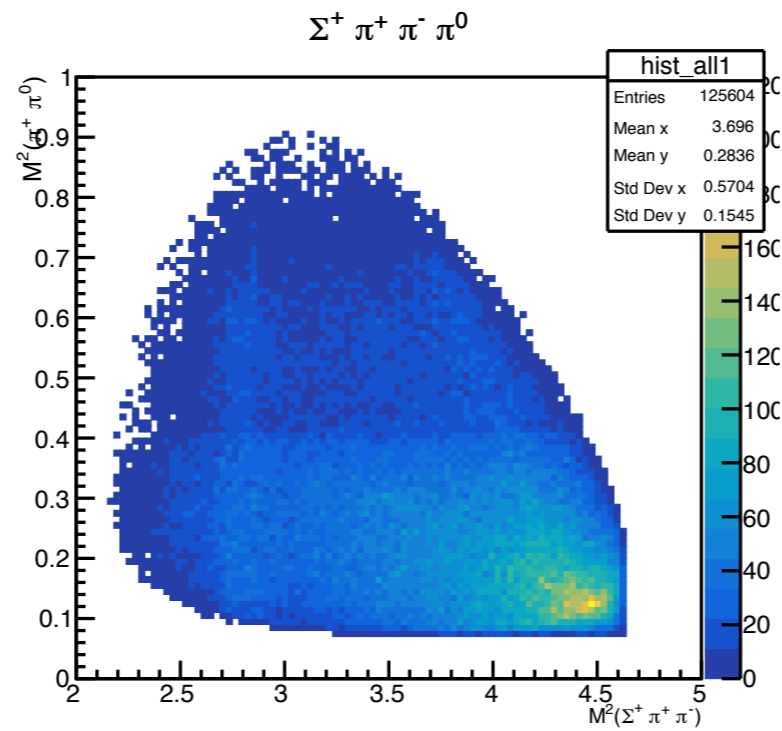
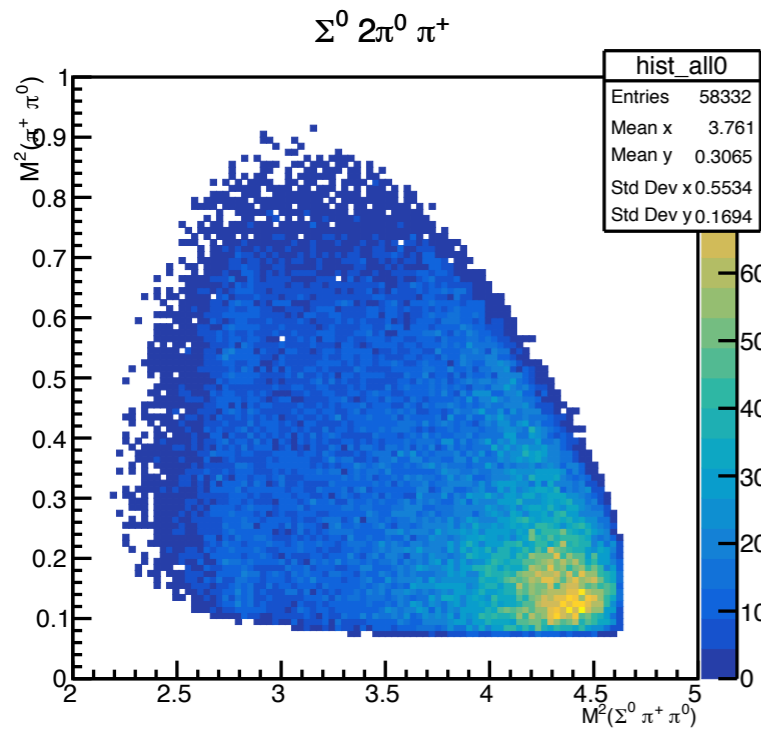
$$2. \Lambda_c^+ \rightarrow \Sigma(1670)^0\pi^+\pi^0 \rightarrow \Lambda(1405)\pi^0\pi^+$$

$$2\text{-a. } \Lambda_c^+ \rightarrow \Sigma(1670)^+\pi^0 \rightarrow \Lambda(1405)\pi^0\pi^+\pi^0 \rightarrow \Sigma^+\pi^-\pi^0\pi^+$$

$$2\text{-b. } \Lambda_c^+ \rightarrow \Sigma(1670)^+\pi^0 \rightarrow \Lambda(1405)\pi^0\pi^+\pi^0 \rightarrow \Sigma^0\pi^0\pi^0\pi^+$$

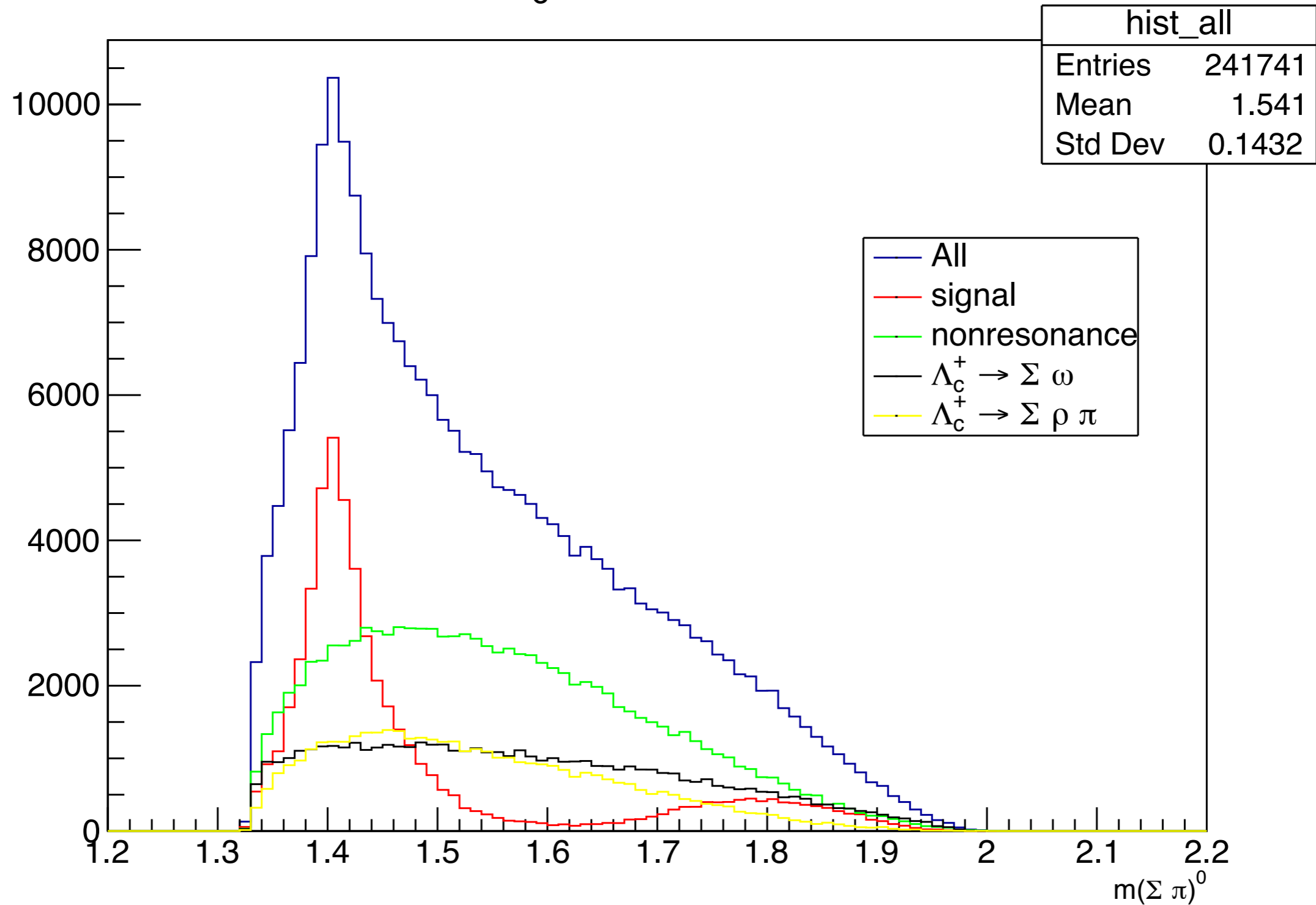
$$2\text{-c. } \Lambda_c^+ \rightarrow \Sigma(1670)^+\pi^0 \rightarrow \Lambda(1405)\pi^0\pi^+\pi^0 \rightarrow \Sigma^-\pi^+\pi^0\pi^+$$

# Dalitz plot

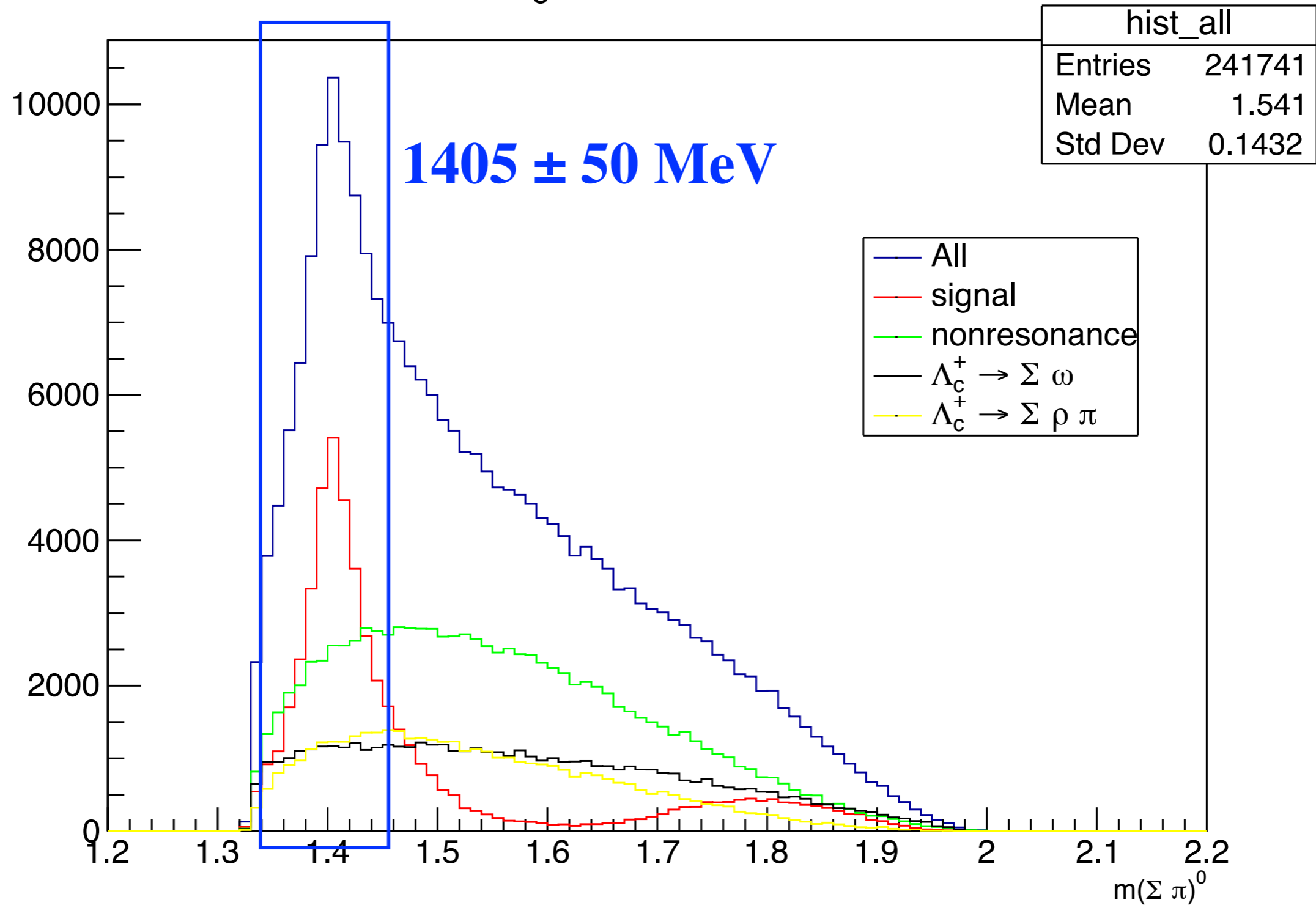
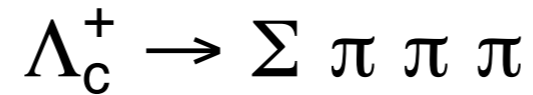


# Reconstruction $\Lambda 1405$

$$\Lambda_c^+ \rightarrow \Sigma \pi \pi \pi$$

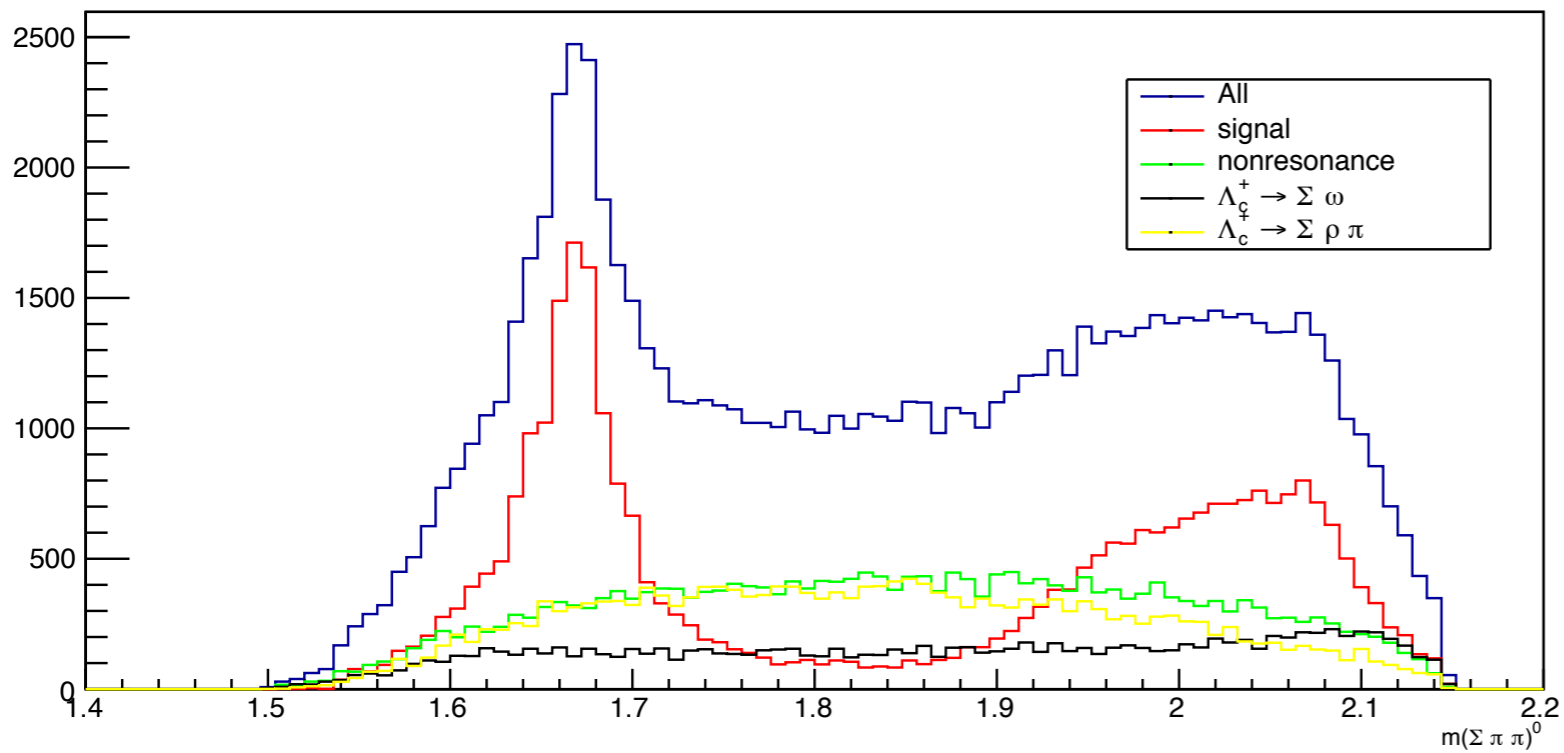


# Reconstruction $\Lambda 1405$



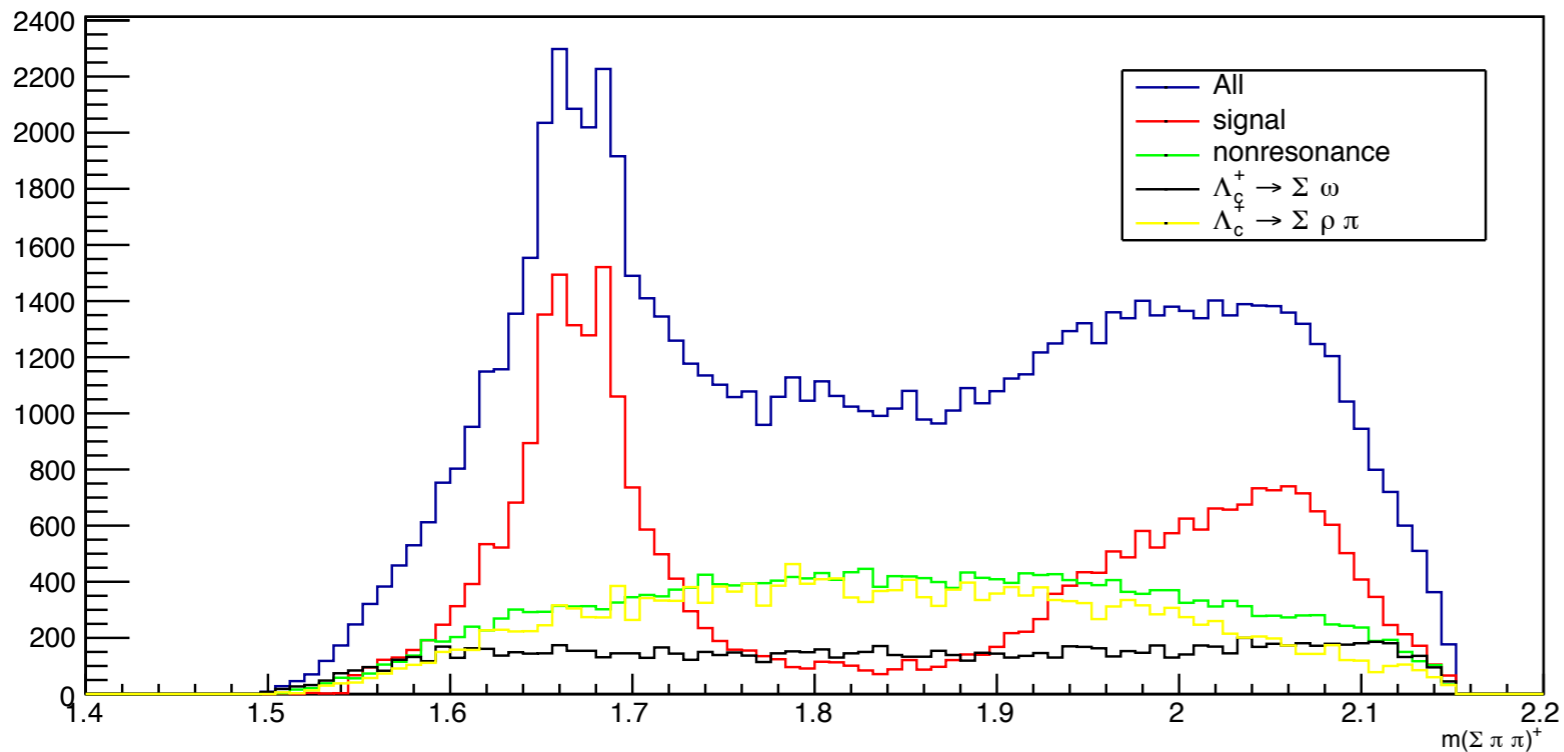
# Reconstruction $\Sigma(1670)$

$$\Lambda_c^+ \rightarrow \Sigma \pi \pi \pi$$



$\Sigma(1670)^+$

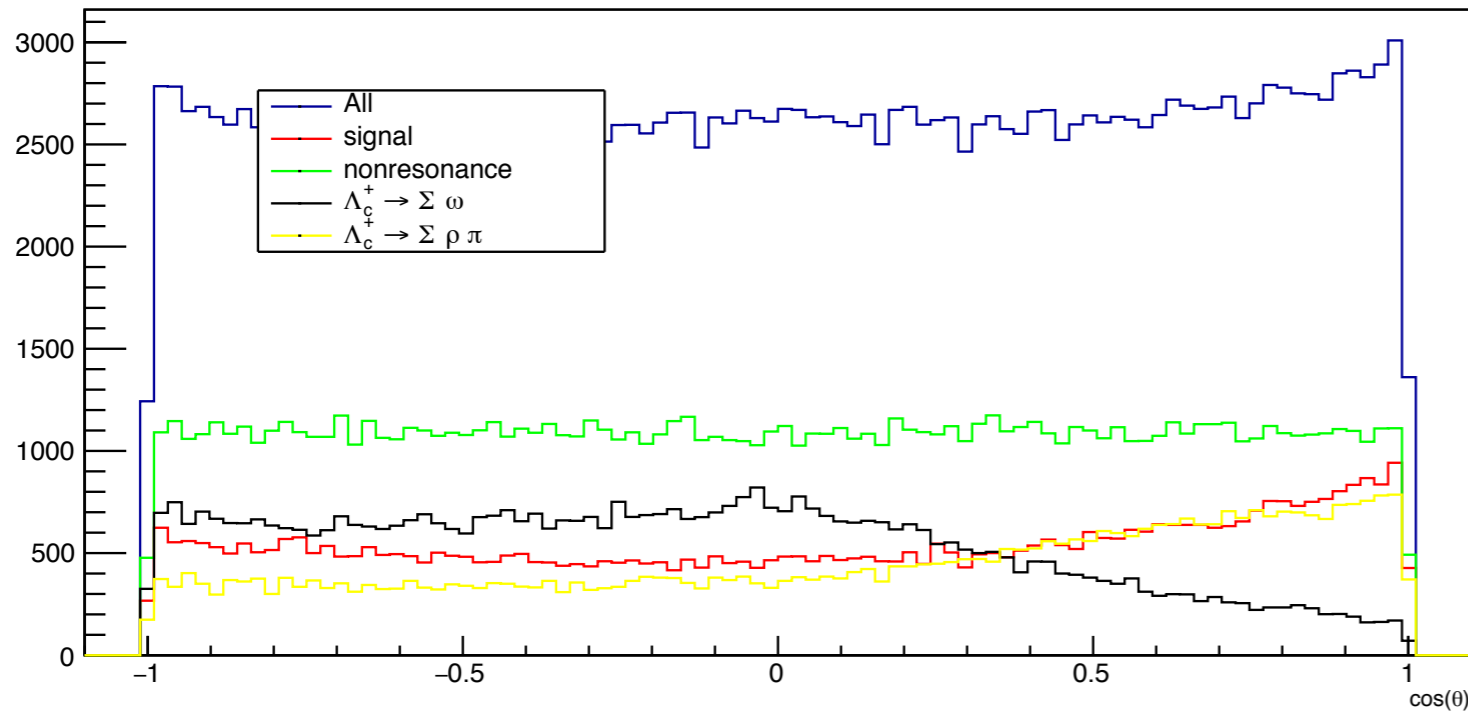
$$\Lambda_c^+ \rightarrow \Sigma \pi \pi \pi$$



$\Sigma(1670)^0$

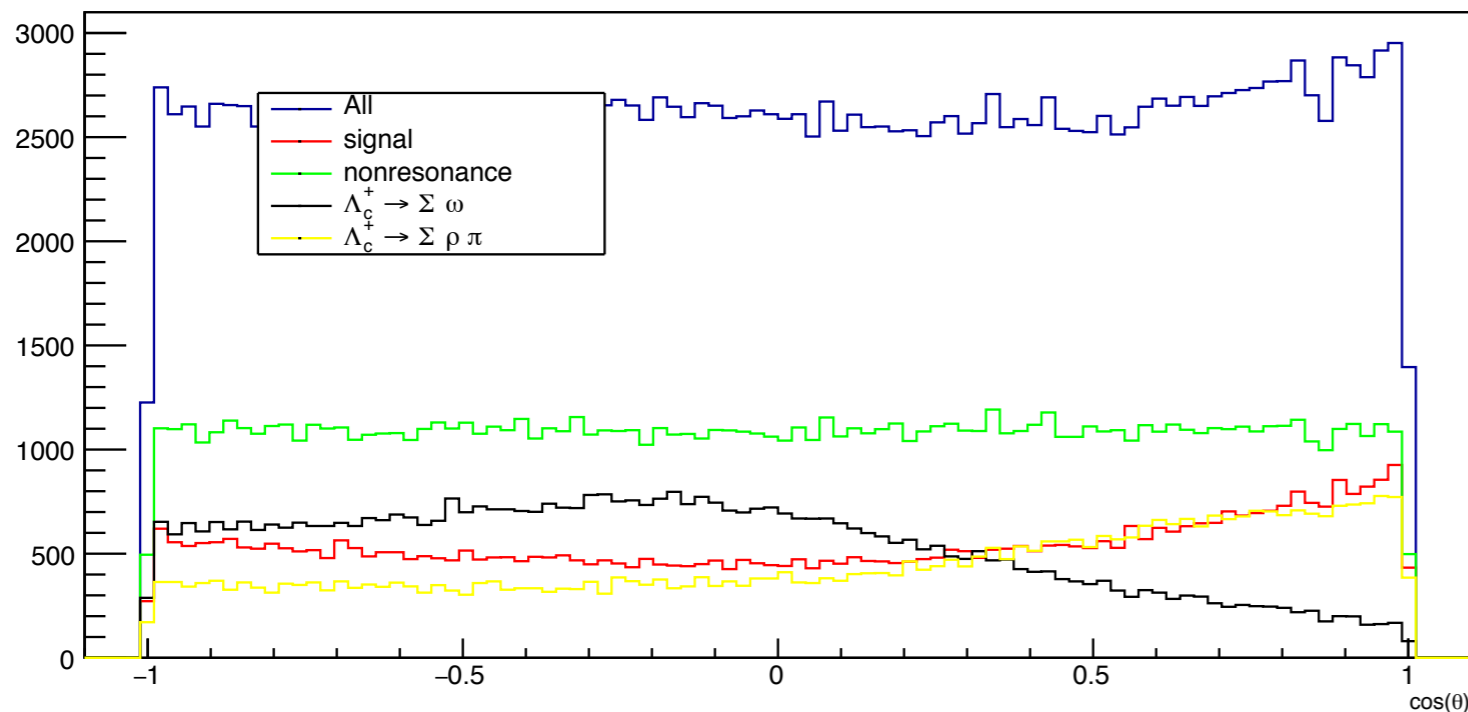
# Angular distribution - no mass cut

$$\Lambda_c^+ \rightarrow \Sigma \pi \pi \pi$$



$\Sigma(1670)^+$

$$\Lambda_c^+ \rightarrow \Sigma \pi \pi \pi$$

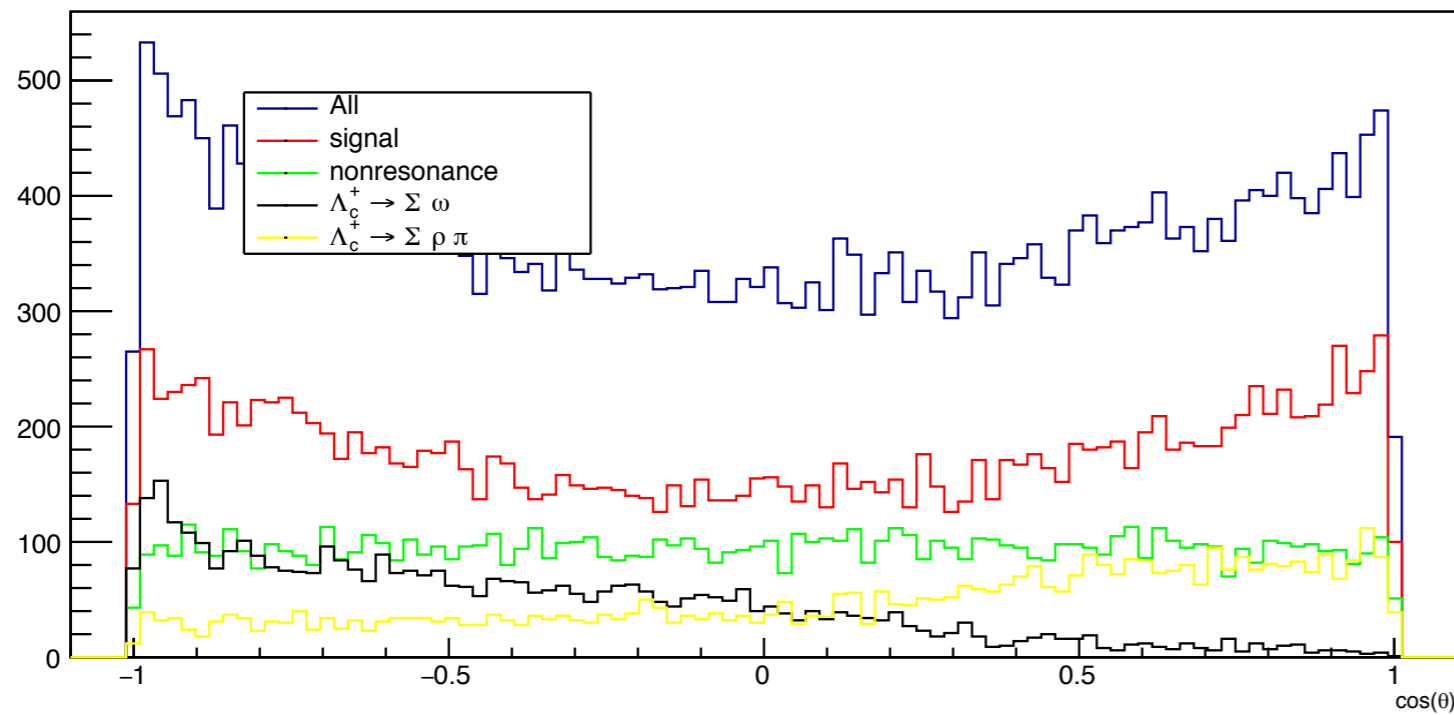


$\Sigma(1670)^0$



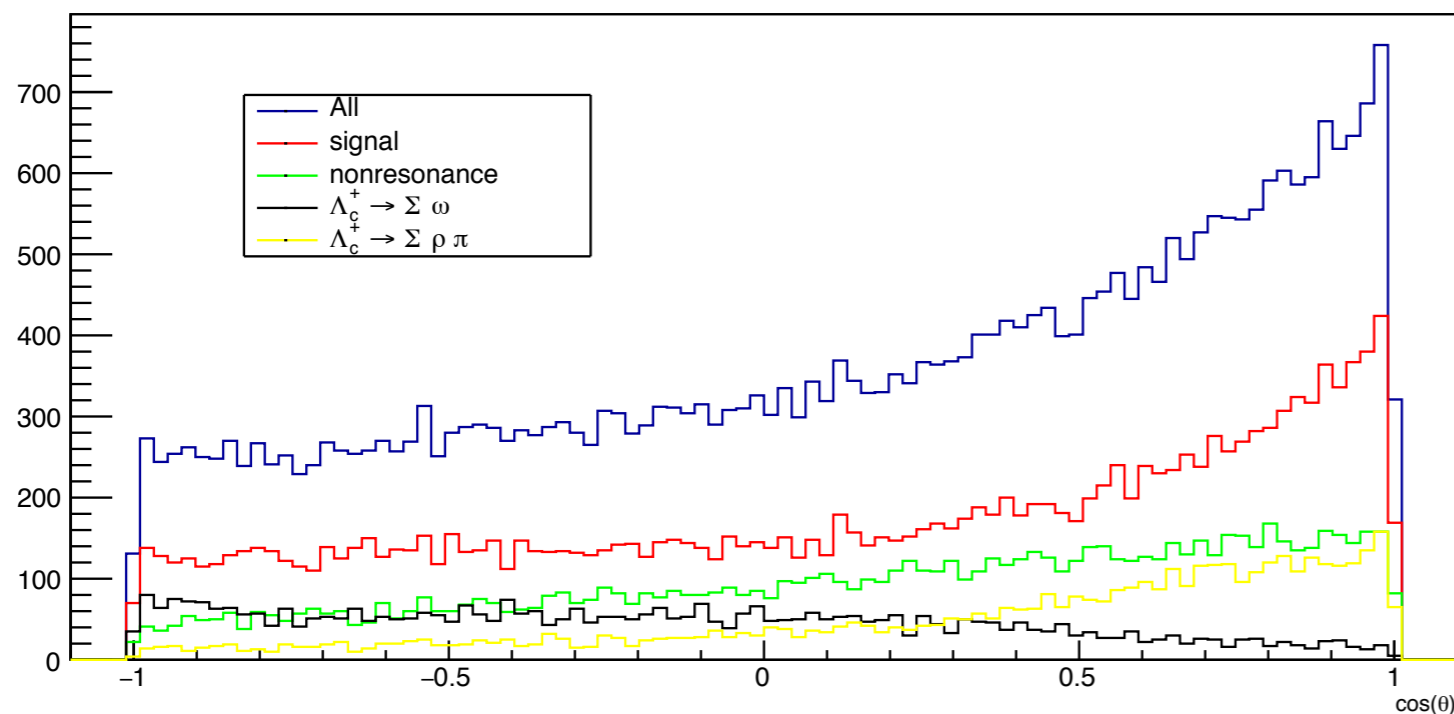
# Angular distribution 60MeV cut

$$\Lambda_c^+ \rightarrow \Sigma \pi \pi \pi$$



$\Sigma(1670)^+$

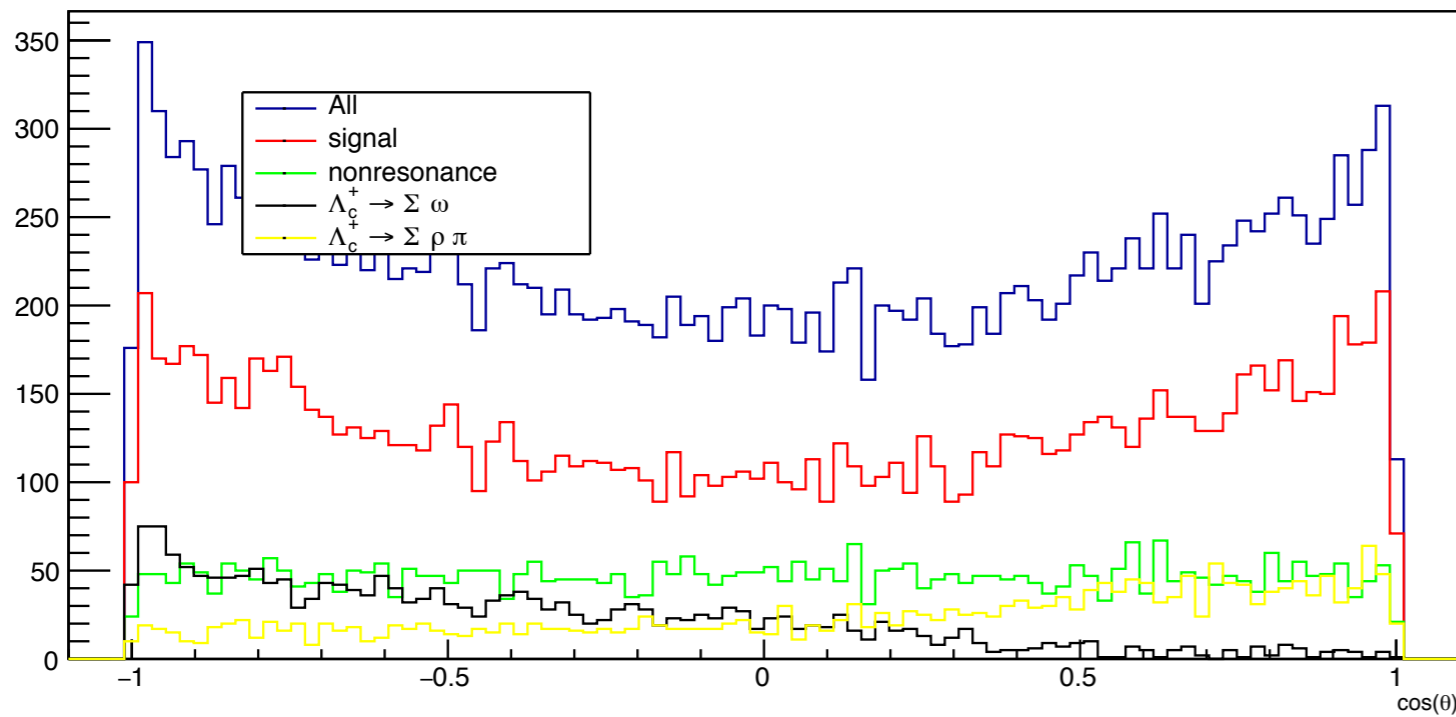
$$\Lambda_c^+ \rightarrow \Sigma \pi \pi \pi$$



$\Sigma(1670)^0$

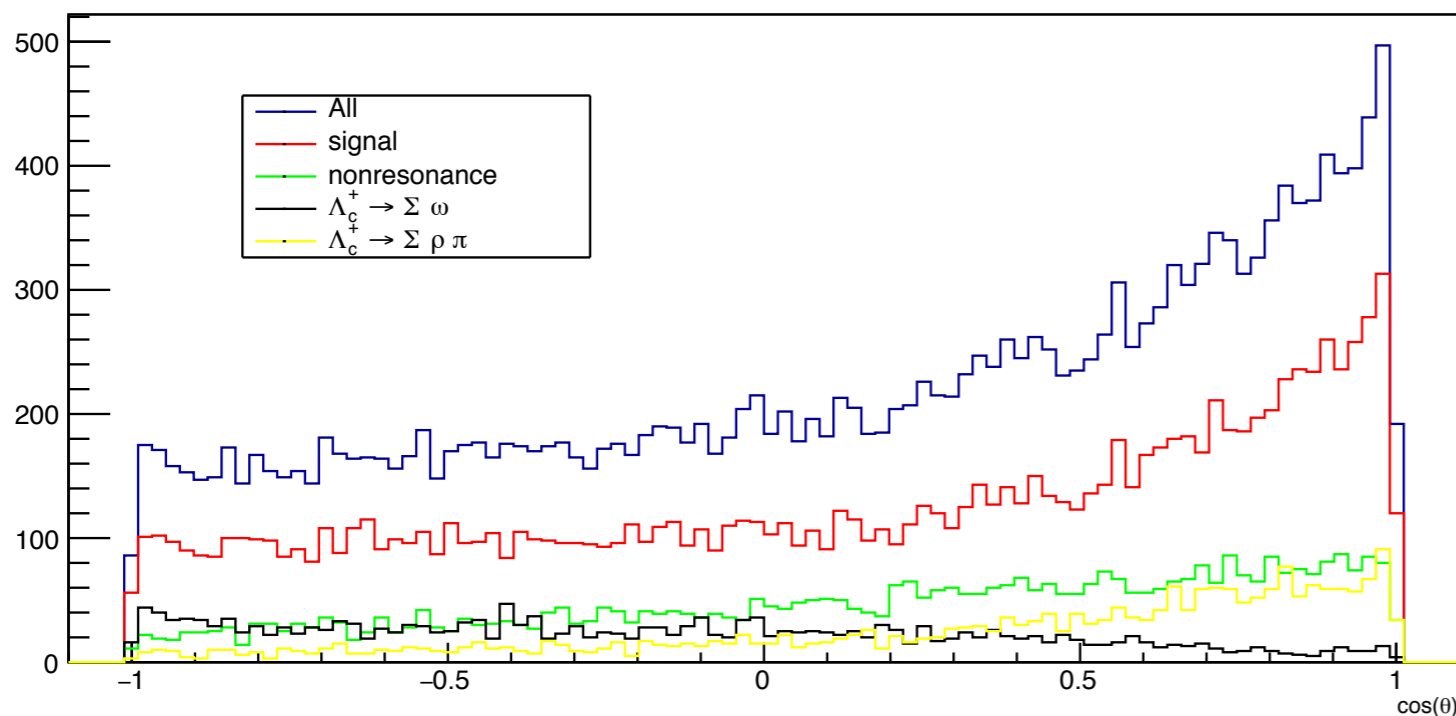
# Angular distribution 30MeV cut

$$\Lambda_c^+ \rightarrow \Sigma \pi \pi \pi$$



$\Sigma(1670)^+$

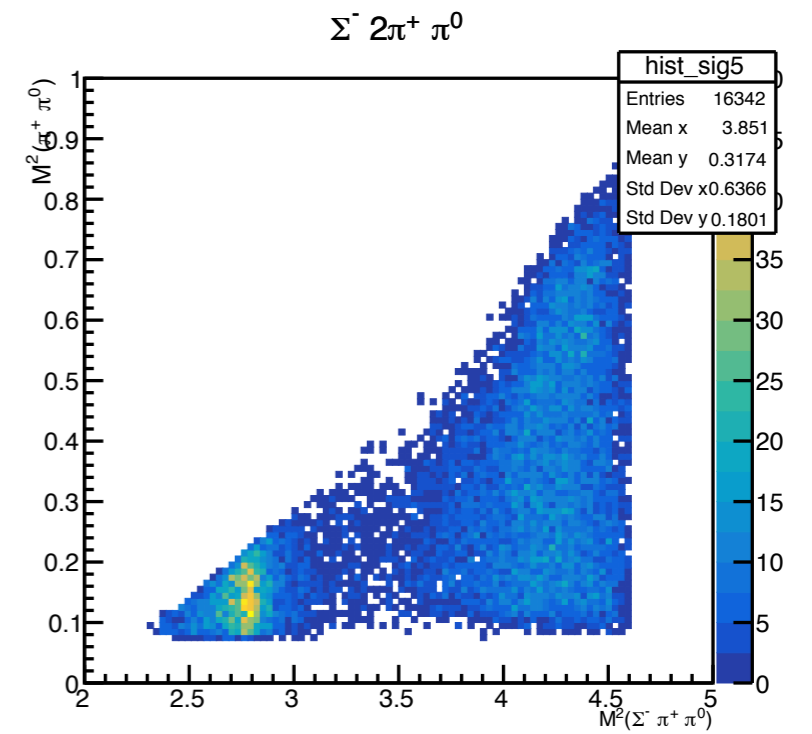
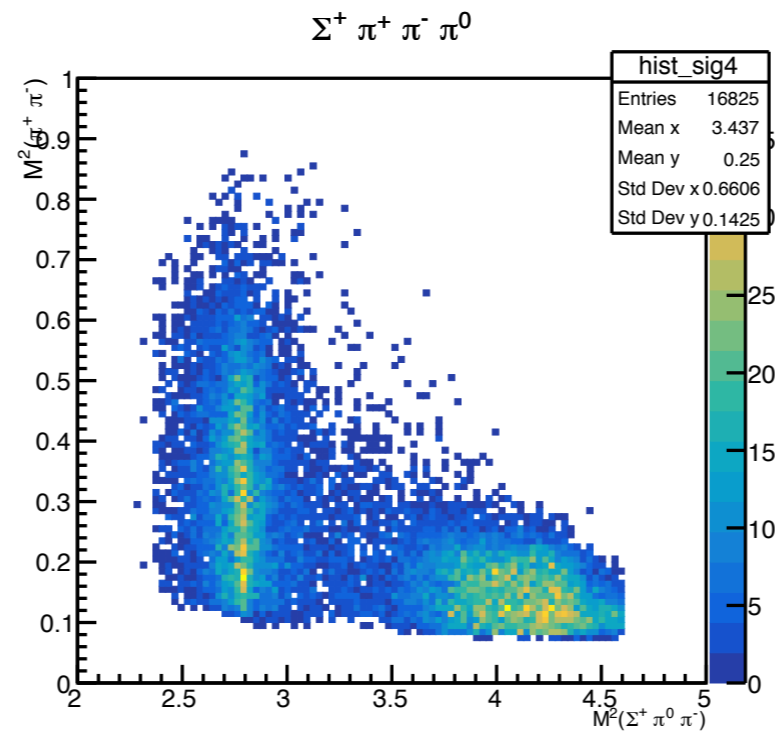
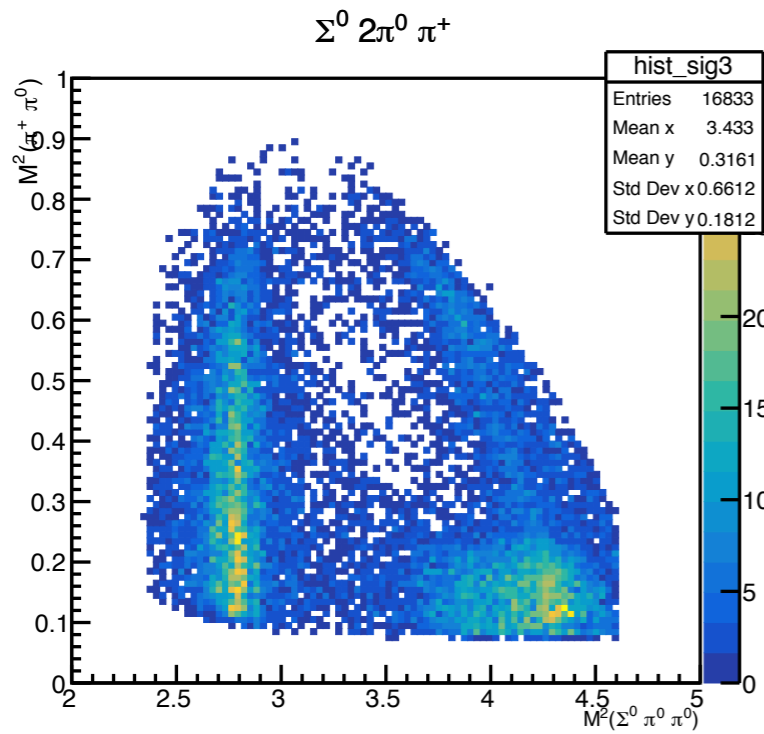
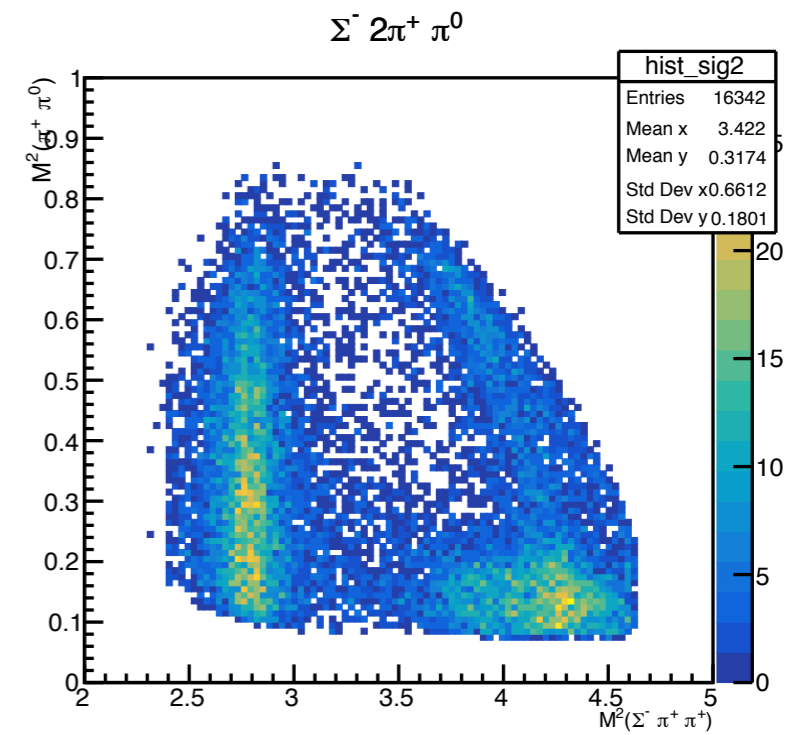
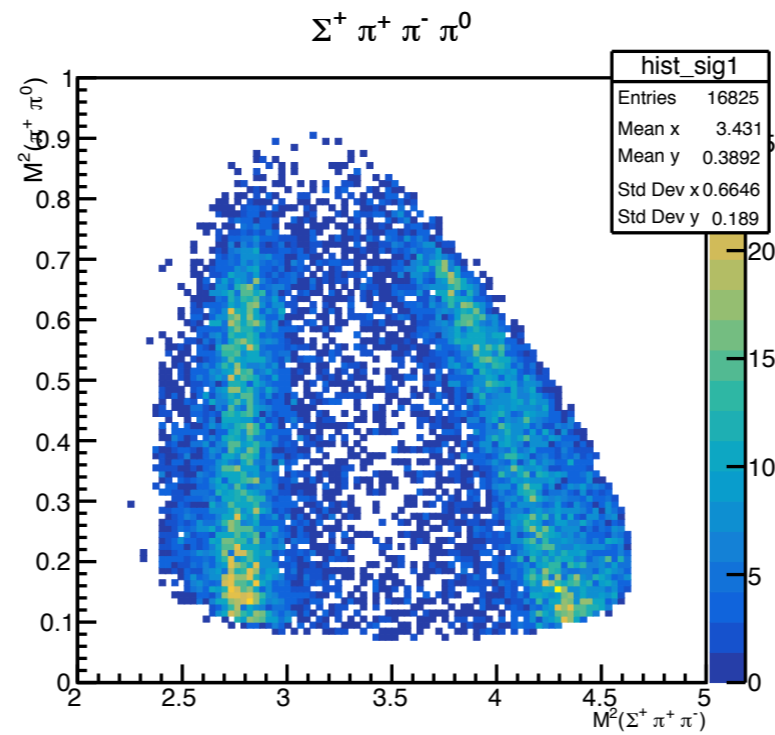
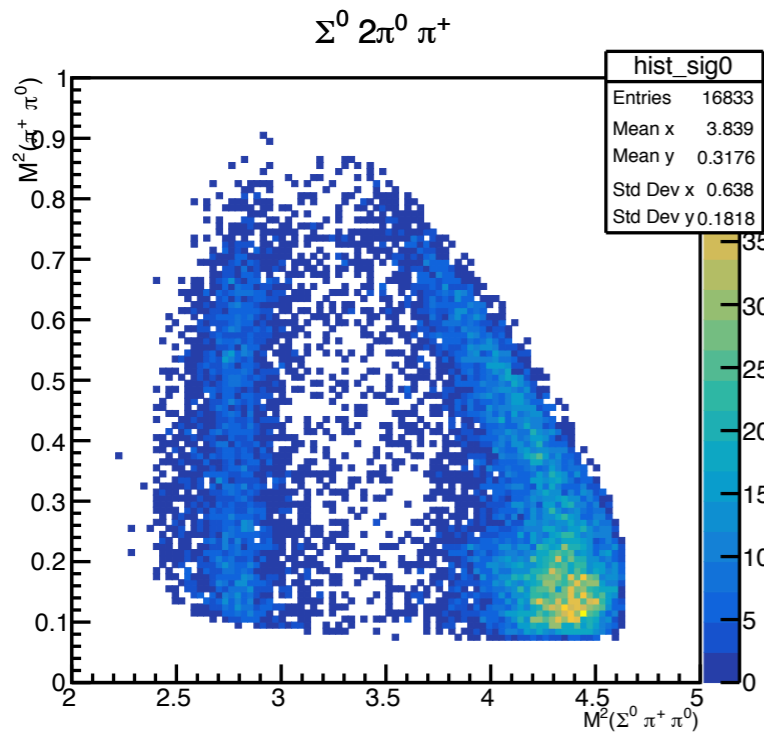
$$\Lambda_c^+ \rightarrow \Sigma \pi \pi \pi$$



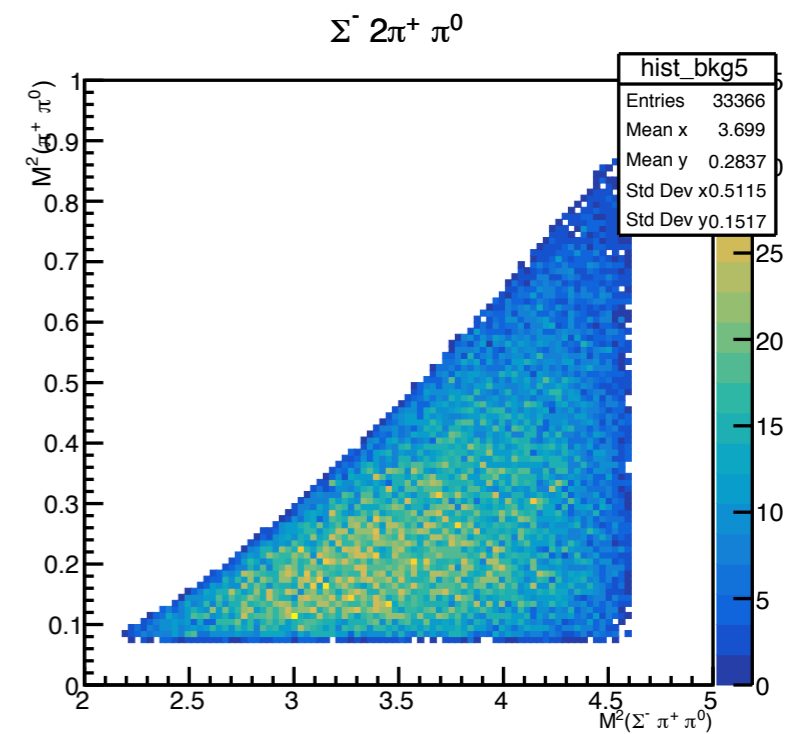
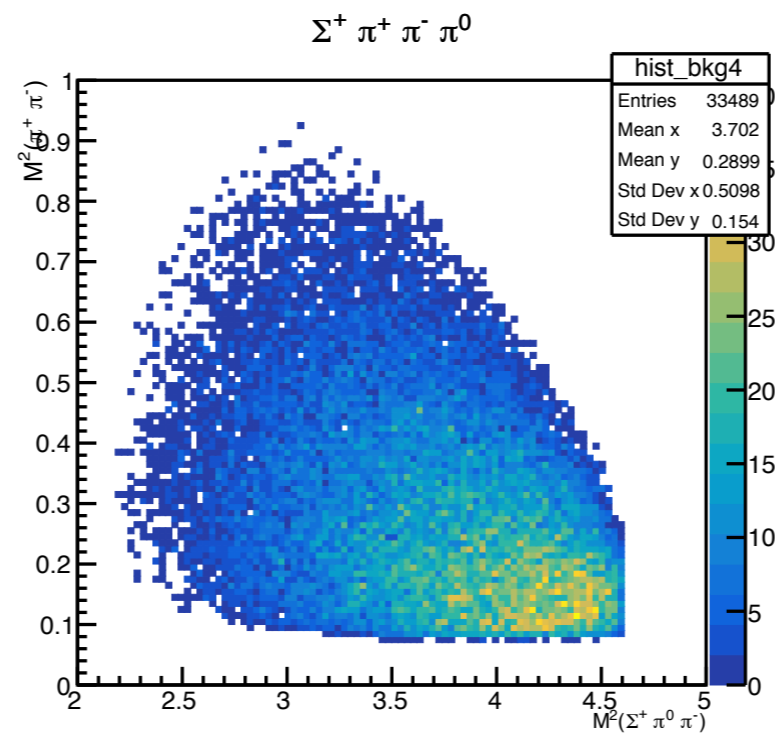
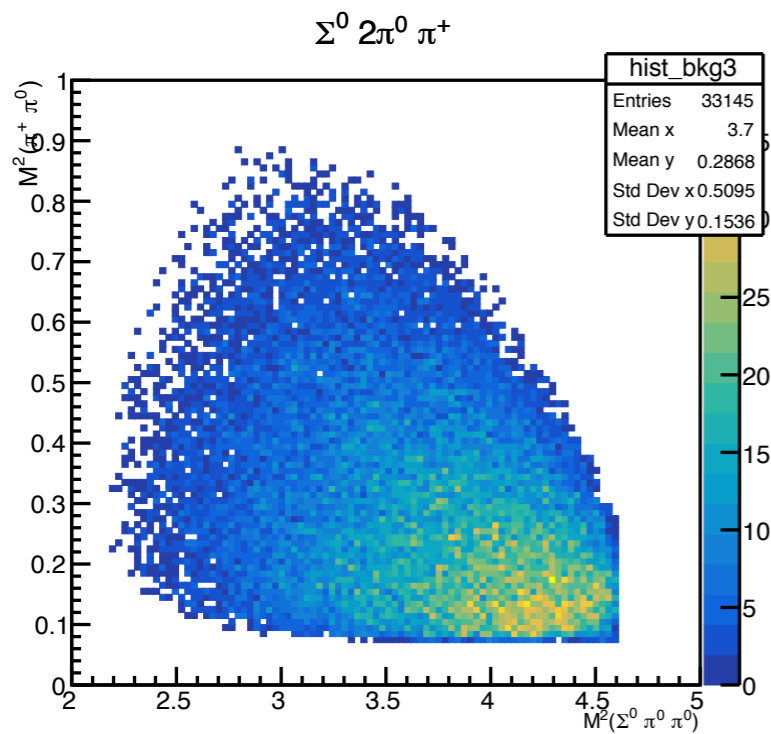
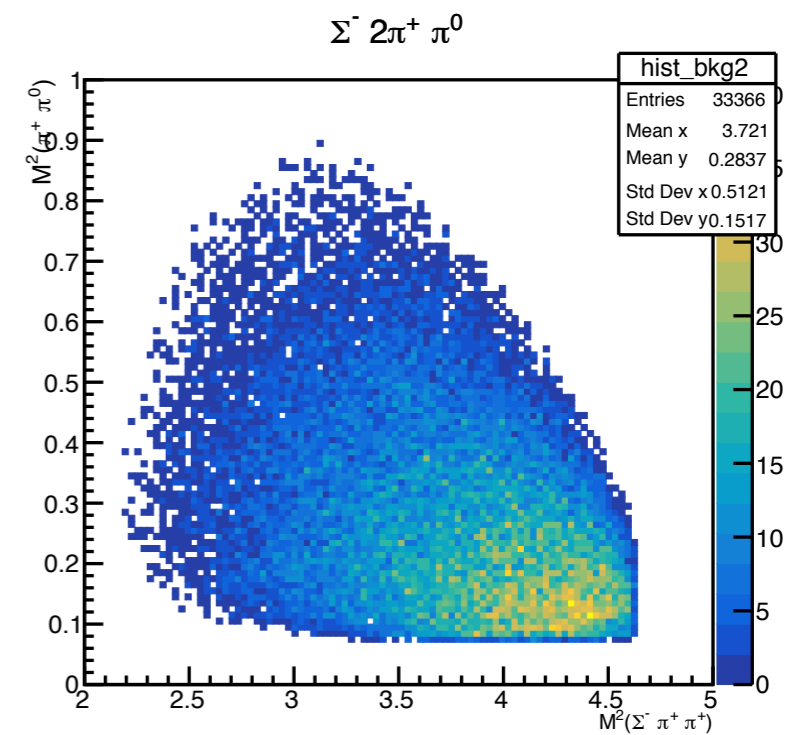
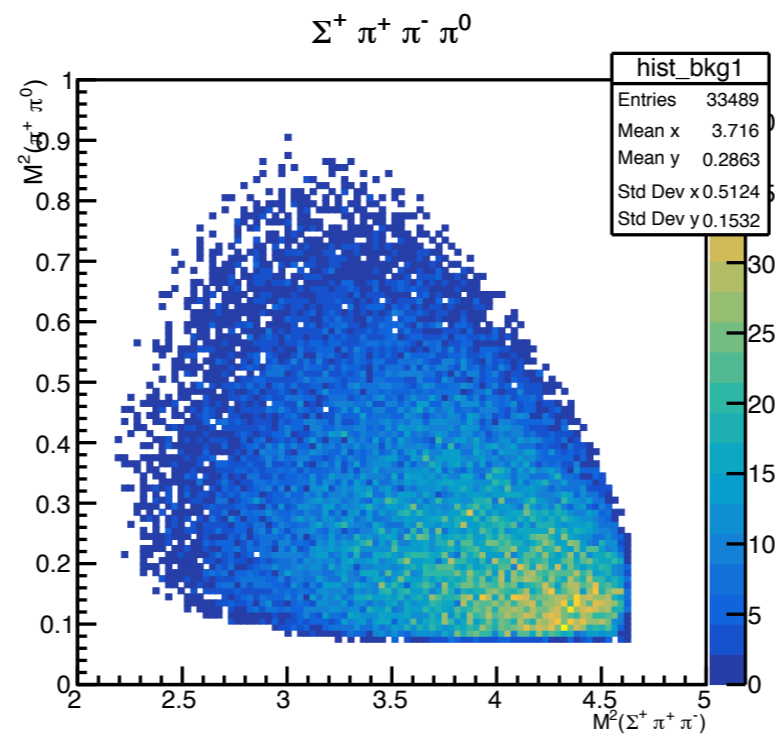
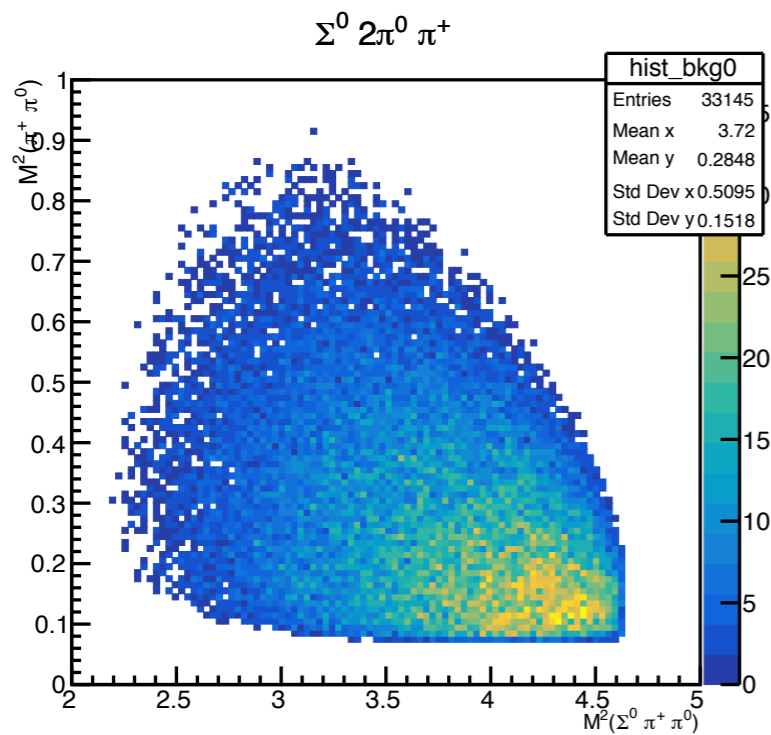
$\Sigma(1670)^0$

**back up**

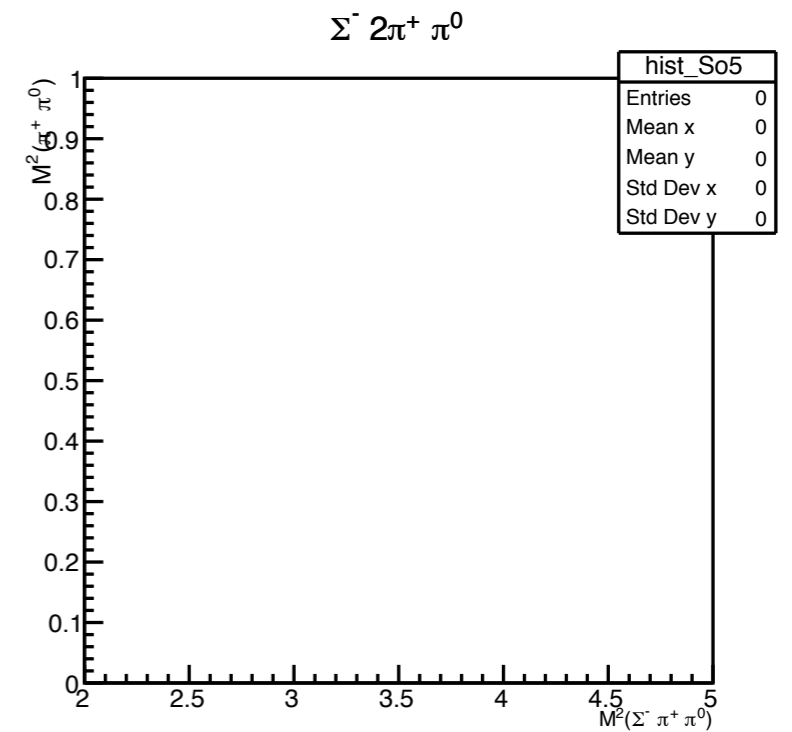
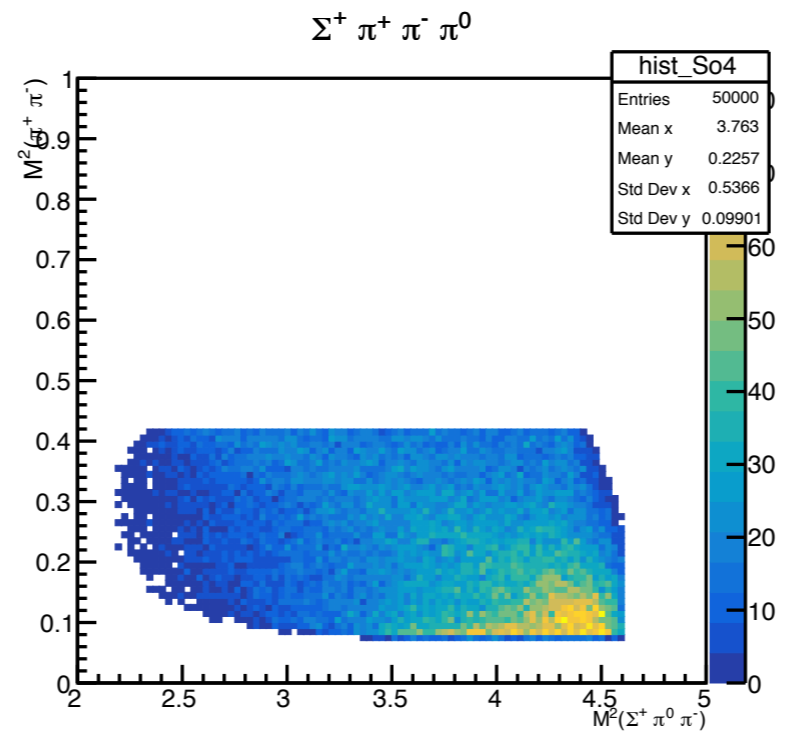
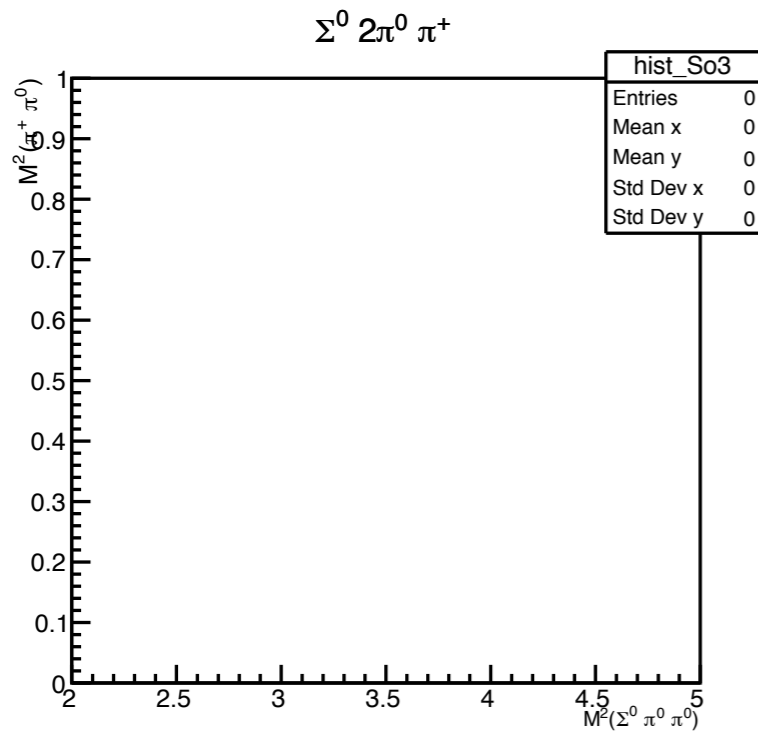
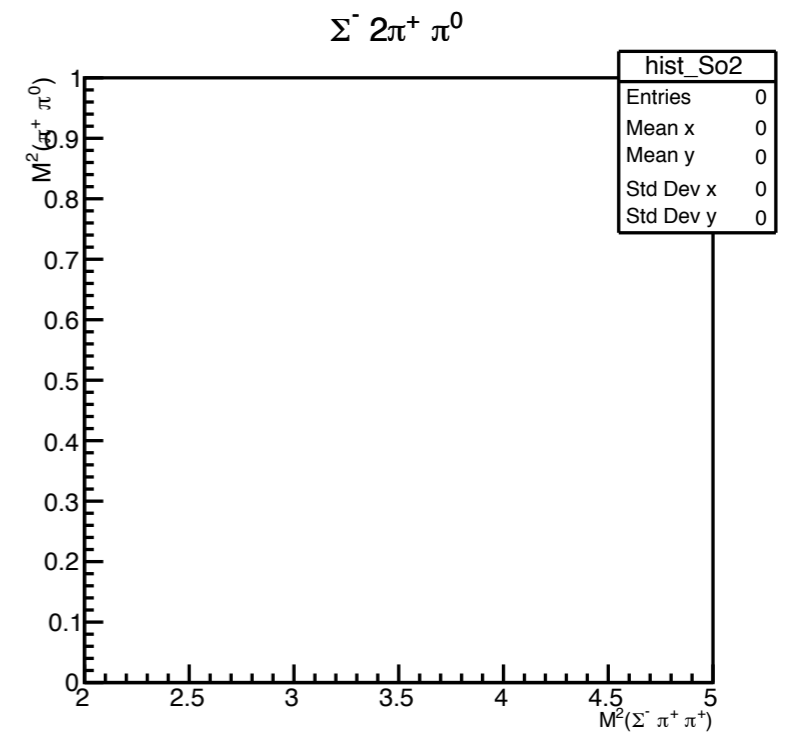
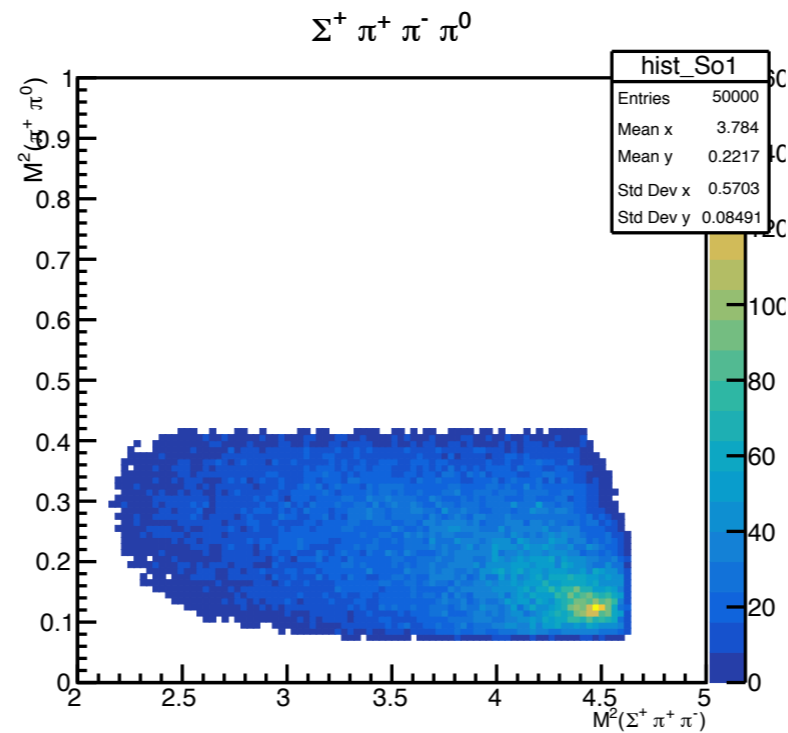
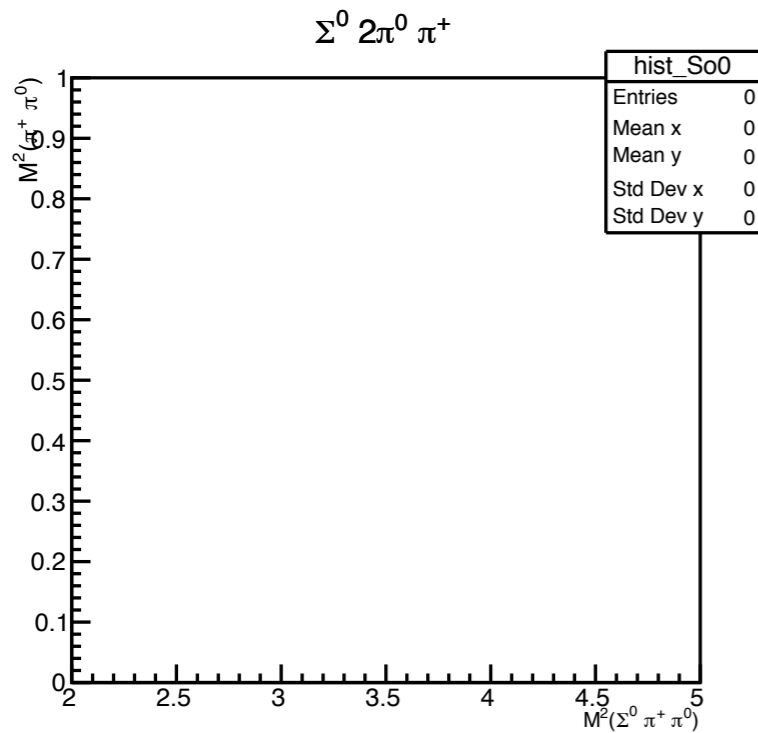
# Dalitz plot - signal



# Dalitz plot - non resonance



# Dalitz plot - $\Sigma\omega$



# Dalitz plot - $\Sigma\rho\pi$

