

Normalized Yields for $E(1530)$

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Outline

- Sp18 Dataset
- 2020 Dataset
- Conclusions



Reaction and Decay Chain

$$\gamma p \rightarrow K^+ K^+ \Xi^{-*}$$

$$\Xi^{-*} \rightarrow \Xi^- \pi^0$$

$$\Xi^- \rightarrow \Lambda \pi^-$$

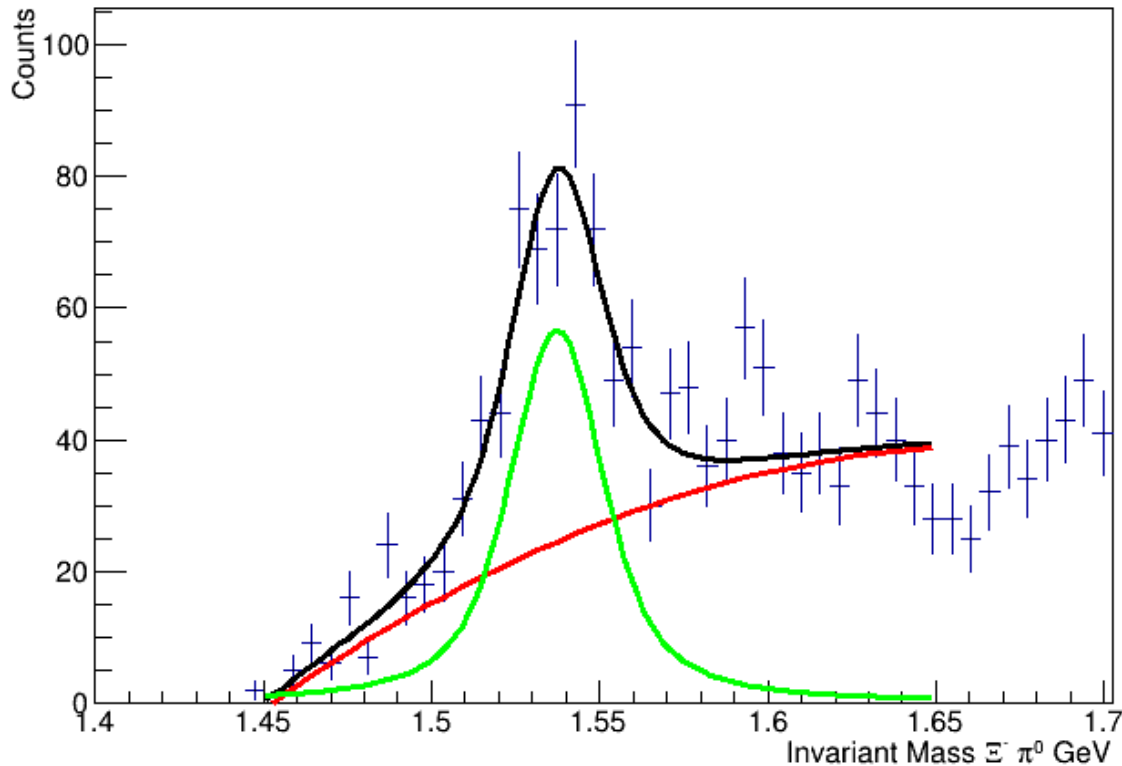
$$\Lambda \rightarrow p \pi^-$$

- The masses of Λ and π are constrained to the known masses in the kinematic fit.

Analysis Cuts

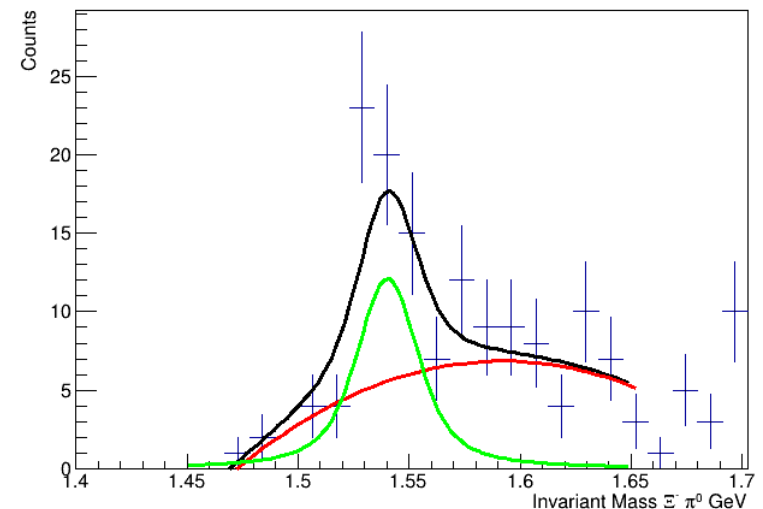
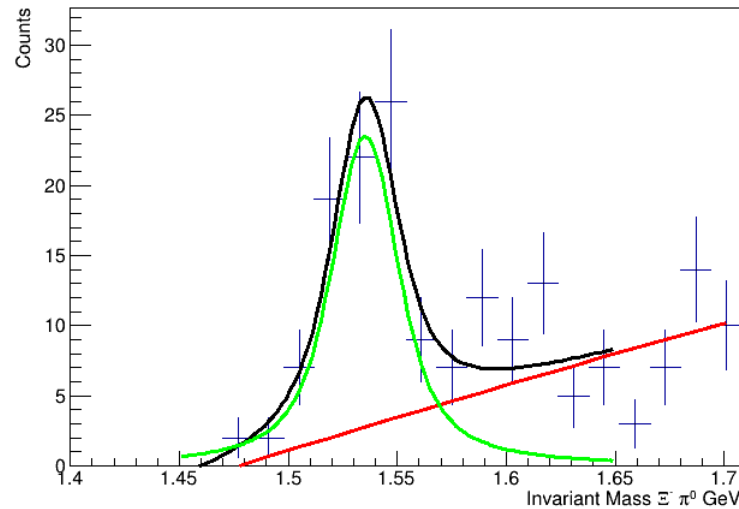
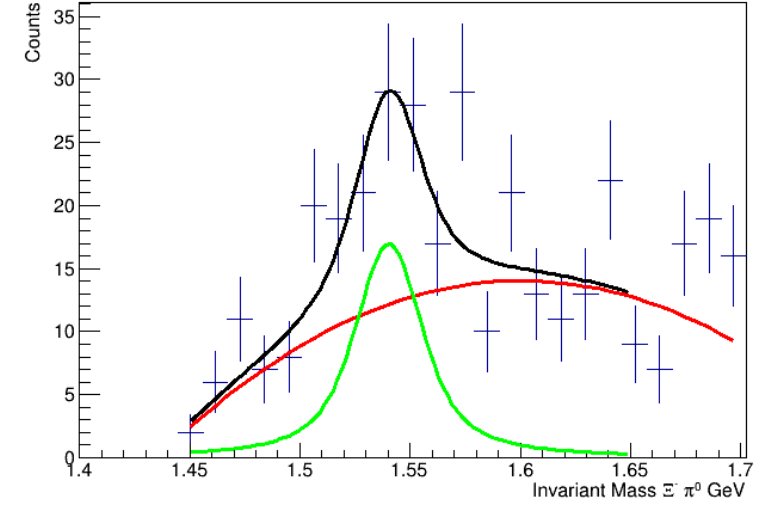
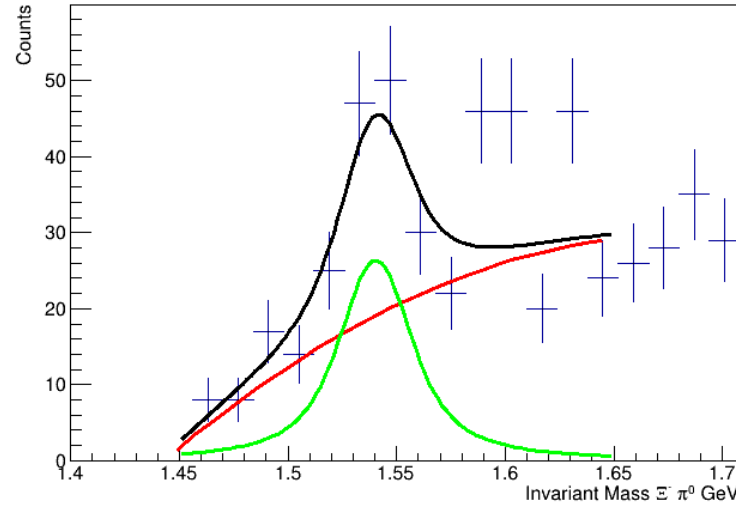
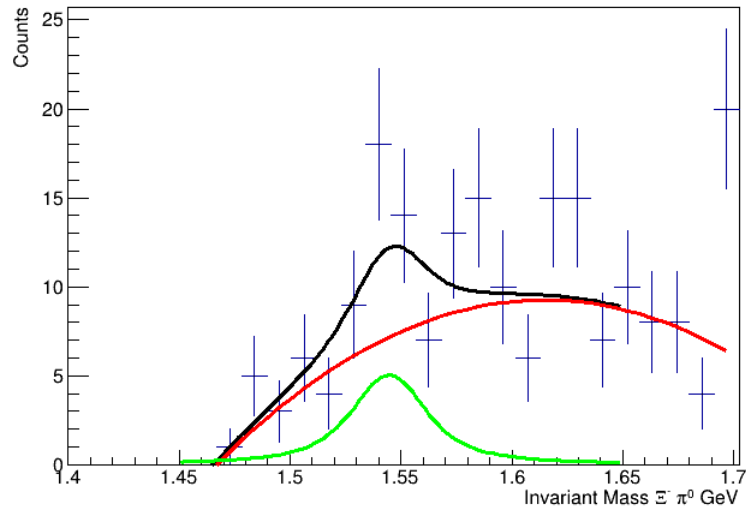
- $Cl > 10^{-4}$
- Invariant mass cut on the reconstructed ground state cascade
 $1.31 < IM(\Lambda\pi^-) < 1.34 \text{ GeV}$
- Removal of background K^* contribution

Sp18 Data Set

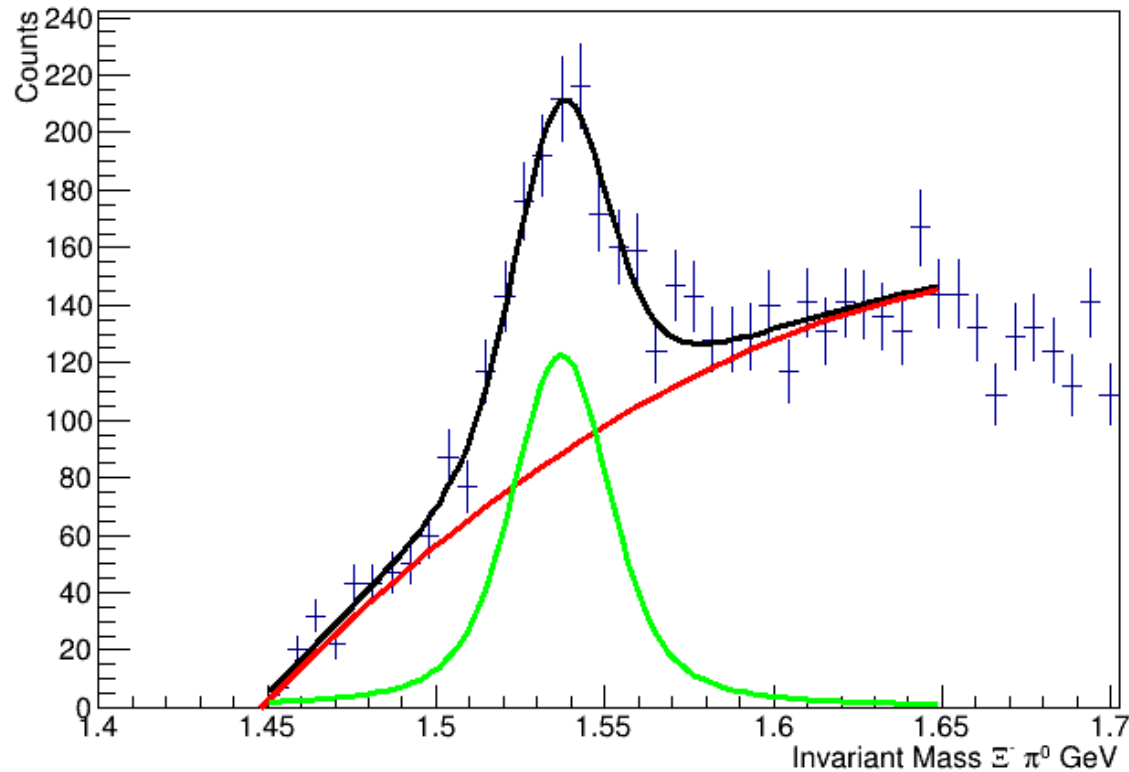


- Center = 1.537(1) GeV
- Width = 10(6) MeV
- $\sigma = 8(4)$ MeV

Energy Dependent Yields Sp 2018 Dataset

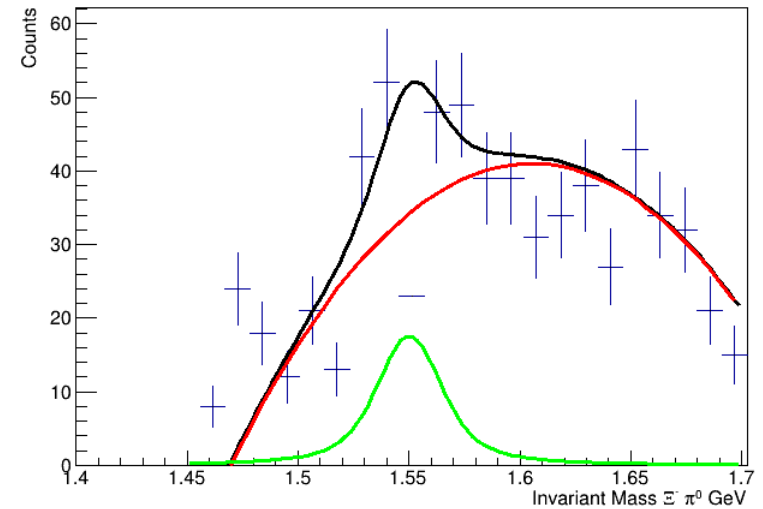
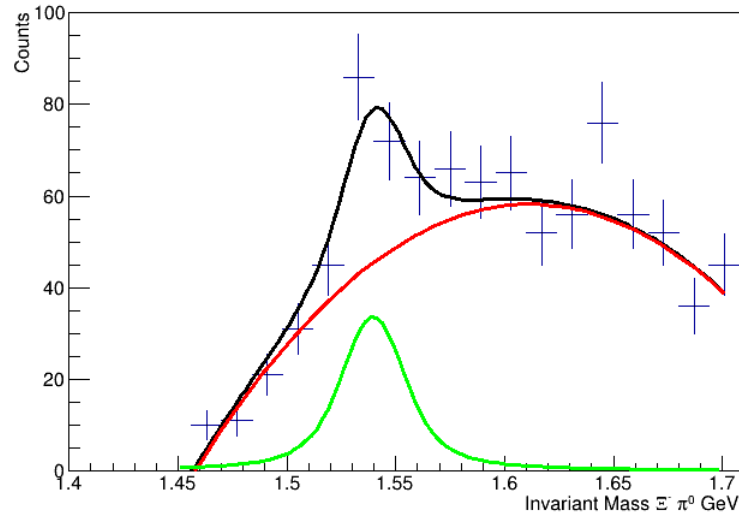
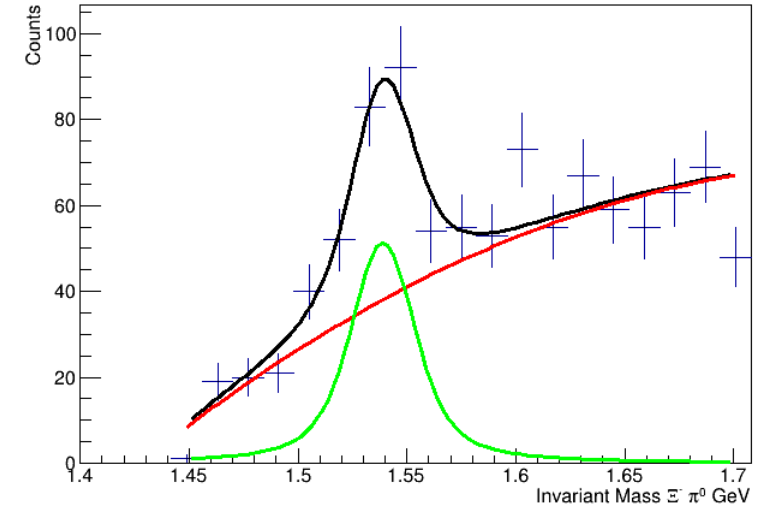
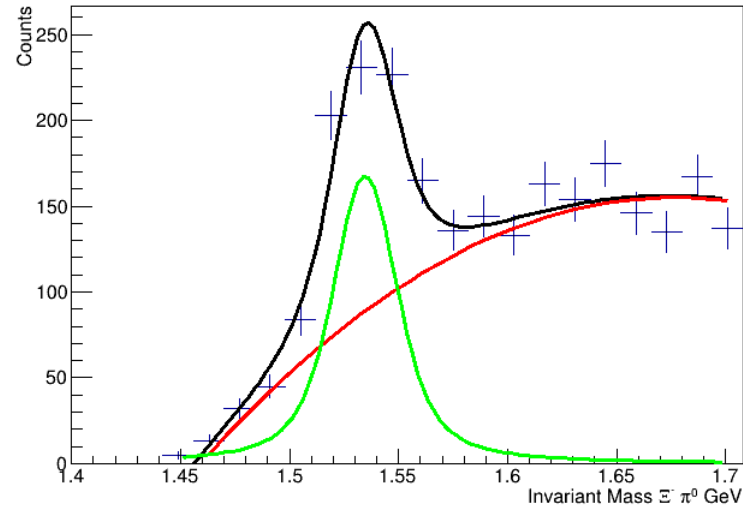
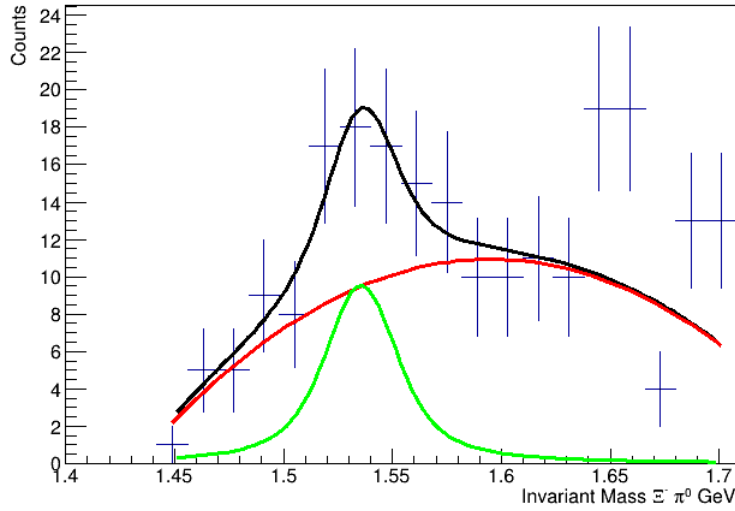


2020 Data Set

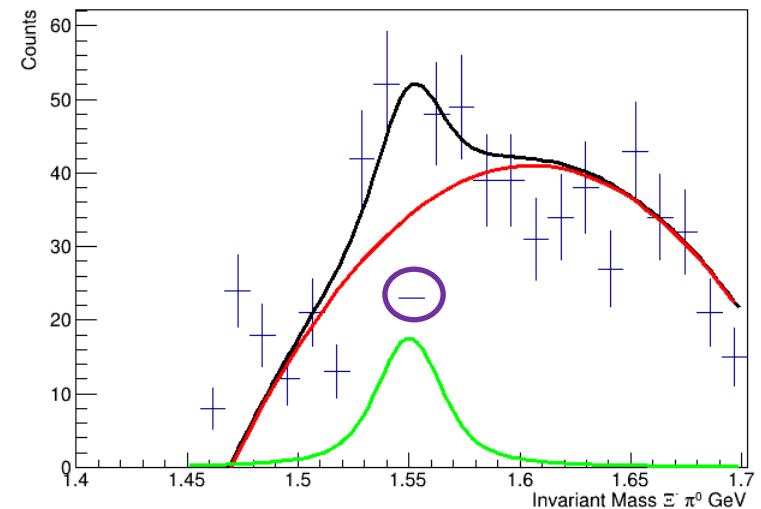
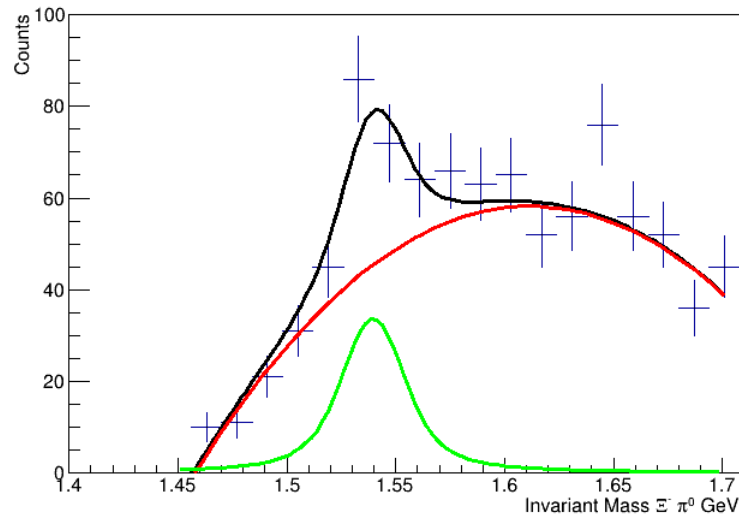
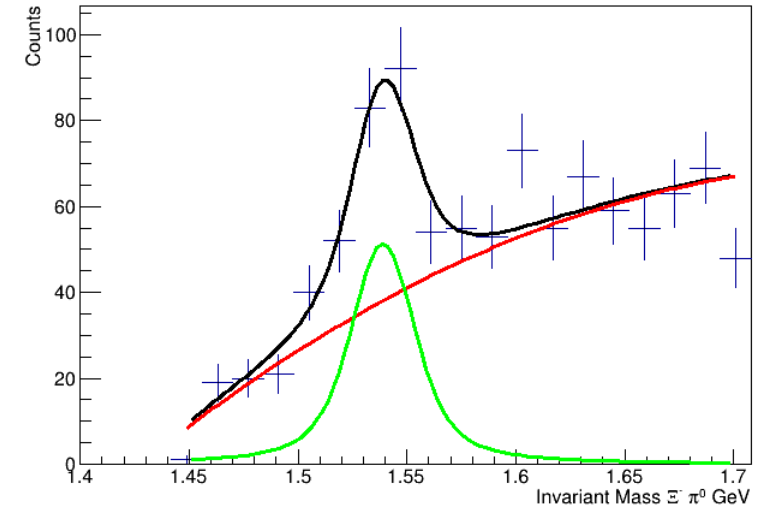
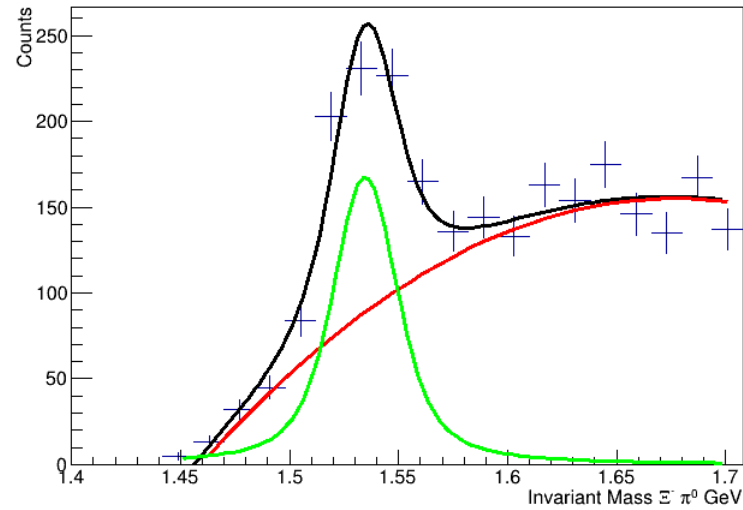
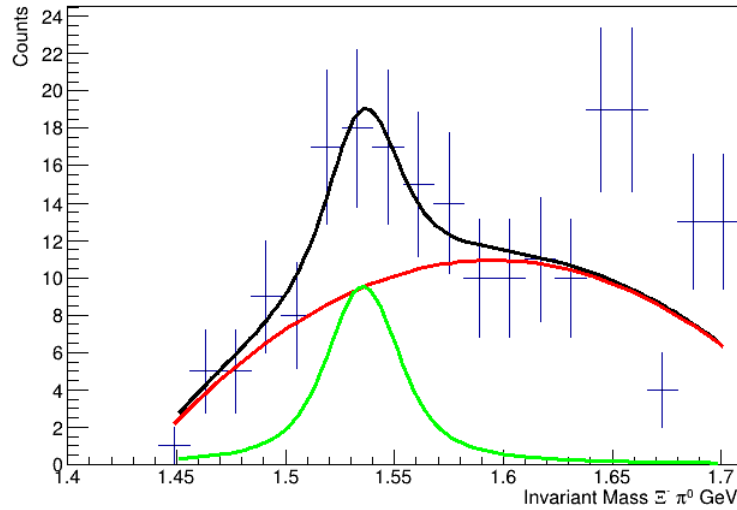


- Center = 1.537(1) GeV
- Width = 8(7) MeV
- $\sigma = 10(4)$ MeV

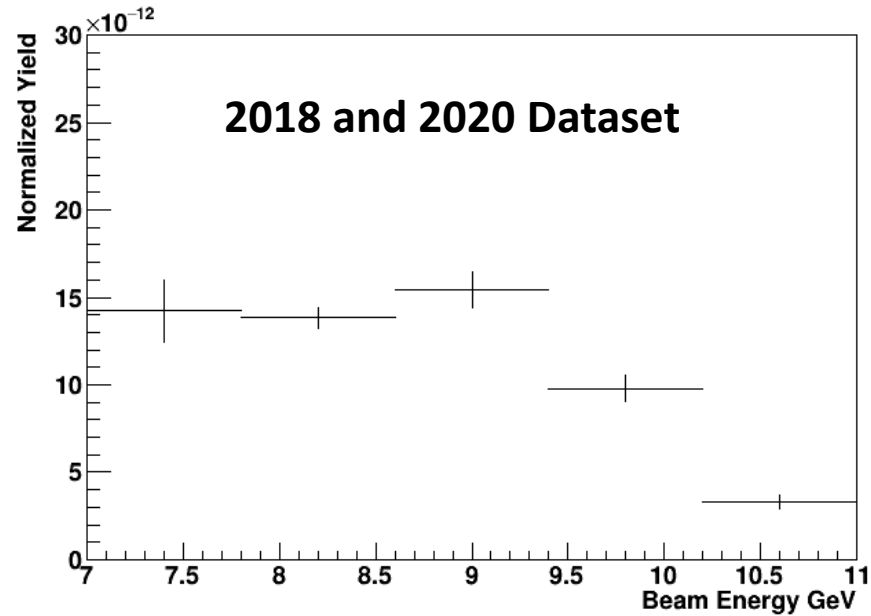
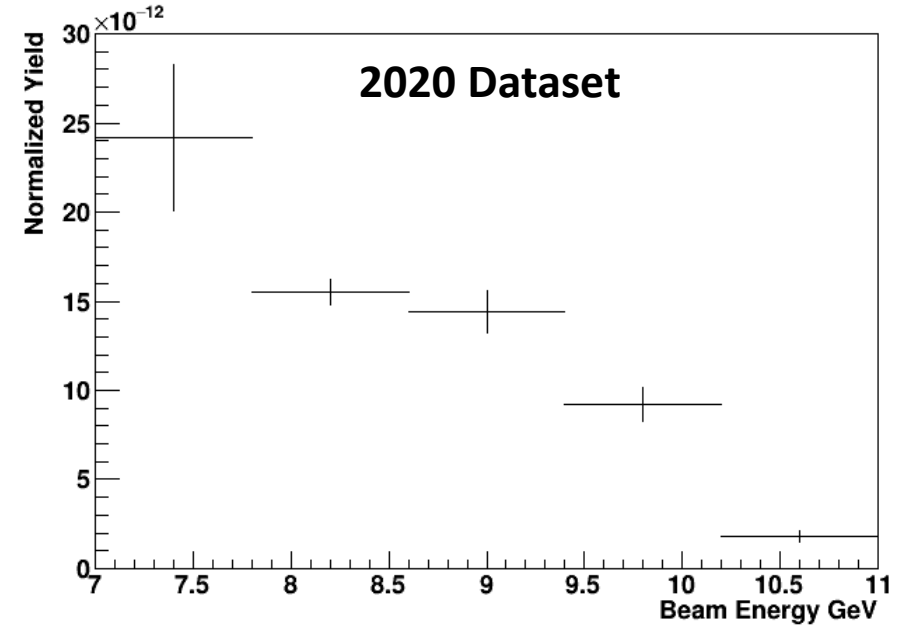
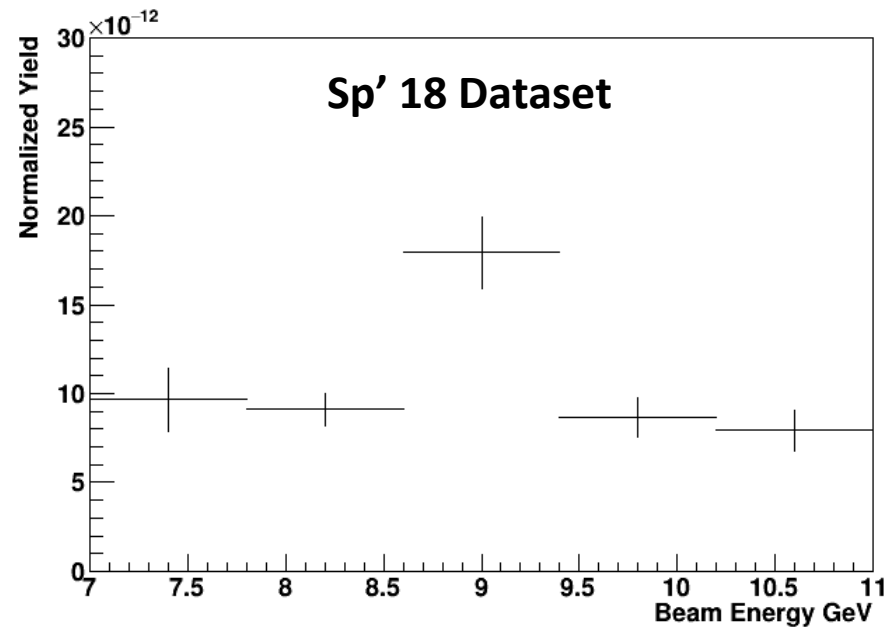
Energy Dependent Yields 2020 Dataset



Energy Dependent Yields 2020 Dataset



Normalized Yield Comparison



Conclusions

- The 9.8 GeV bin is consistent between run periods
- Obtain efficiencies for a CS measurement

End