

# Comparison of $K^{*0}\Sigma^+(1189)$ and $K^{*+}\Lambda^0(1115)$

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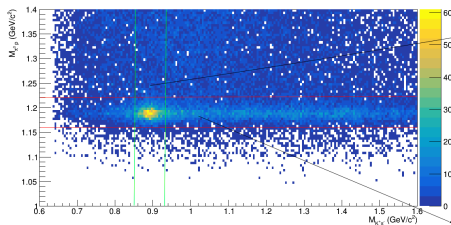
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# Preliminary Results ( $\gamma p \rightarrow K^{*0} \Sigma^+$ )

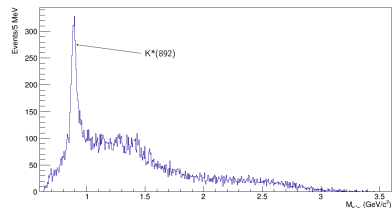
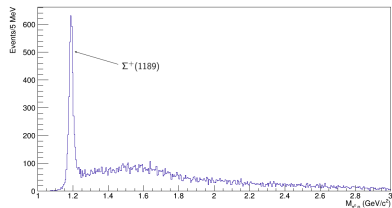
●  $\gamma p \rightarrow K^+ \pi^- \pi^0 p$



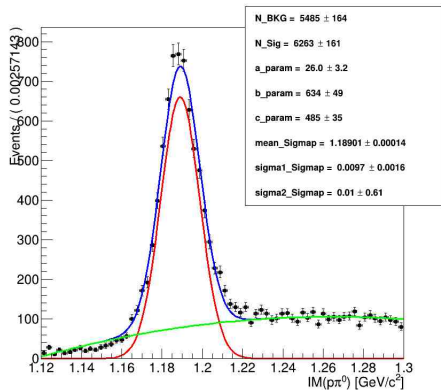
$M_{\pi^0 p}$  vs  $M_{K^+ \pi^-}$

$0.85 \text{ GeV}/c^2 < M_{K^+ \pi^-} < 0.93 \text{ GeV}/c^2$

$1.16 \text{ GeV}/c^2 < M_{\pi^0 p} < 1.22 \text{ GeV}/c^2$

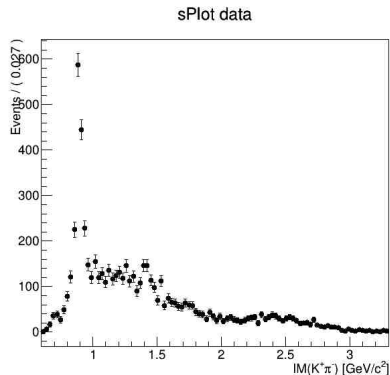


# Fitting



signal —  
background —  
total —

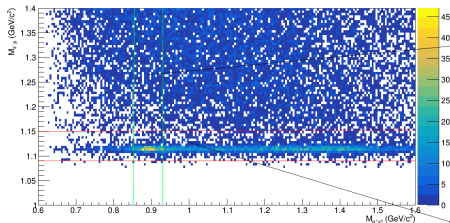
$M_{p\pi^0}$  after fit



- *sPlot* technique  $\Rightarrow$  subtract background
- Clear peak of  $K^{*0}(892)$  and evidence for  $K_0^{*}(1430)$  and  $K_2^{*}(1430)$

# Preliminary Results ( $\gamma p \rightarrow K^{*+}\Lambda^0$ )

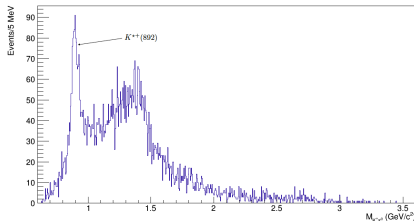
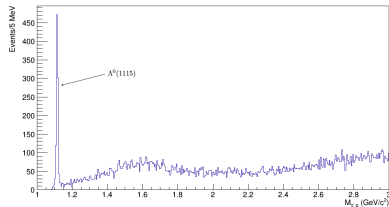
•  $\gamma p \rightarrow K^+\pi^0\pi^-p$



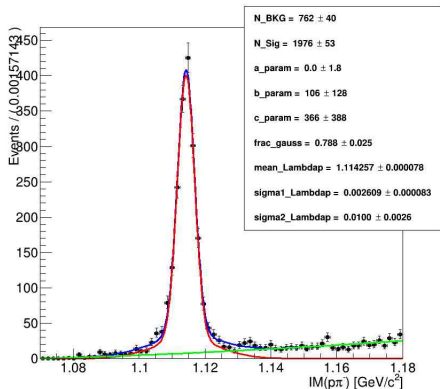
$M_{\pi^-p}$  vs  $M_{K^+\pi^0}$

$0.85 \text{ GeV}/c^2 < M_{K^+\pi^0} < 0.93 \text{ GeV}/c^2$

$1.09 \text{ GeV}/c^2 < M_{\pi^-p} < 1.15 \text{ GeV}/c^2$

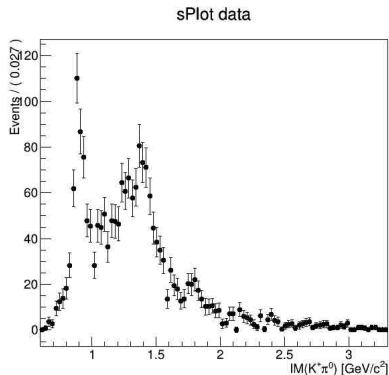


# Fitting



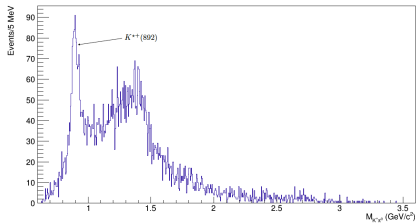
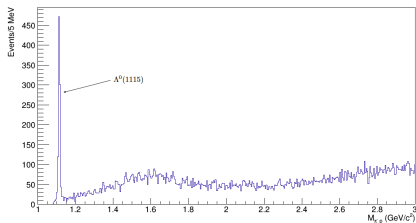
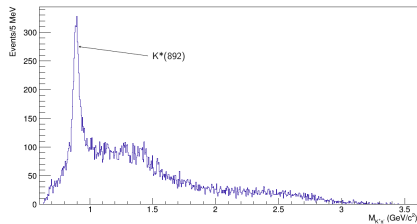
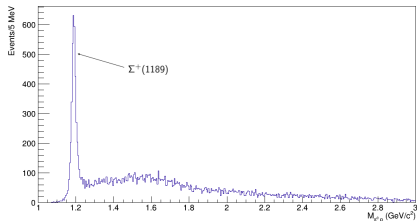
signal —  
background —  
total —

$M_{p\pi^-}$  after fit



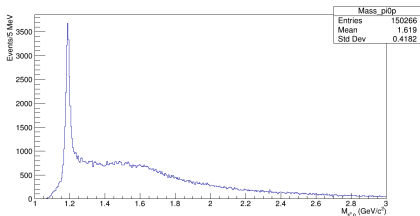
- Subtract background using *sPlot* technique
- Nice peak of  $K^{*+}$  (892)
- Other states of  $K^+\pi^0$  are much sharper than  $K^+\pi^-$  states in  $\gamma p \rightarrow K^{*0}\Sigma^+$

# Recap

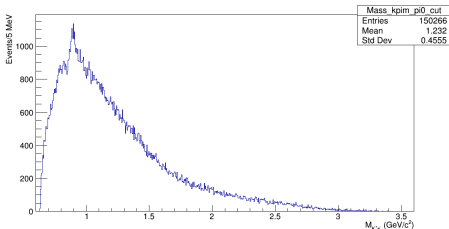




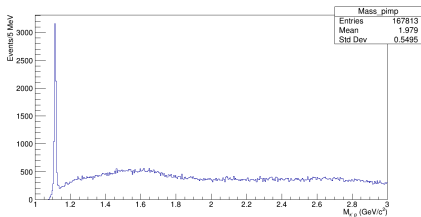
Thank You !



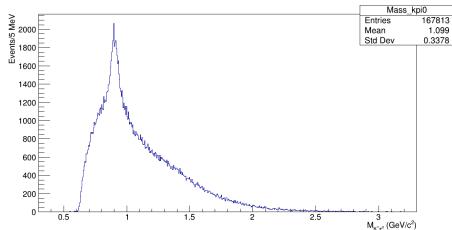
$M_{\pi^0 p}$  before  $K^*$  cut



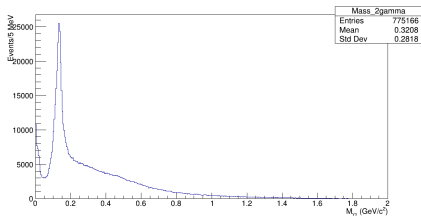
$M_{K+\pi^-}$  before  $\Sigma^+$  cut



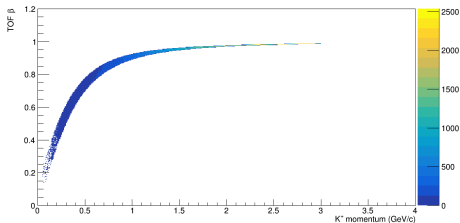
$M_{\pi^- p}$  before  $K^{*+}$  cut



$M_{K^+ \pi^0}$  before  $\Lambda^0$  cut



$M_{\gamma\gamma}$



TOF  $\beta$  vs  $K^+$  momentum