

Analysis of K+ & K- production in $\pi C / \pi W$ reactions @ 1.7 GeV/c

using gen2 data
(JUL- 2014)

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05/05/2016

Contents

- Summary of the PID cuts for kaons (MC & exp)
- Summary of fit procedure for $p\theta$ bins (MC → exp)
- MC & exp fit results comparison (m, σ)
- Fit plots for “problematic” bins
- K^-/K^+ ratios (C,W,W/C)
- Fit results (MC & exp) for p-slices spectra

PID cuts for kaons

MC :

- RPC & TOF dedx vs P TCutG (Joana) || PID
- $\rho < 20\text{cm}$ && $(-80 < z < 5 \parallel z = -1000)$
- $0 < \text{MDCdedx} < 50$
- $0 < \beta < 1$
- $P_{\text{cor}} = P + \text{getDeltaMom(id,p,mat,\theta)}$
(after selection)

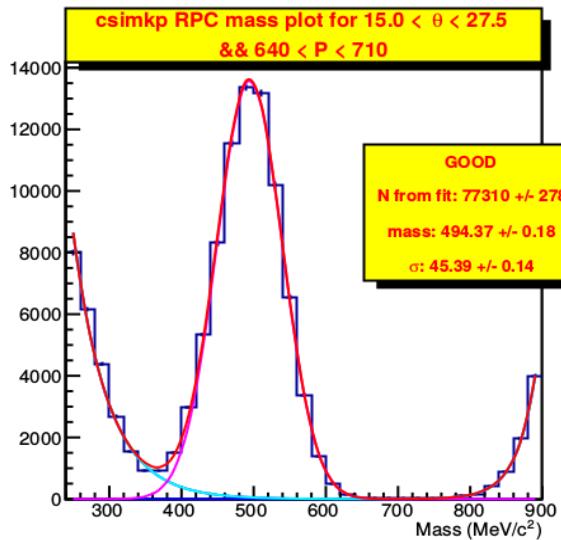
Exp :

- RPC & TOF dedx vs P TCutG (Joana)
- $\rho < 20\text{cm}$ && $(-80 < z < 5 \parallel z = -1000)$
- $0 < \text{MDCdedx} < 50$
- $0 < \beta < 1$
- $P_{\text{cor}} = 1.006 * P + \text{getDeltaMom(id,p,mat,\theta)}$
(after selection)

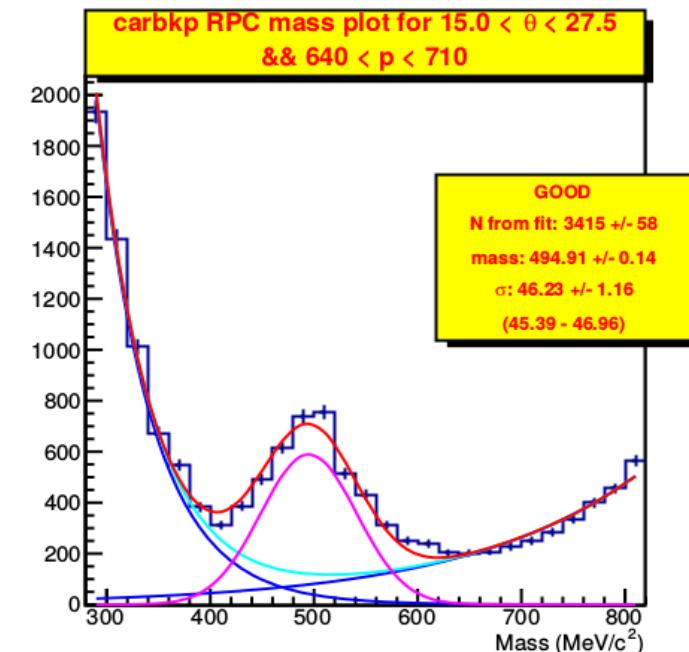
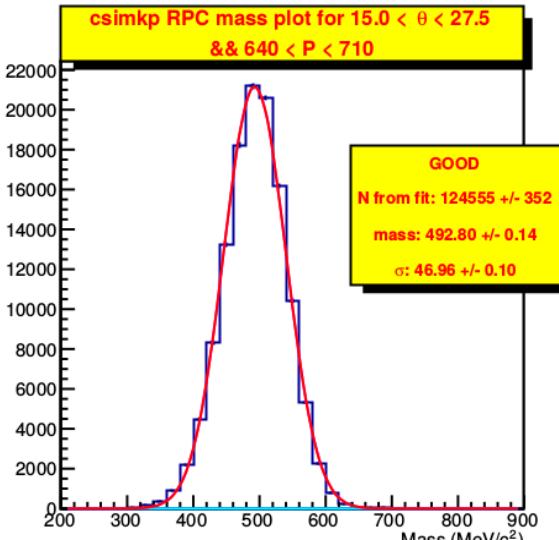
fit procedure for p θ bins (MC \rightarrow exp)

Fits of the individual MC mass spectra in all p θ range

ADCSEL



PIDSEL



Fit func = Gaus + exp $_{\pi}$ + exp $_{p}$ (+ pol2)

Constraints for exp fits:

1a) $\sigma_{\min} < (\sigma_{\min} + \sigma_{\max})/2 < \sigma_{\max}$ (PID&ADC)

1b) $\sigma_{\text{MC}} - 3\delta\sigma_{\text{MC}} < \sigma_{\text{MC}} < \sigma_{\text{MC}} + 3\delta\sigma_{\text{MC}}$ (PID||ADC)

2a) $450 < m_K < m_{\text{start}} < m_{\text{max}} + 3\delta m_{\text{max}}$



Prefits on:

Gaus $\rightarrow m_{\text{start}}$

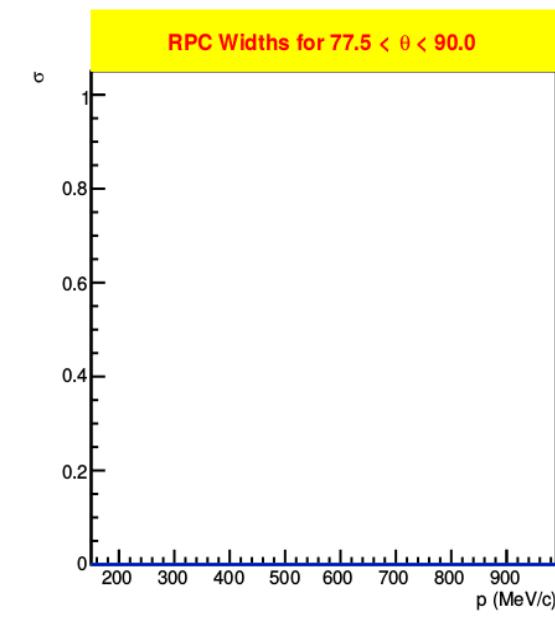
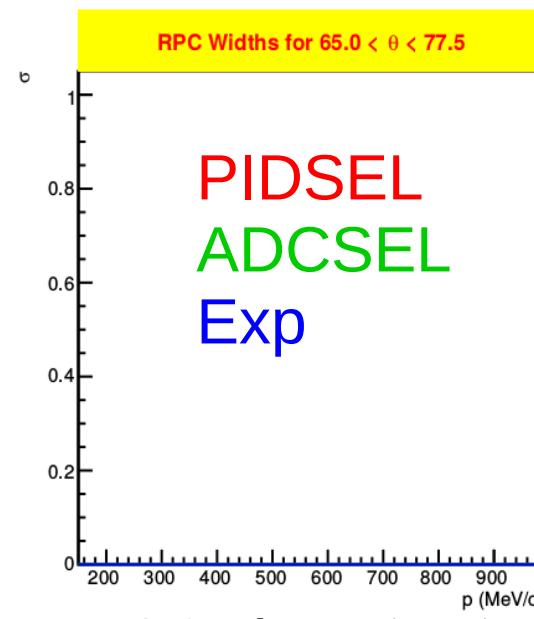
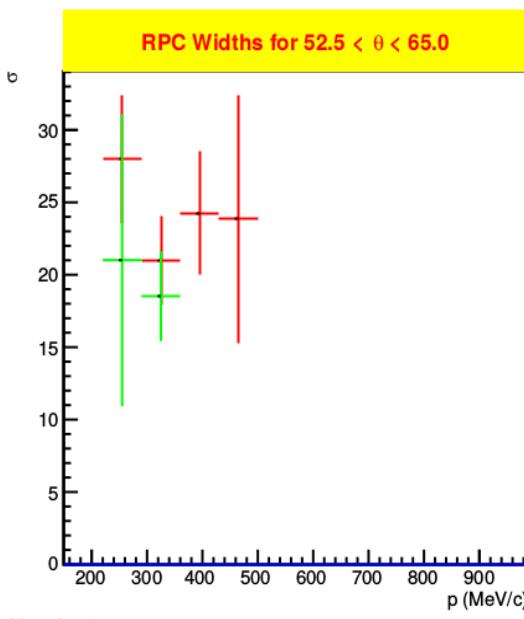
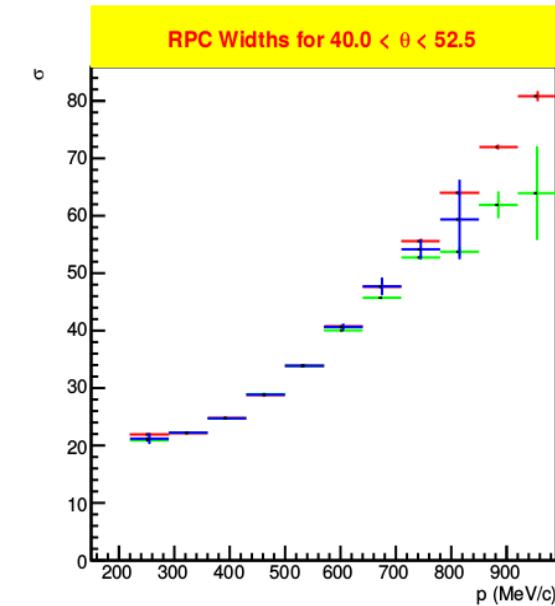
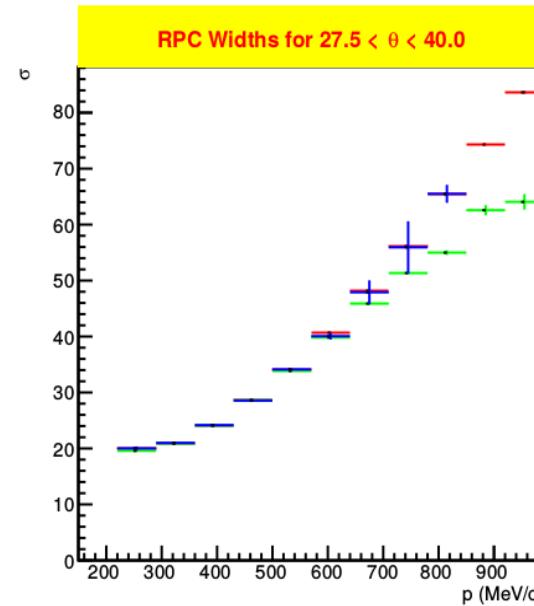
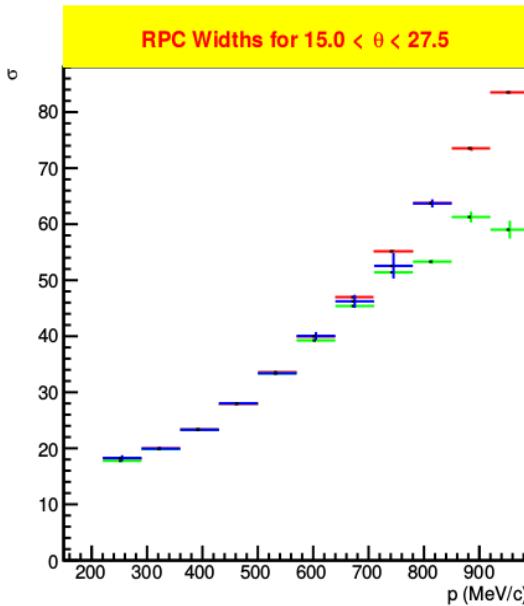
Exp $_{\pi} \rightarrow p_{\text{start}}$

Exp $_p \rightarrow p_{\text{start}}$

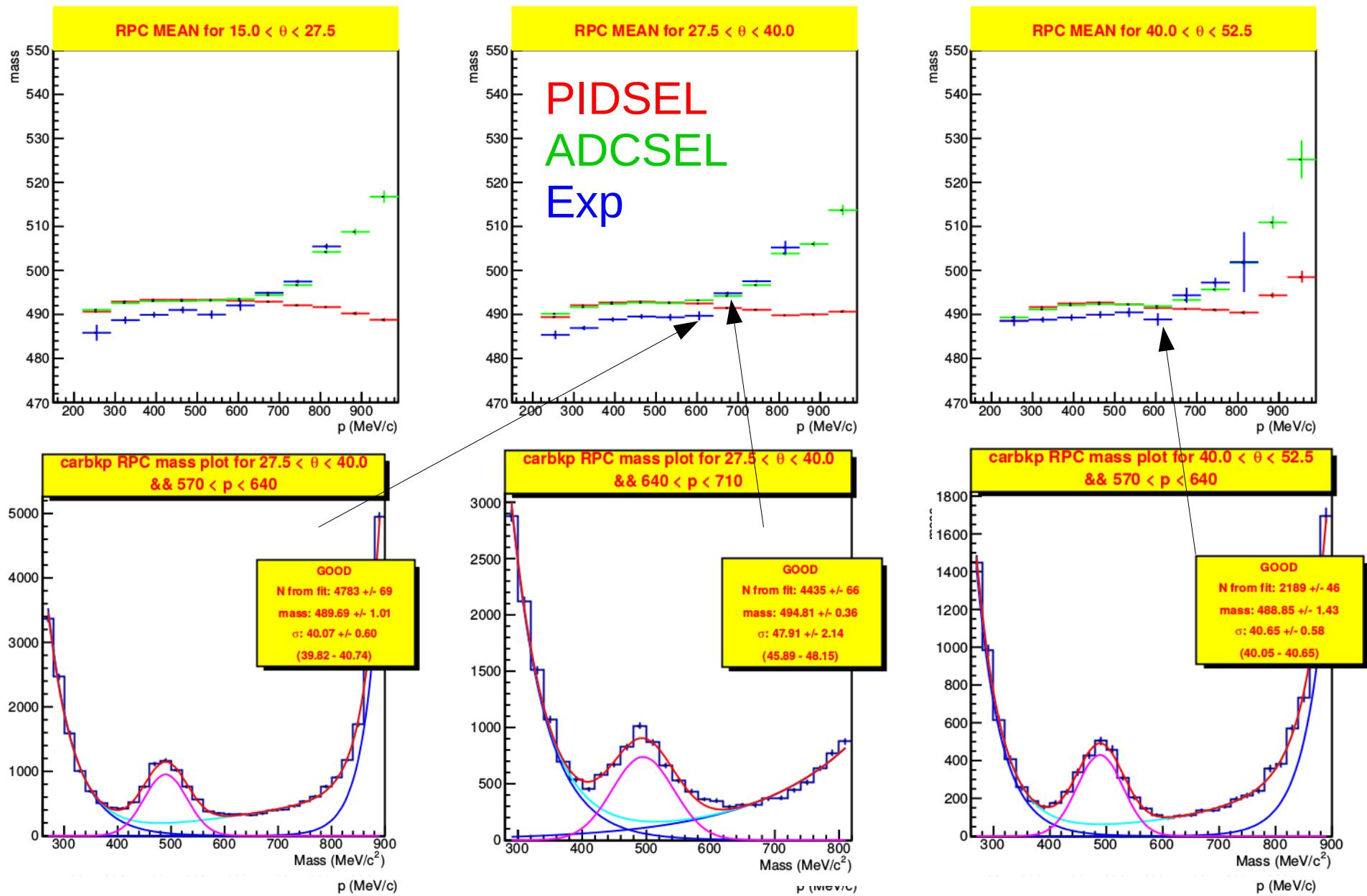
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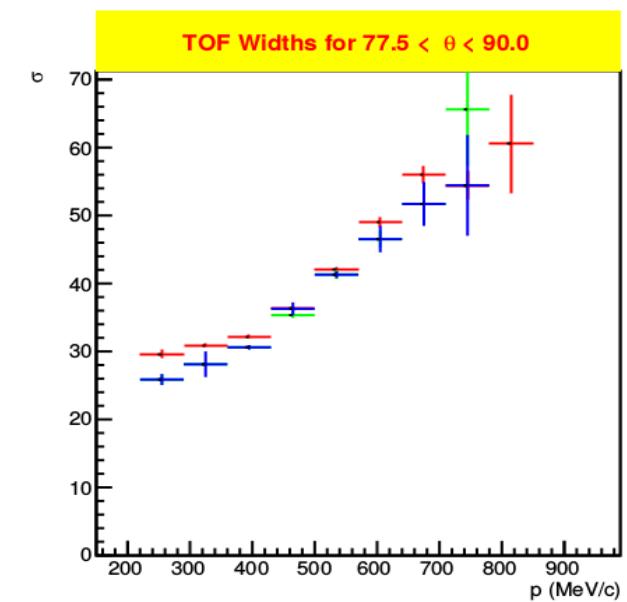
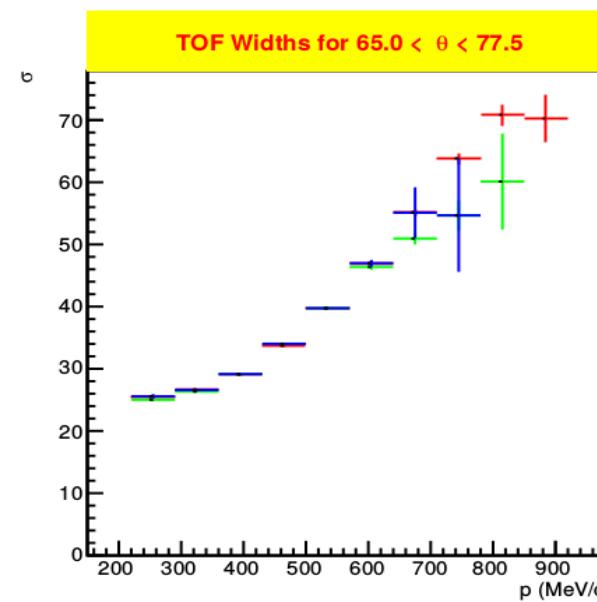
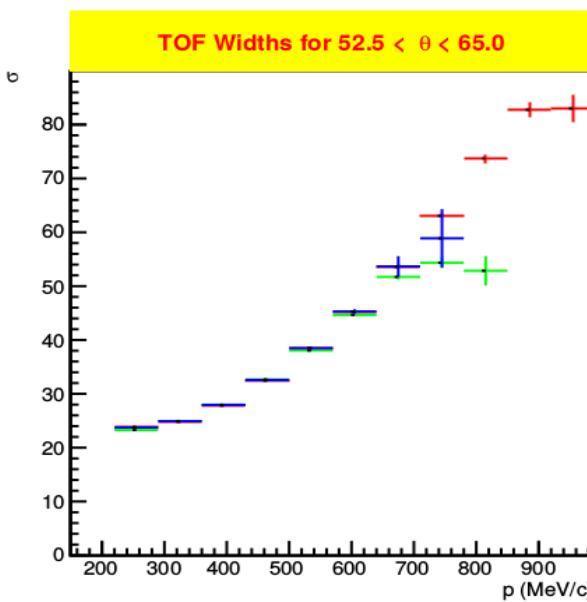
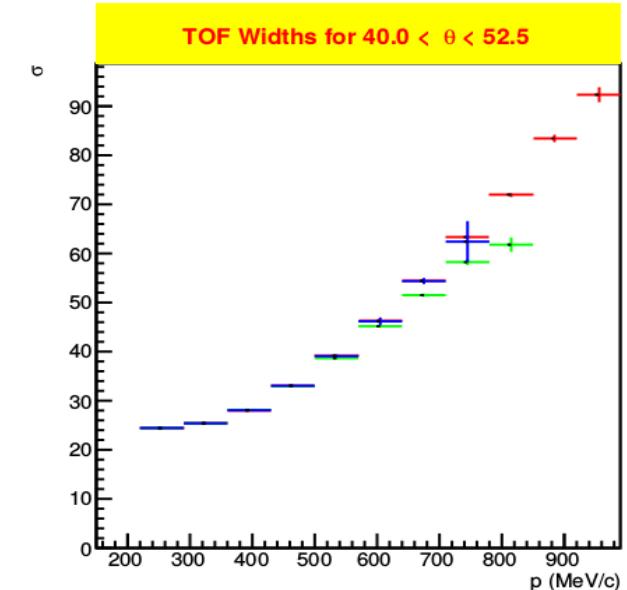
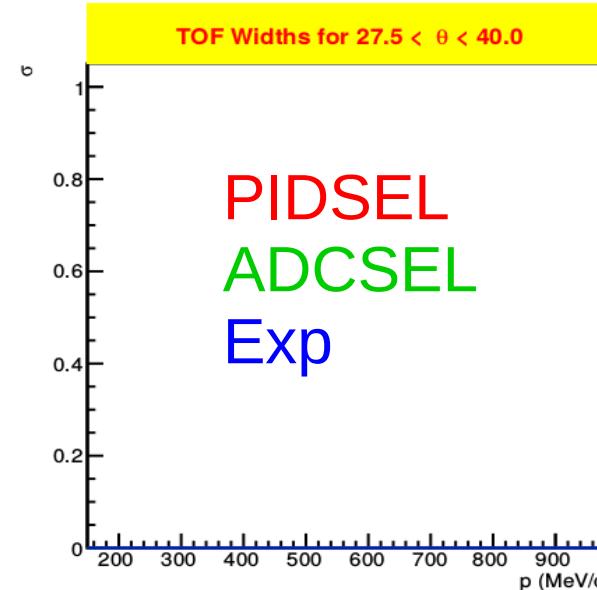
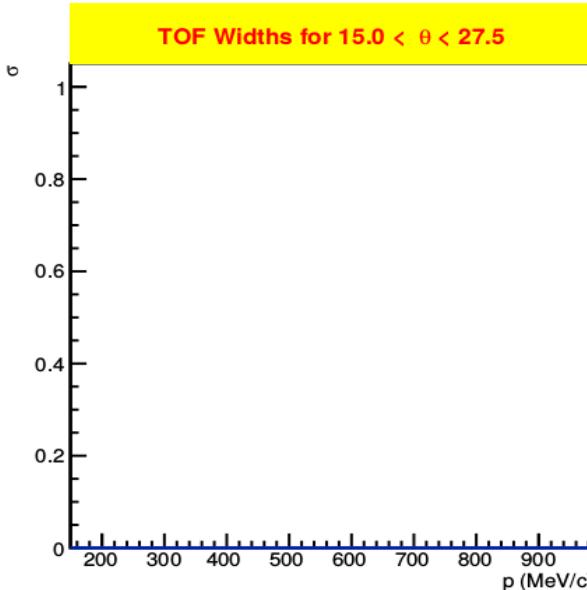
Fit results comparison ($\pi C \rightarrow K^+$)



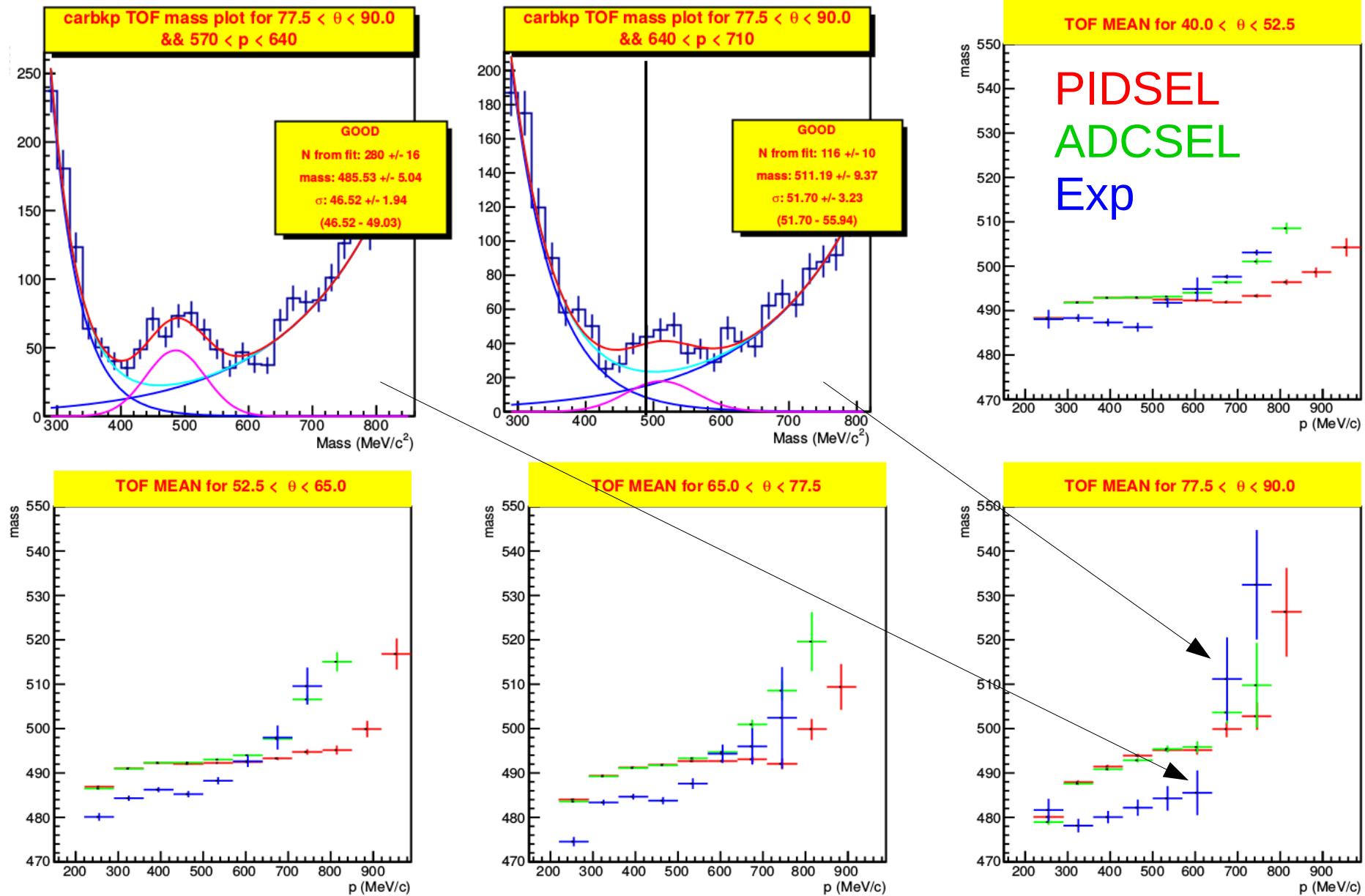
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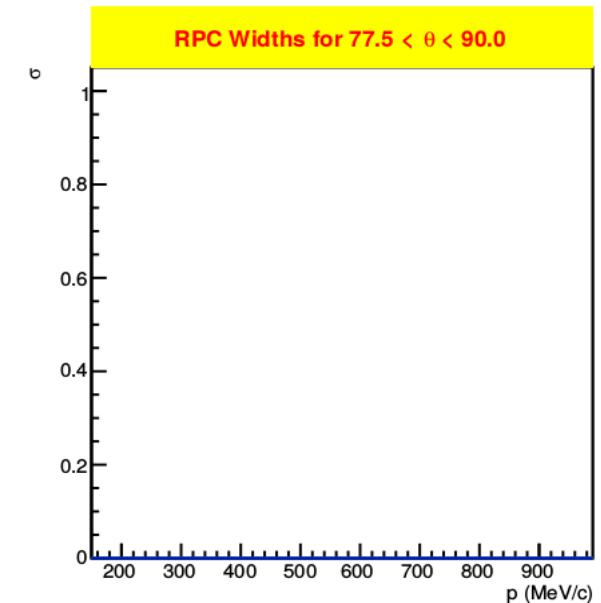
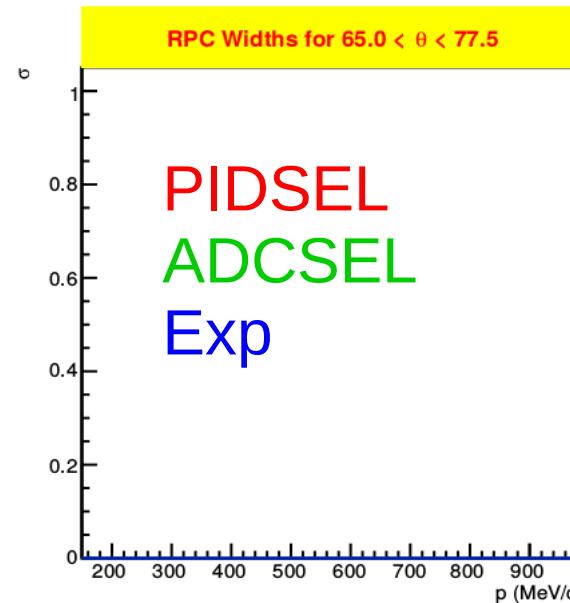
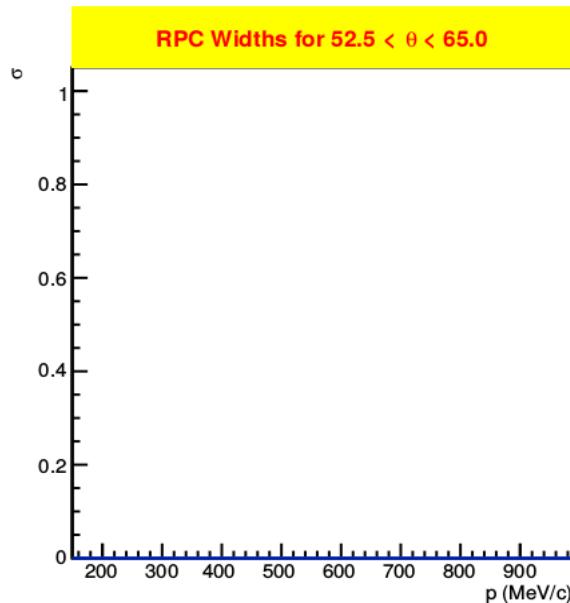
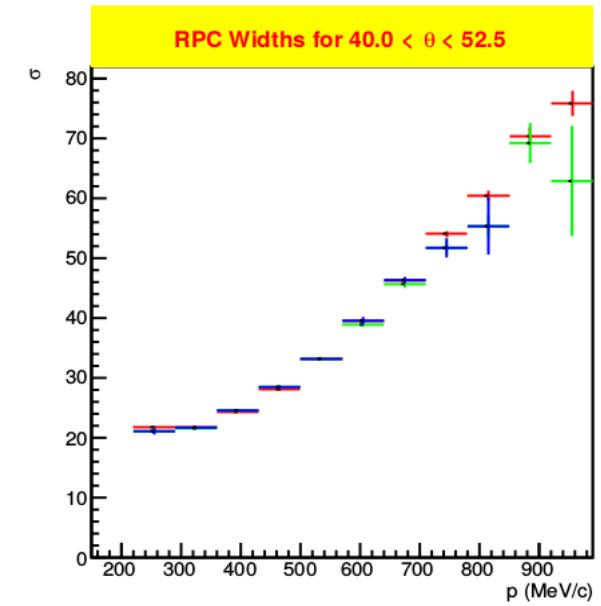
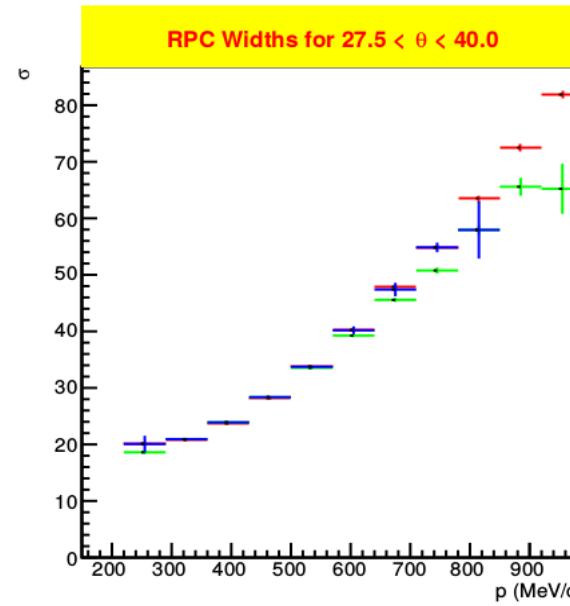
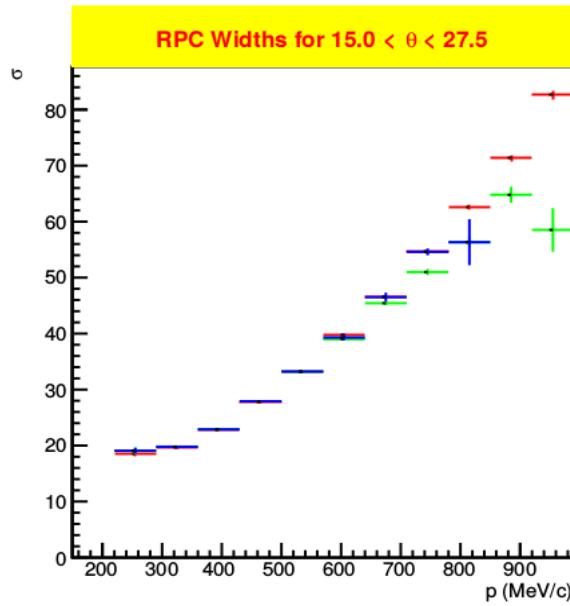


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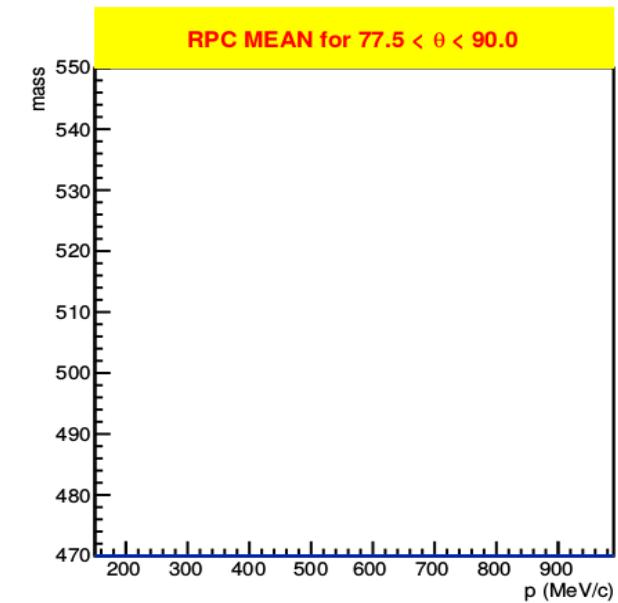
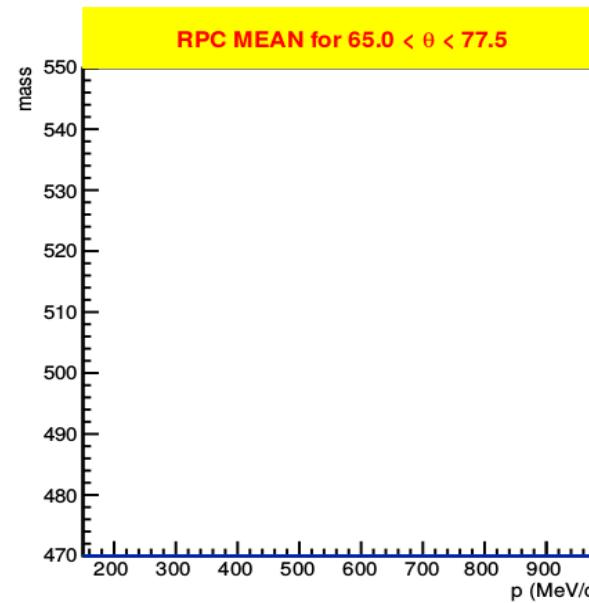
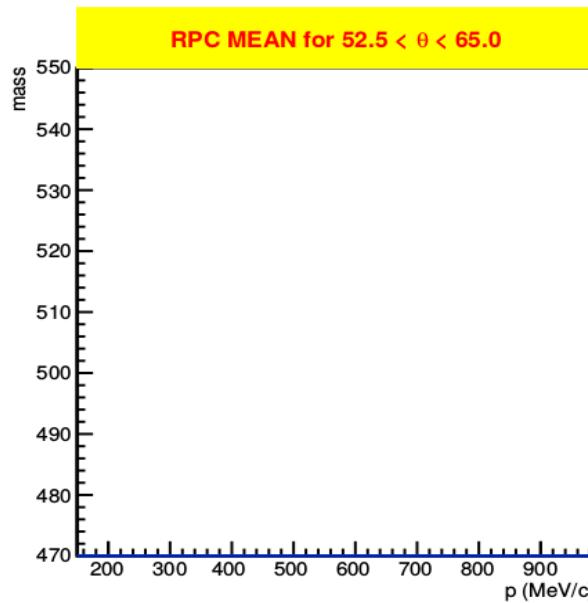
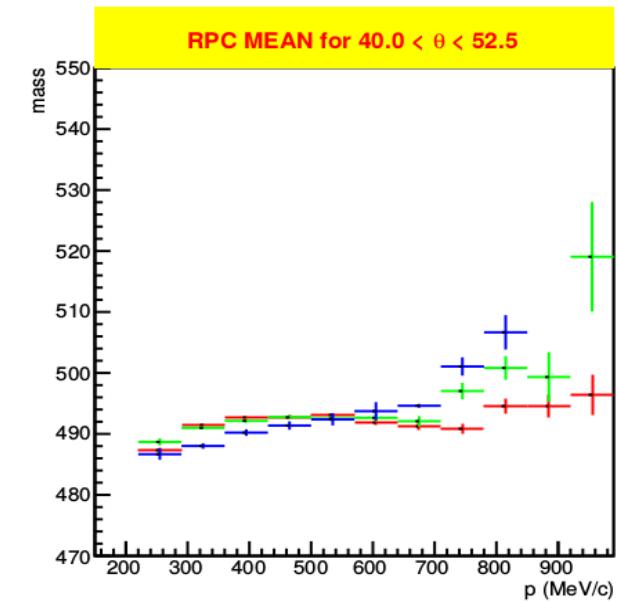
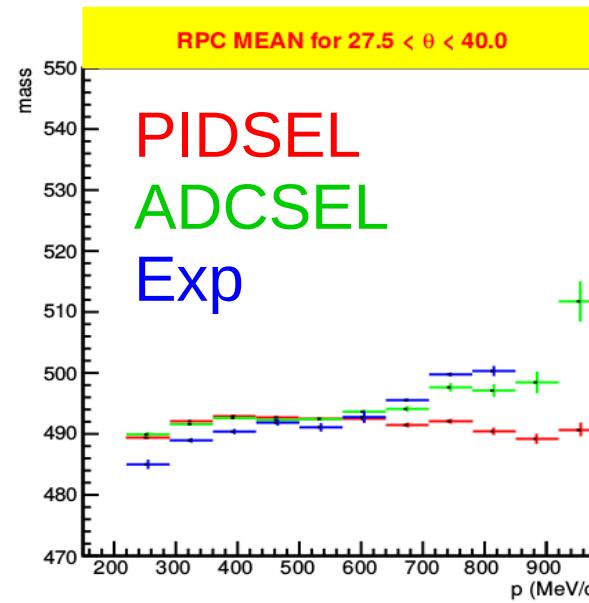
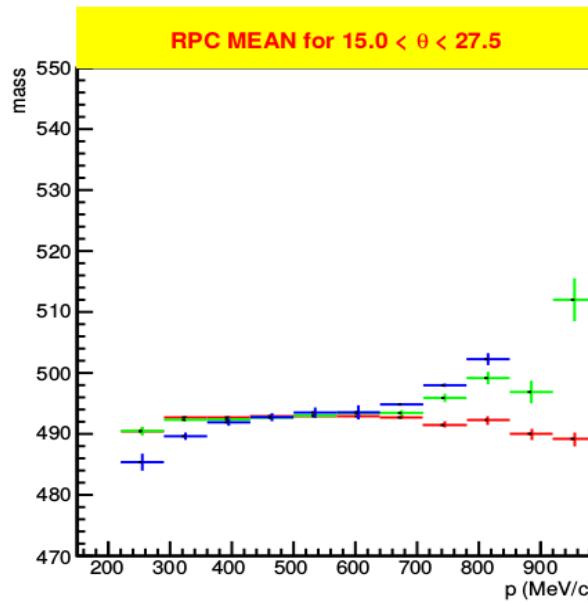


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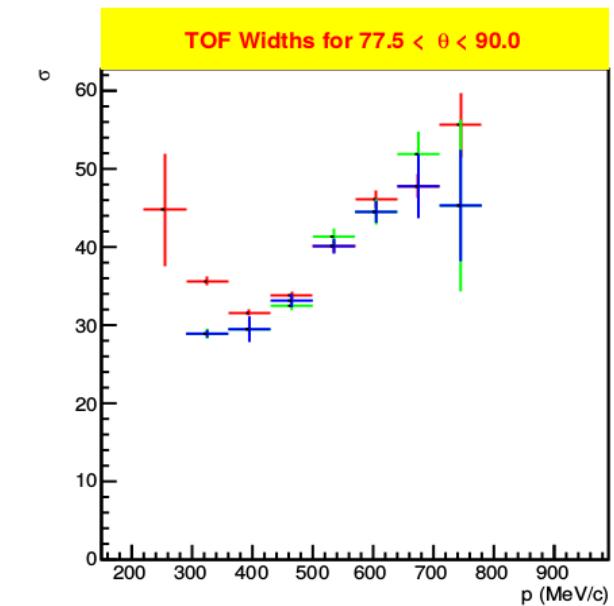
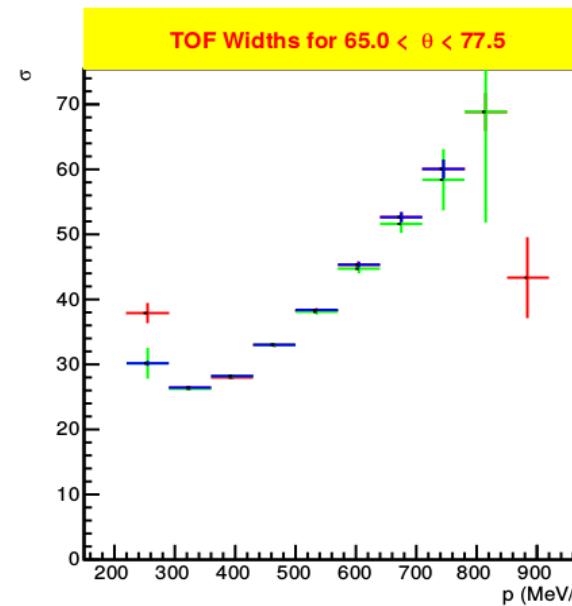
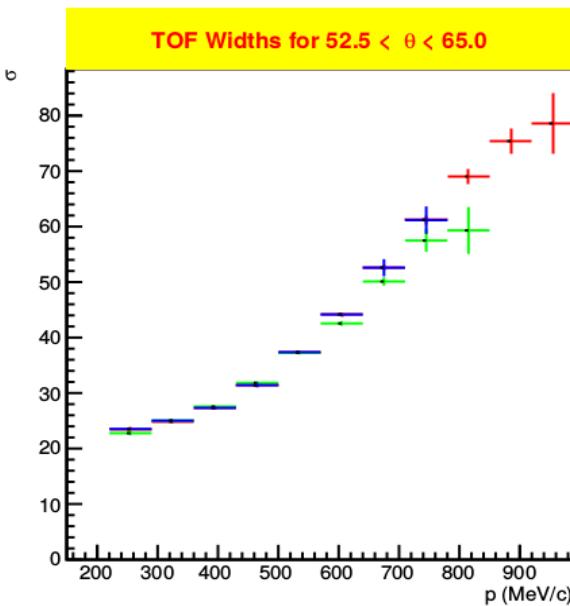
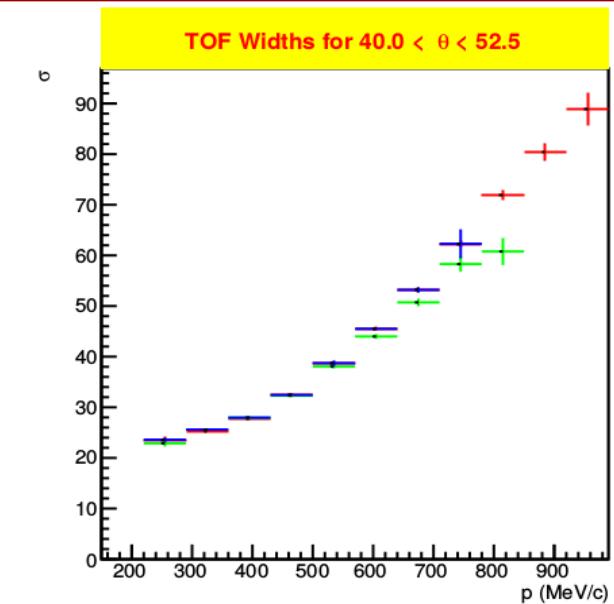
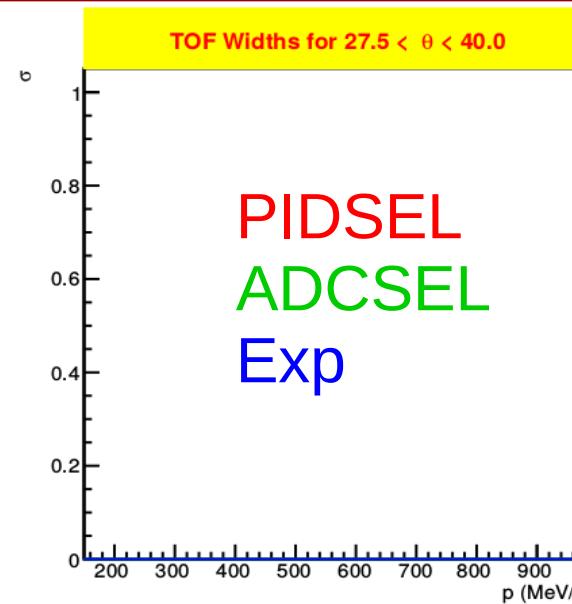
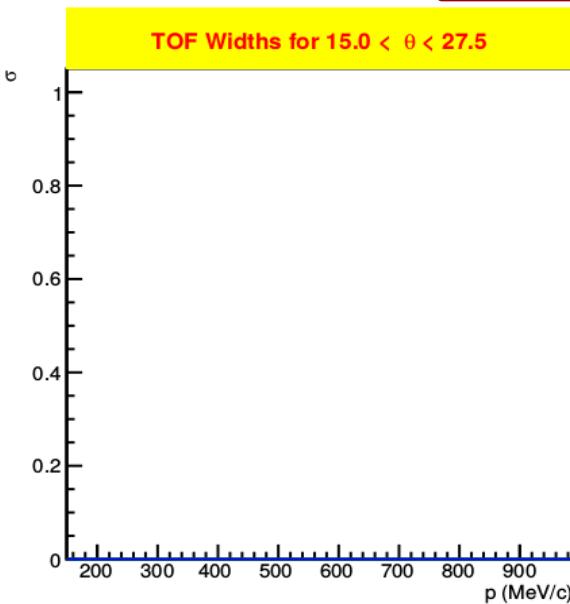


Fit results comparison ($\pi W \rightarrow K^+$)

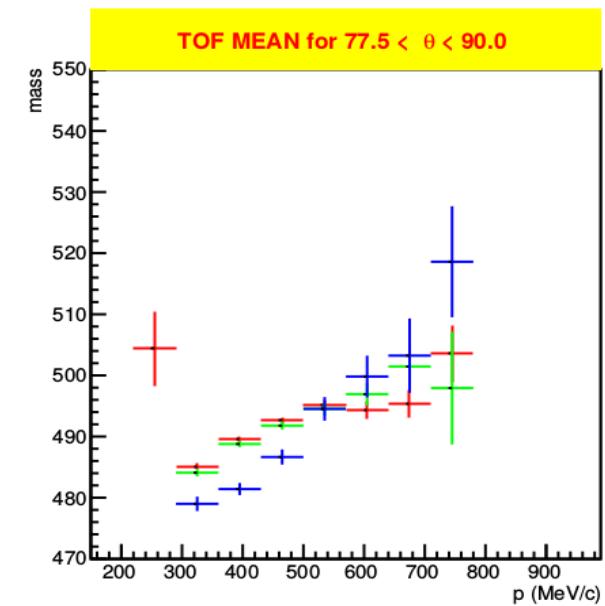
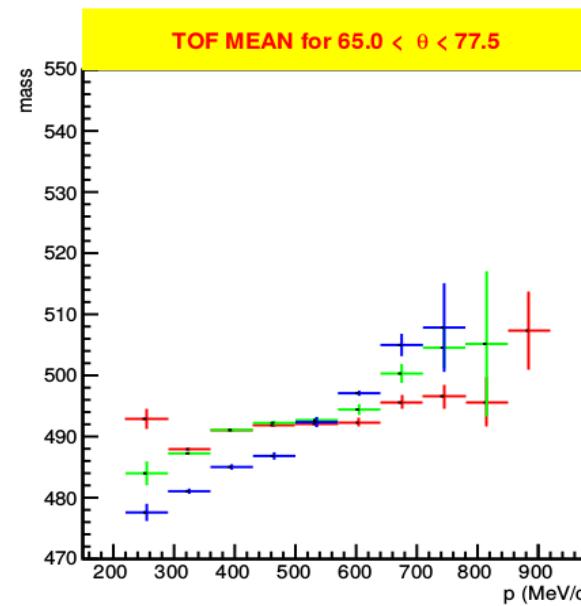
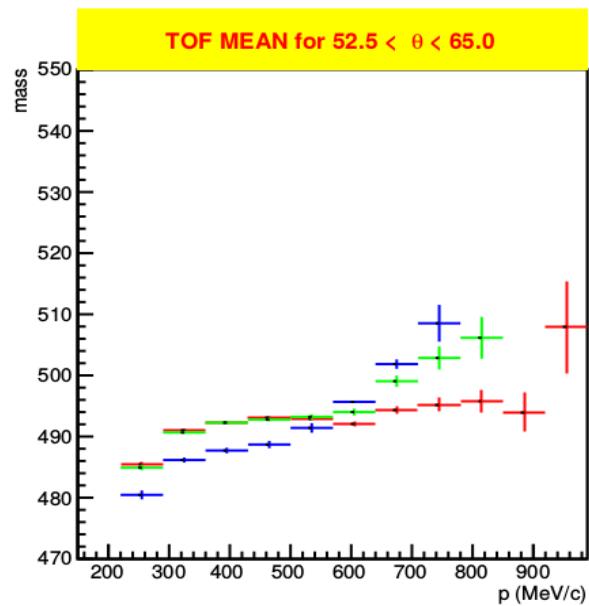
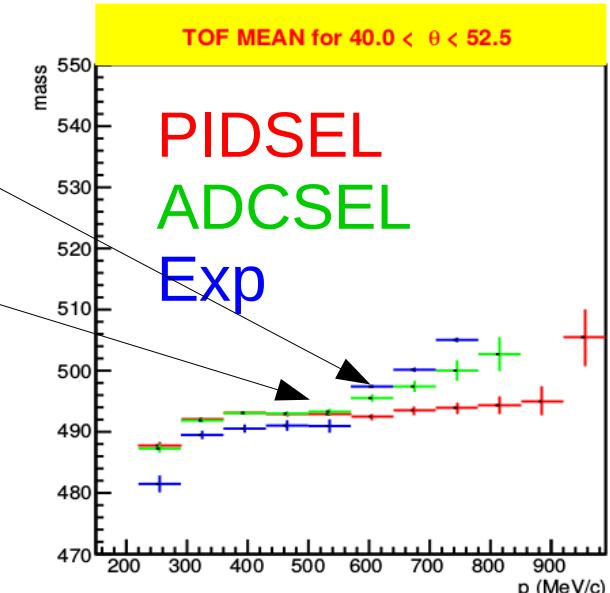
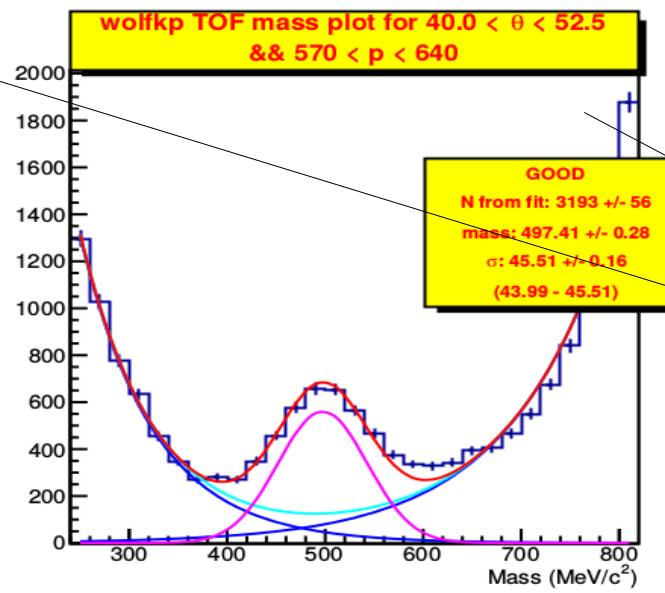
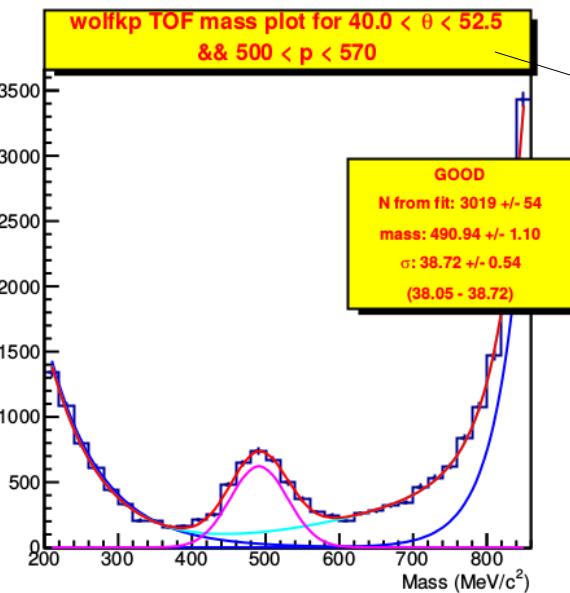
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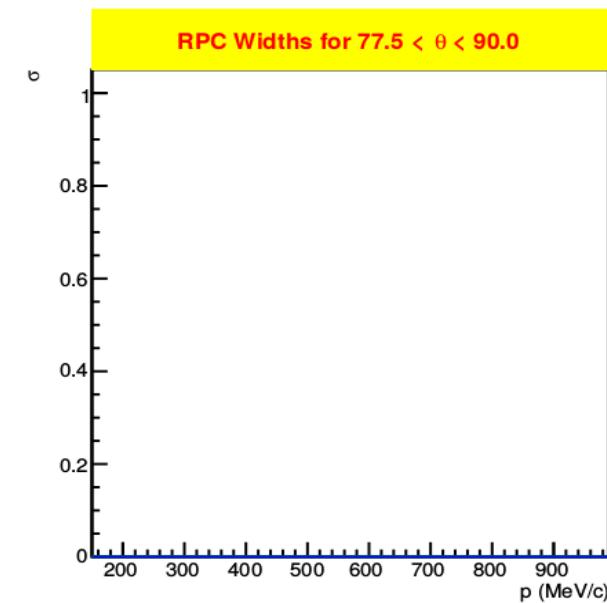
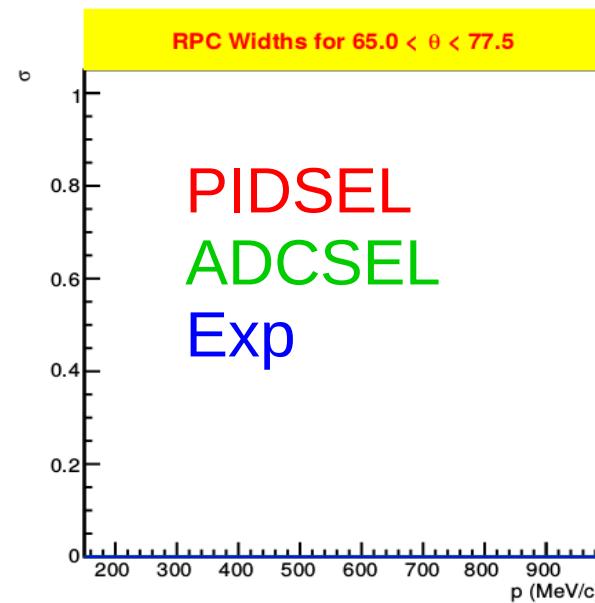
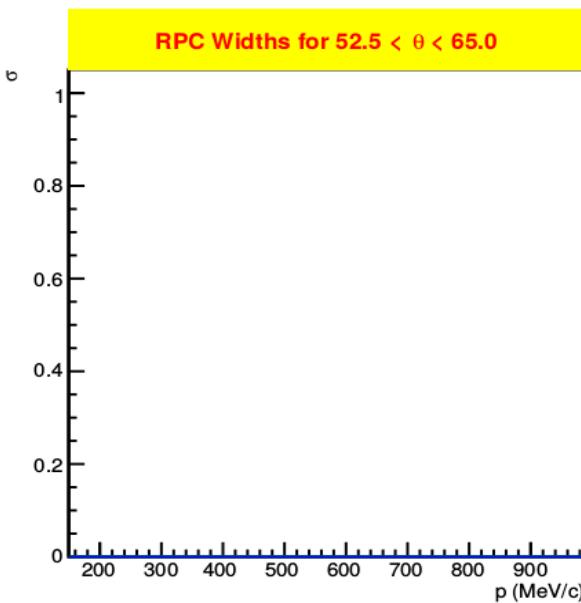
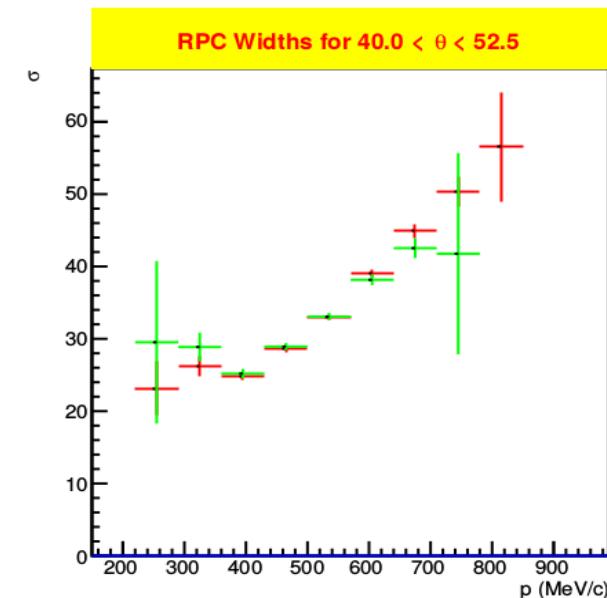
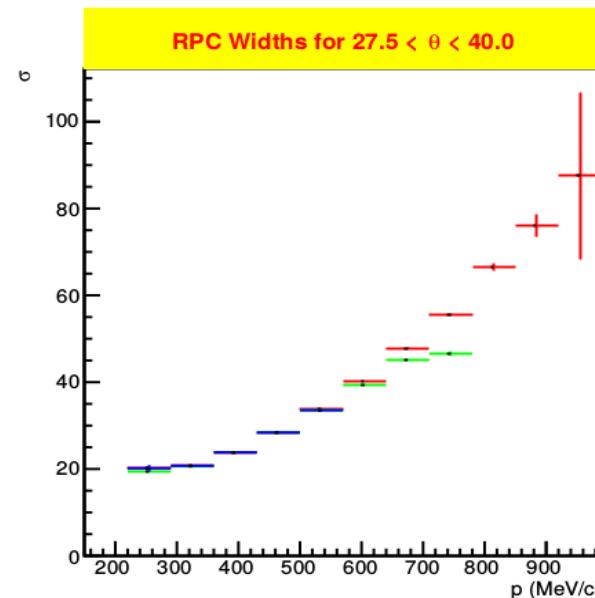
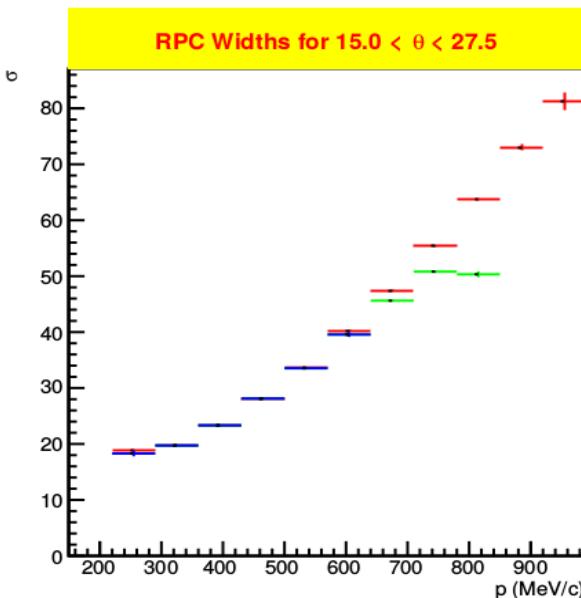
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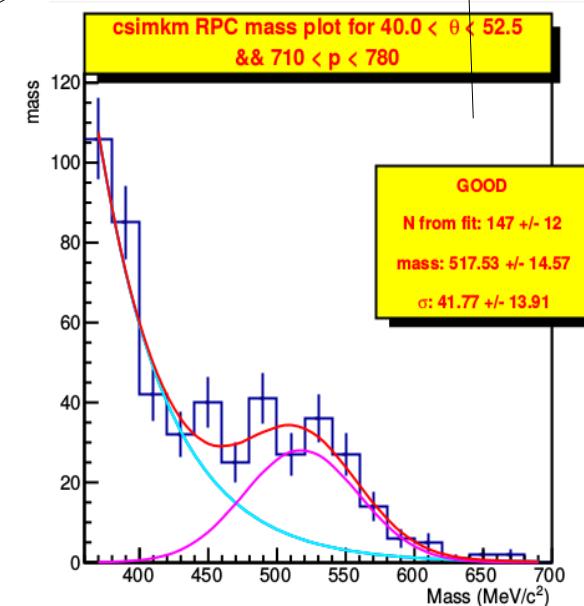
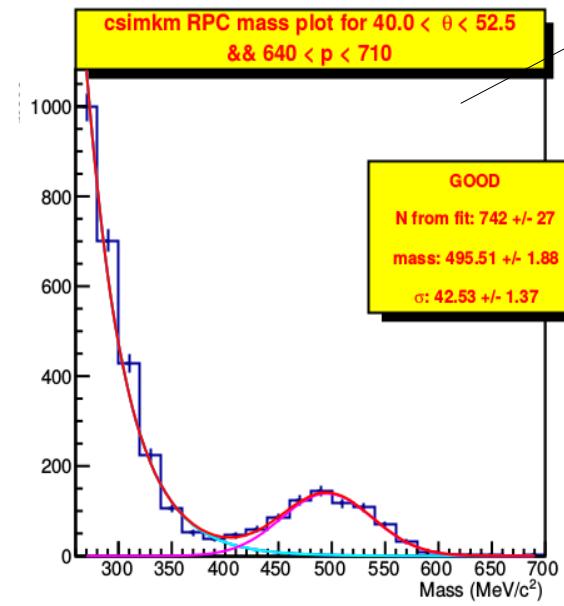
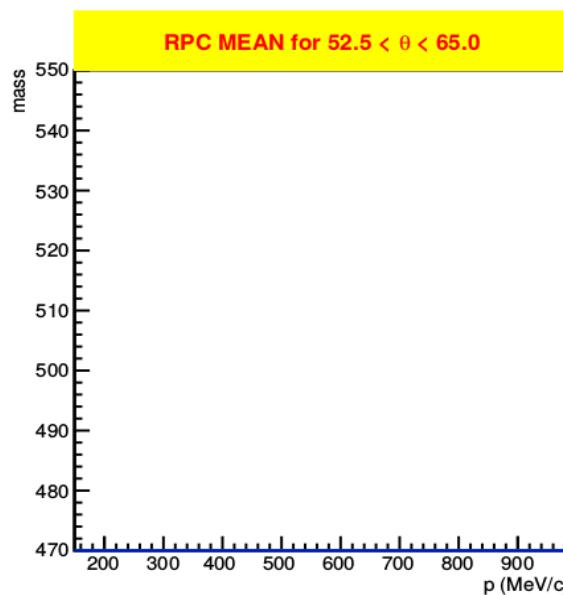
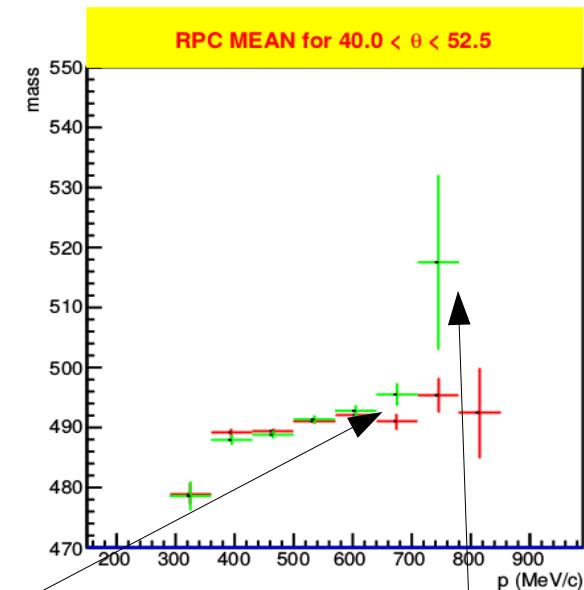
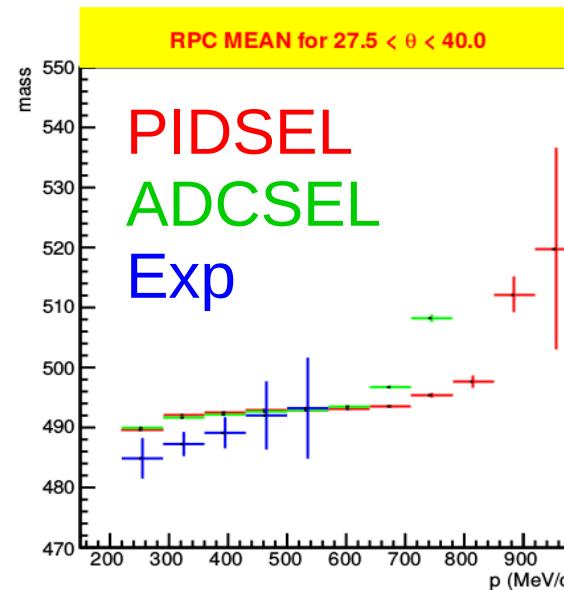
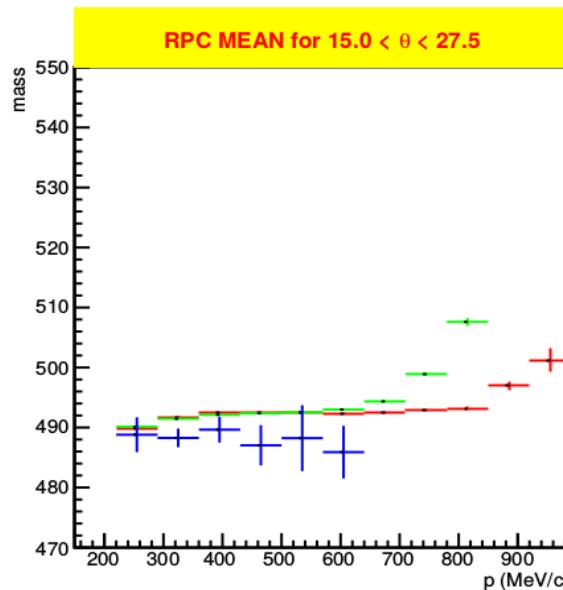
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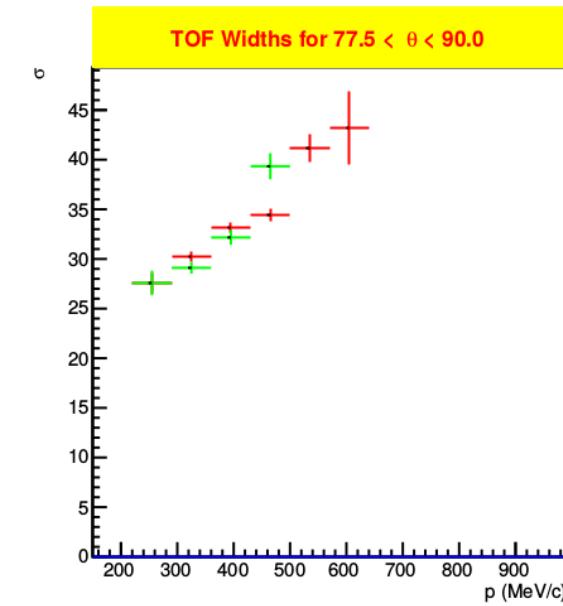
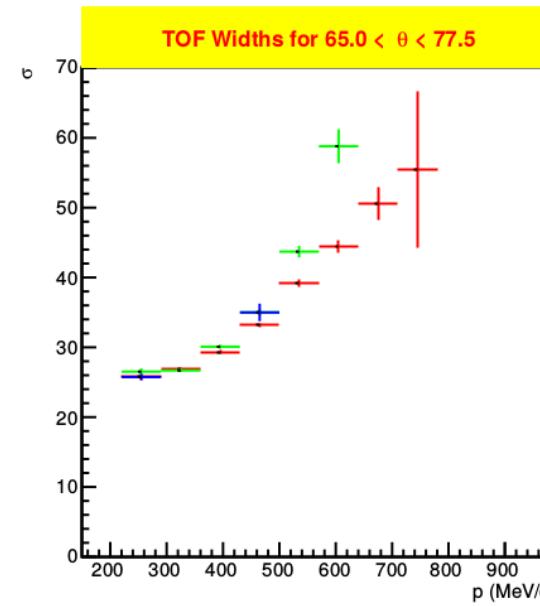
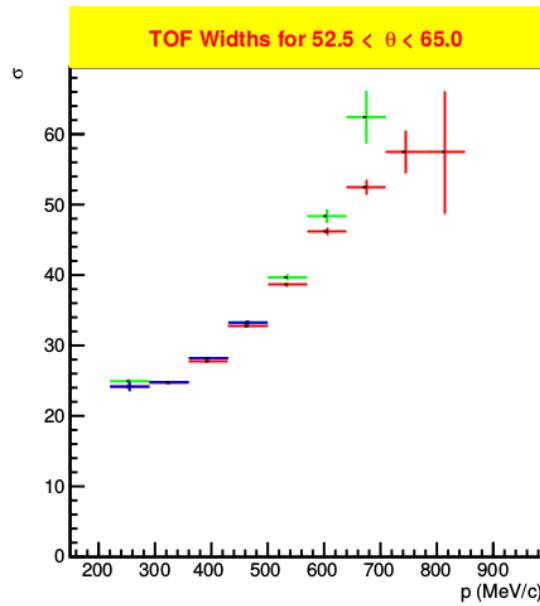
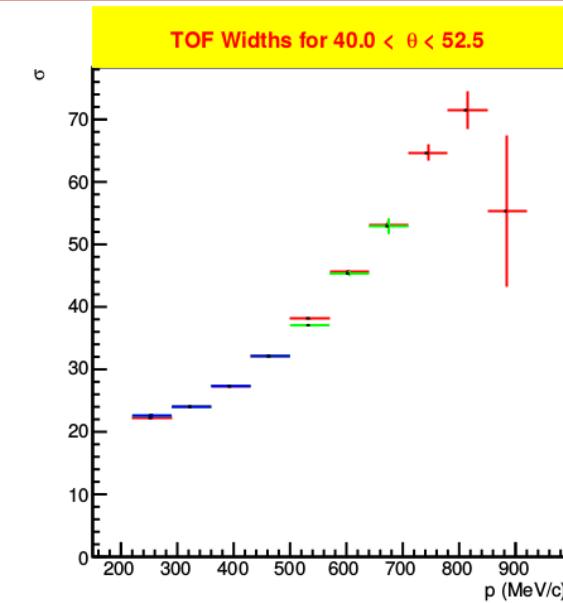
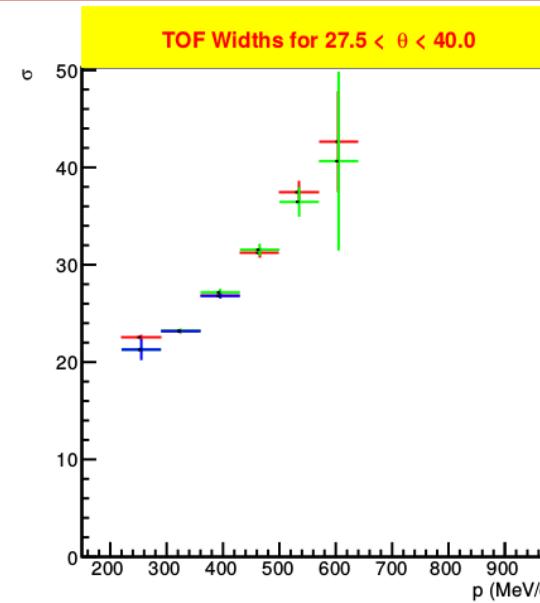
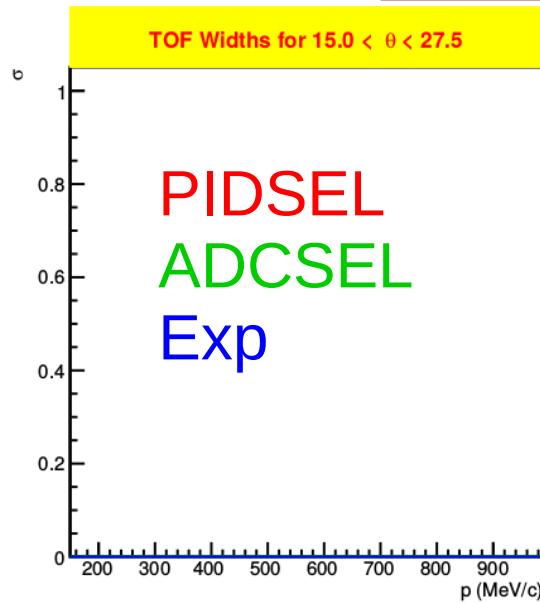


Fit results comparison ($\pi C \rightarrow K^-$)

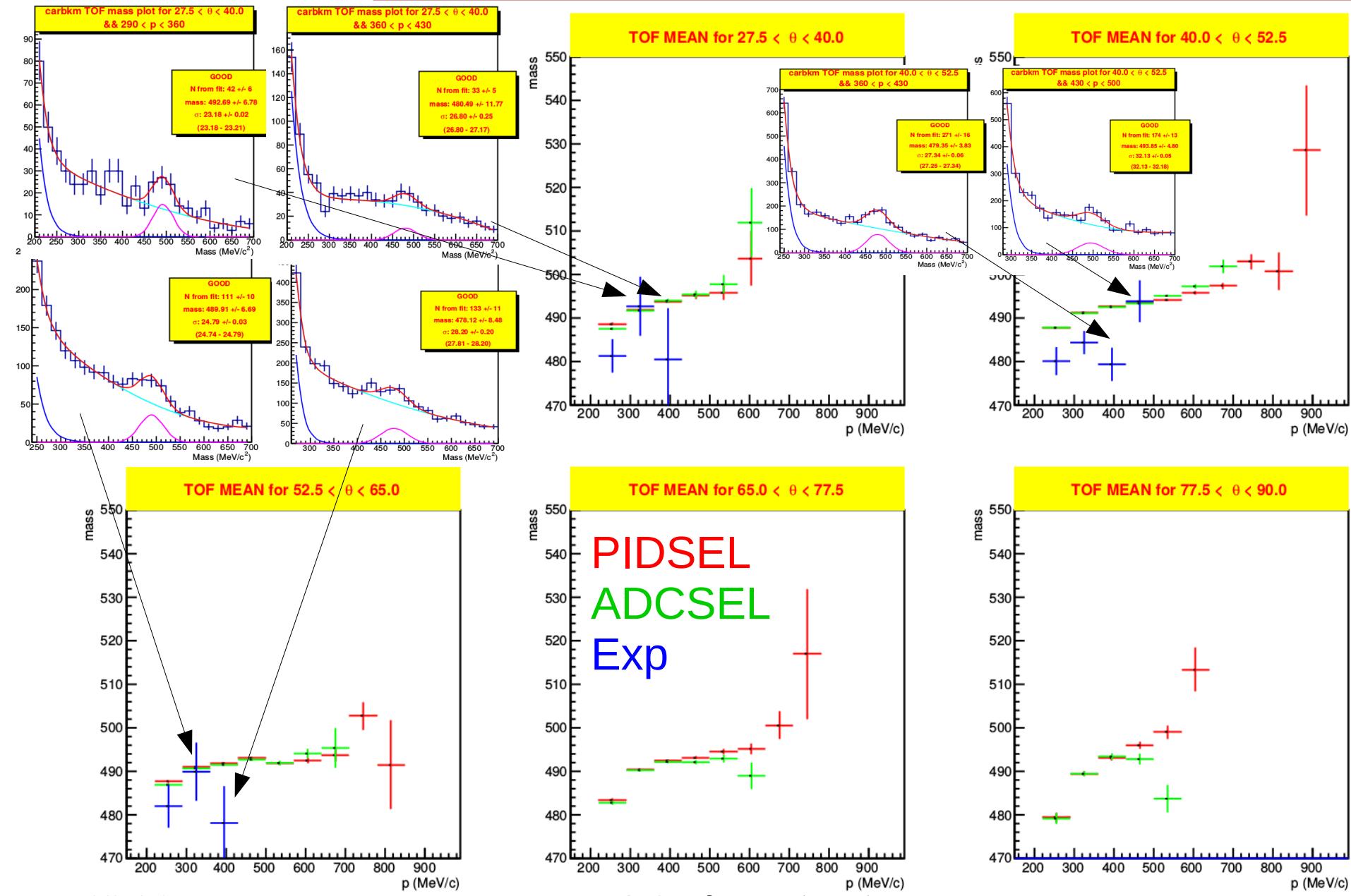


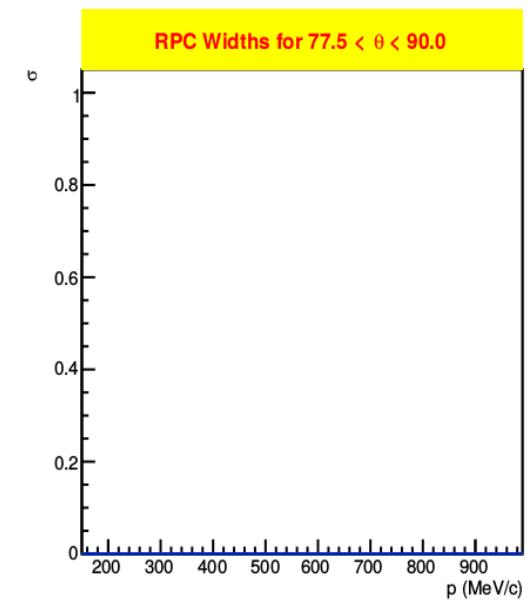
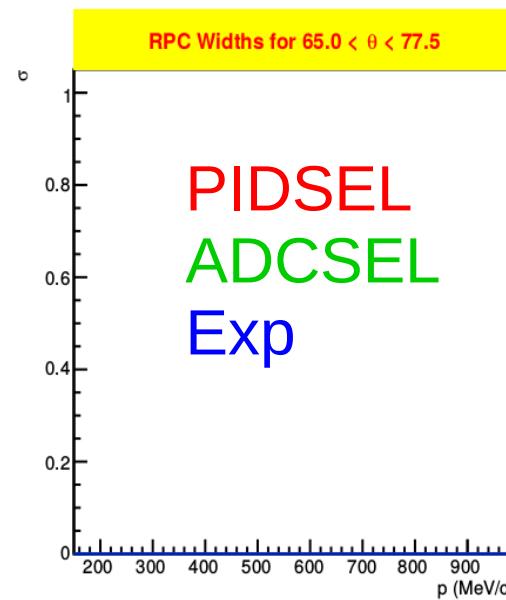
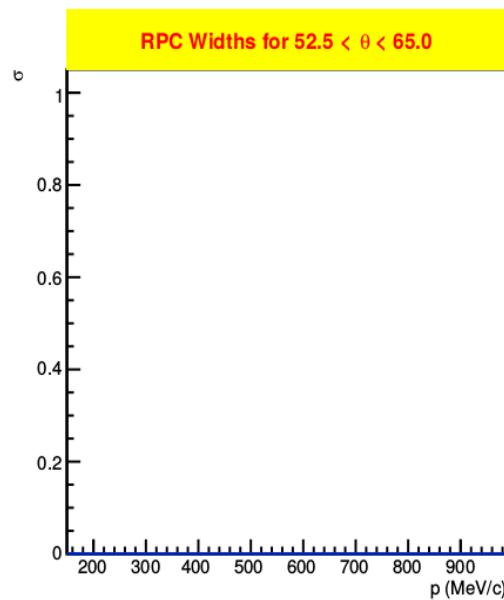
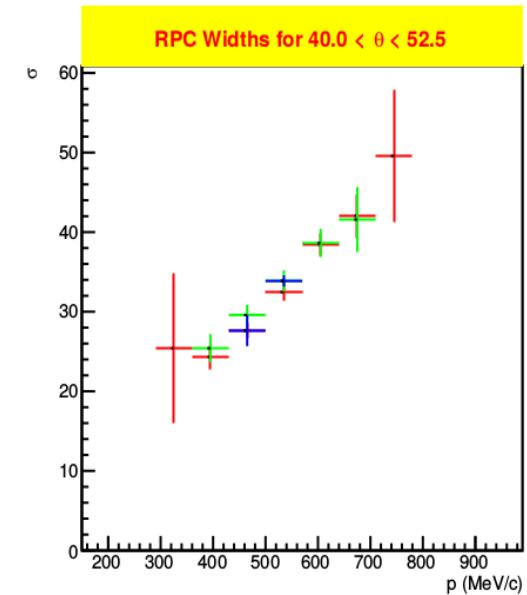
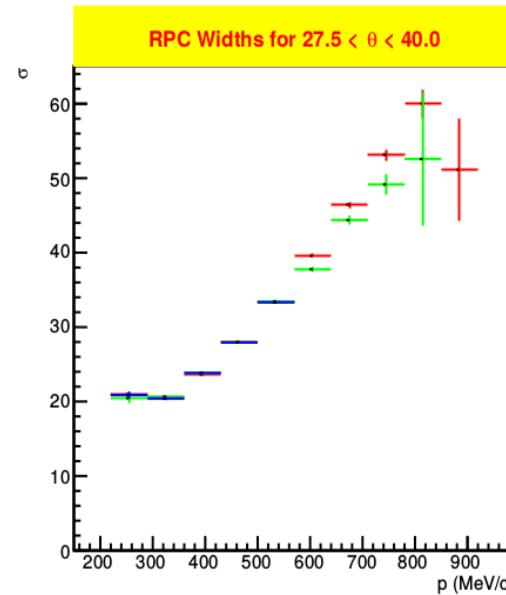
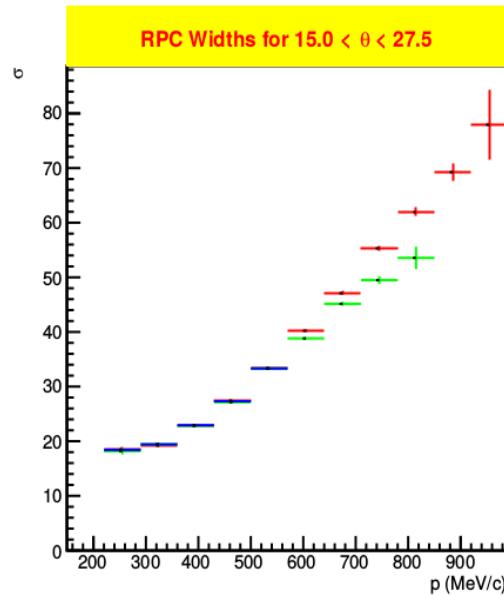
Fit results comparison ($\pi C \rightarrow K^-$)



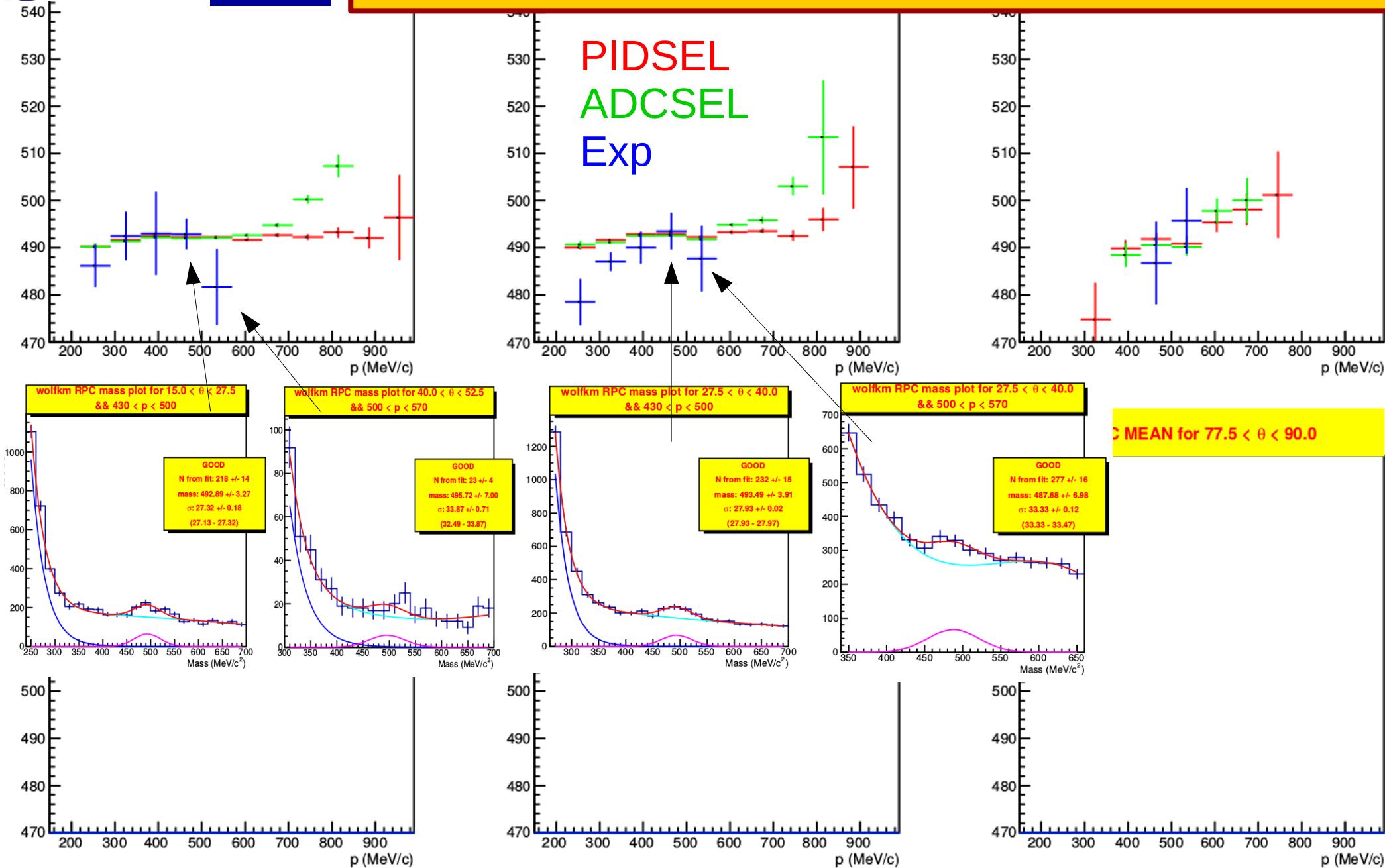
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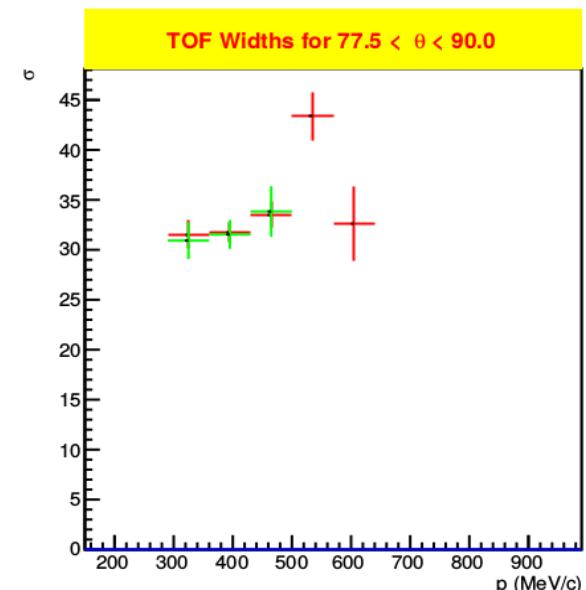
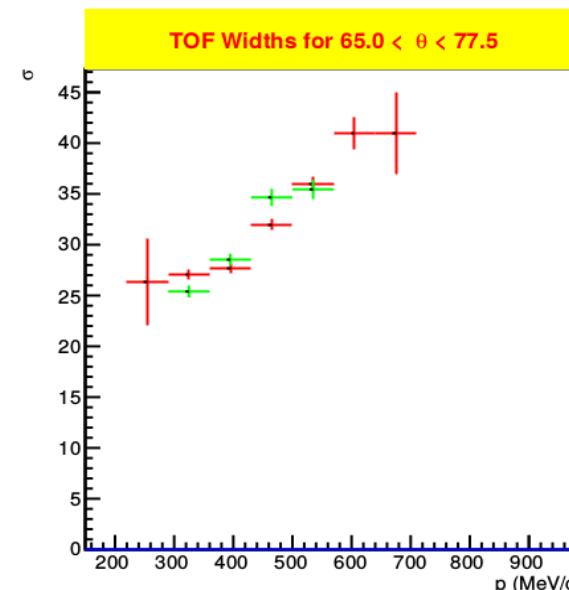
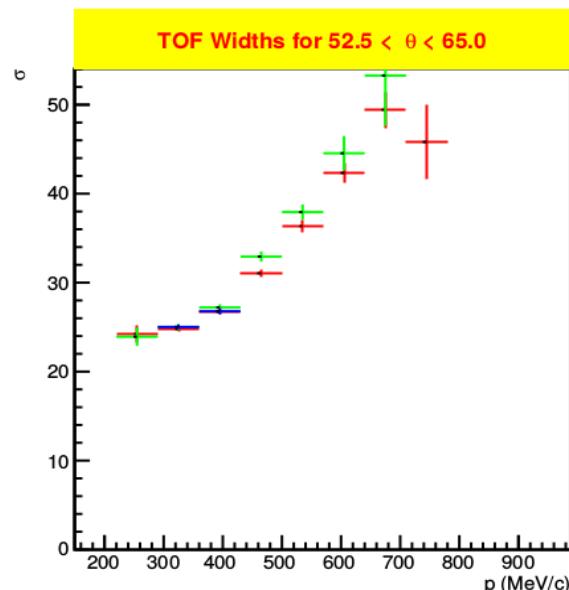
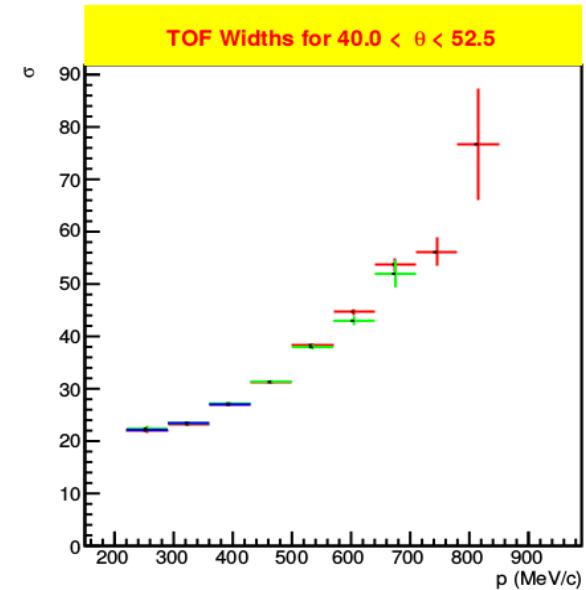
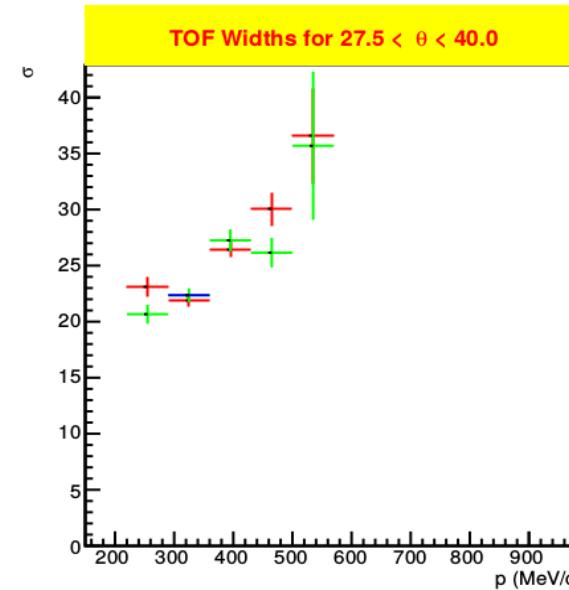
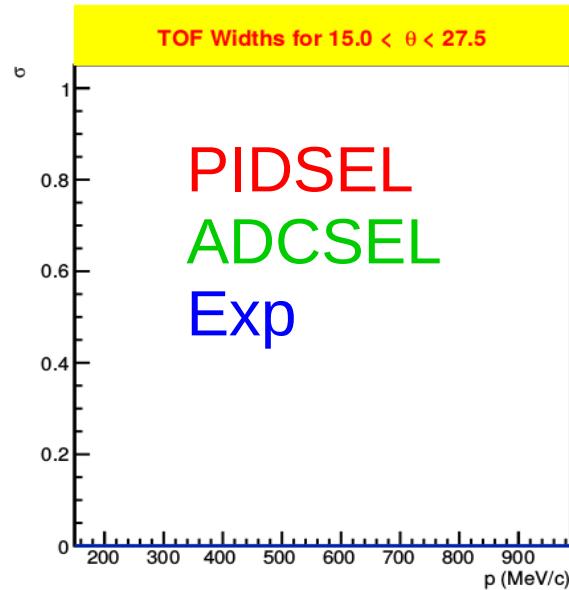


Fit results comparison ($\pi W \rightarrow K^-$)

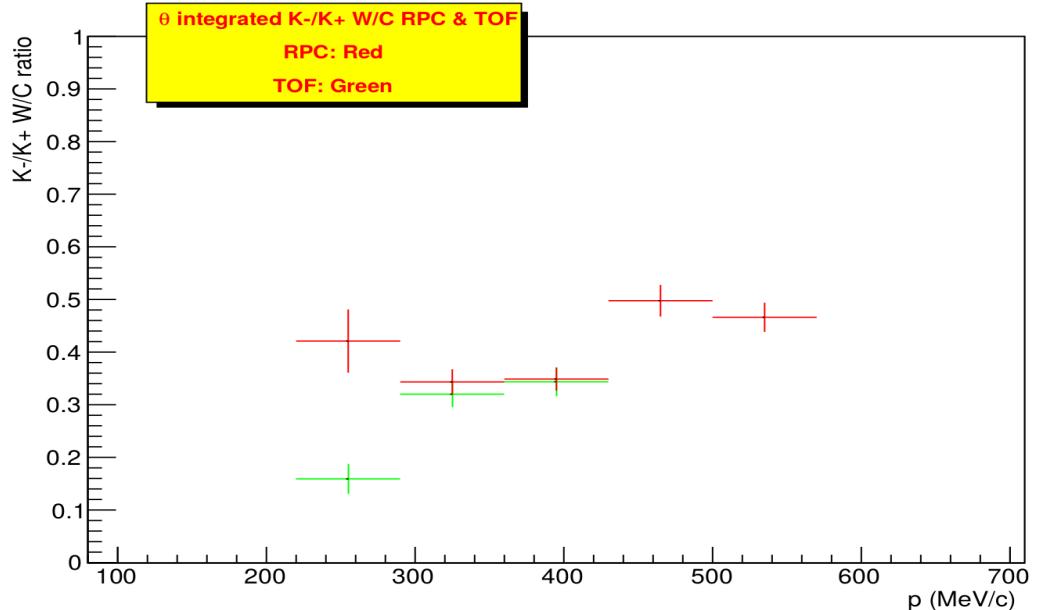
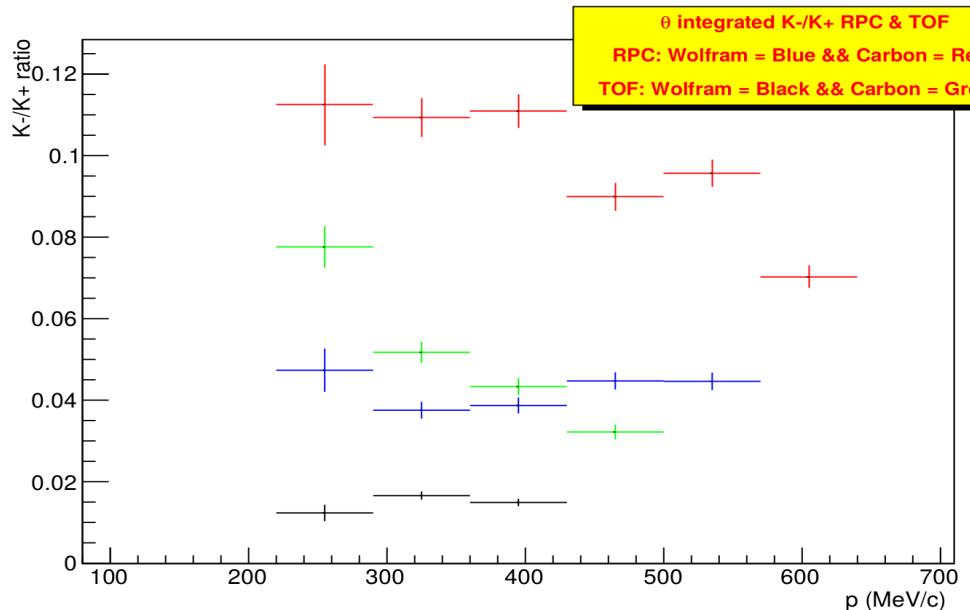
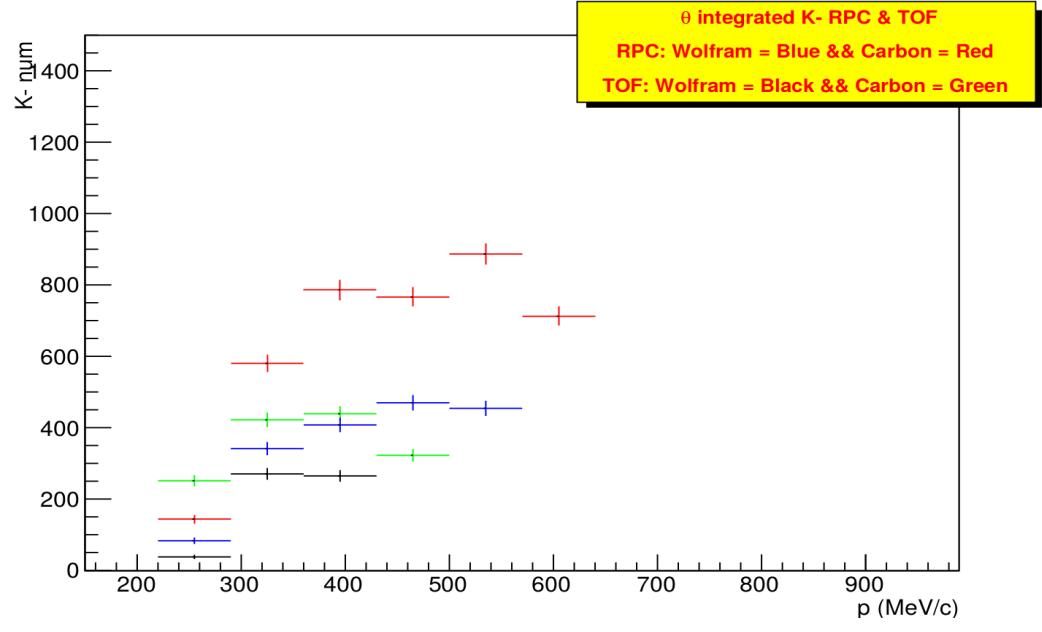
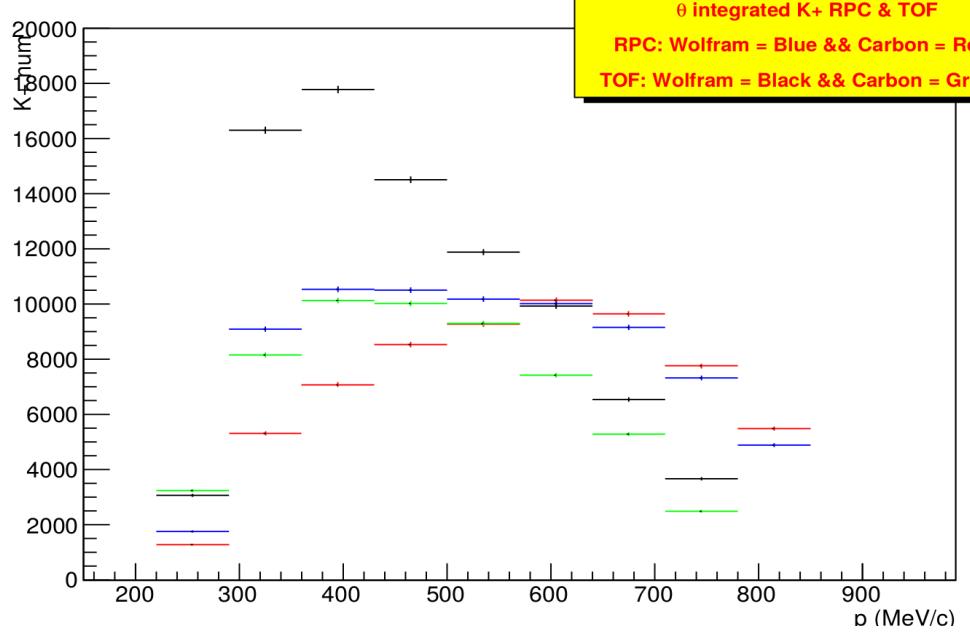
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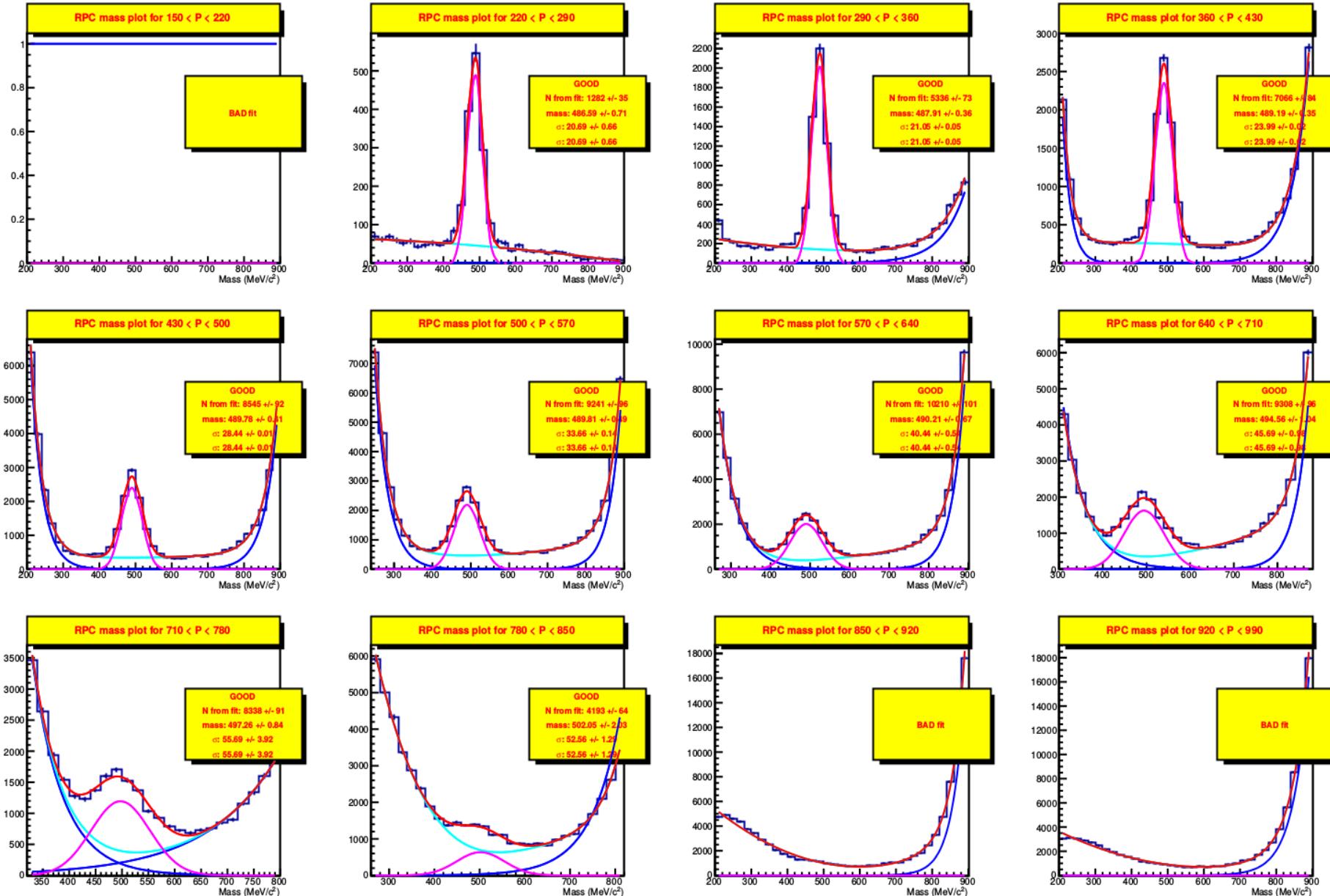
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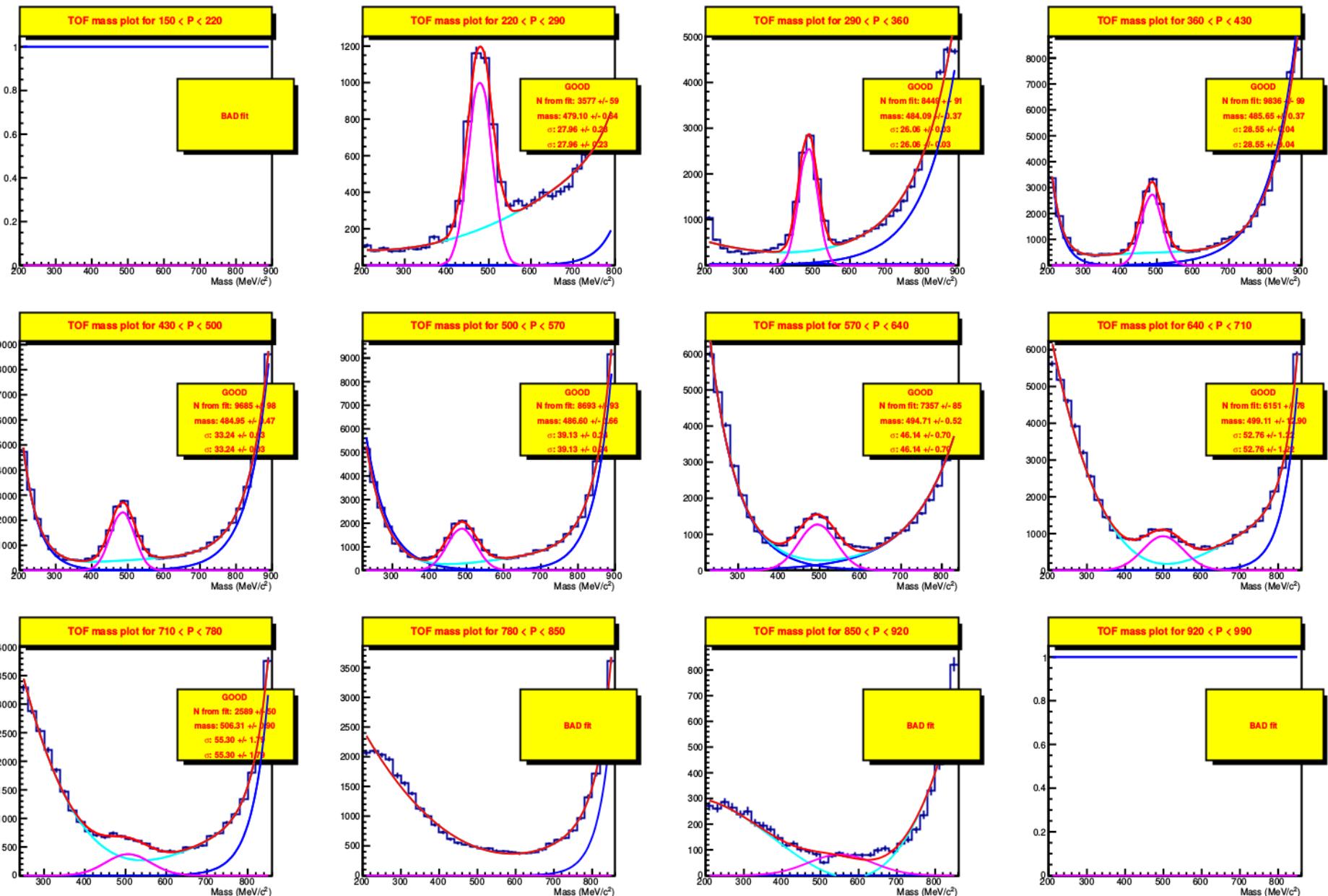
K-/K+ ratios (C,W,W/C)



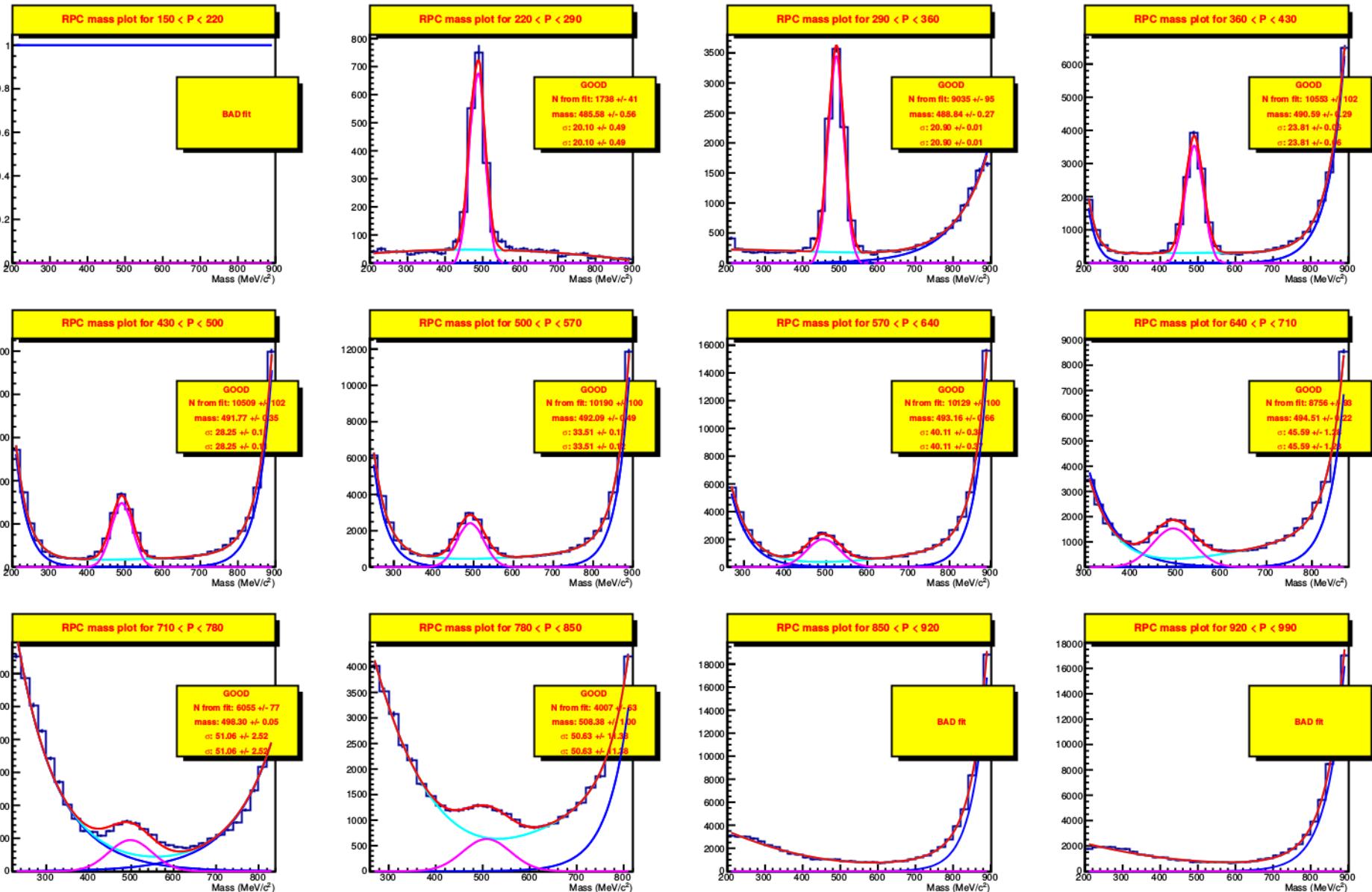
Fit results for p-slices spectra ($\pi C \rightarrow K^+$)



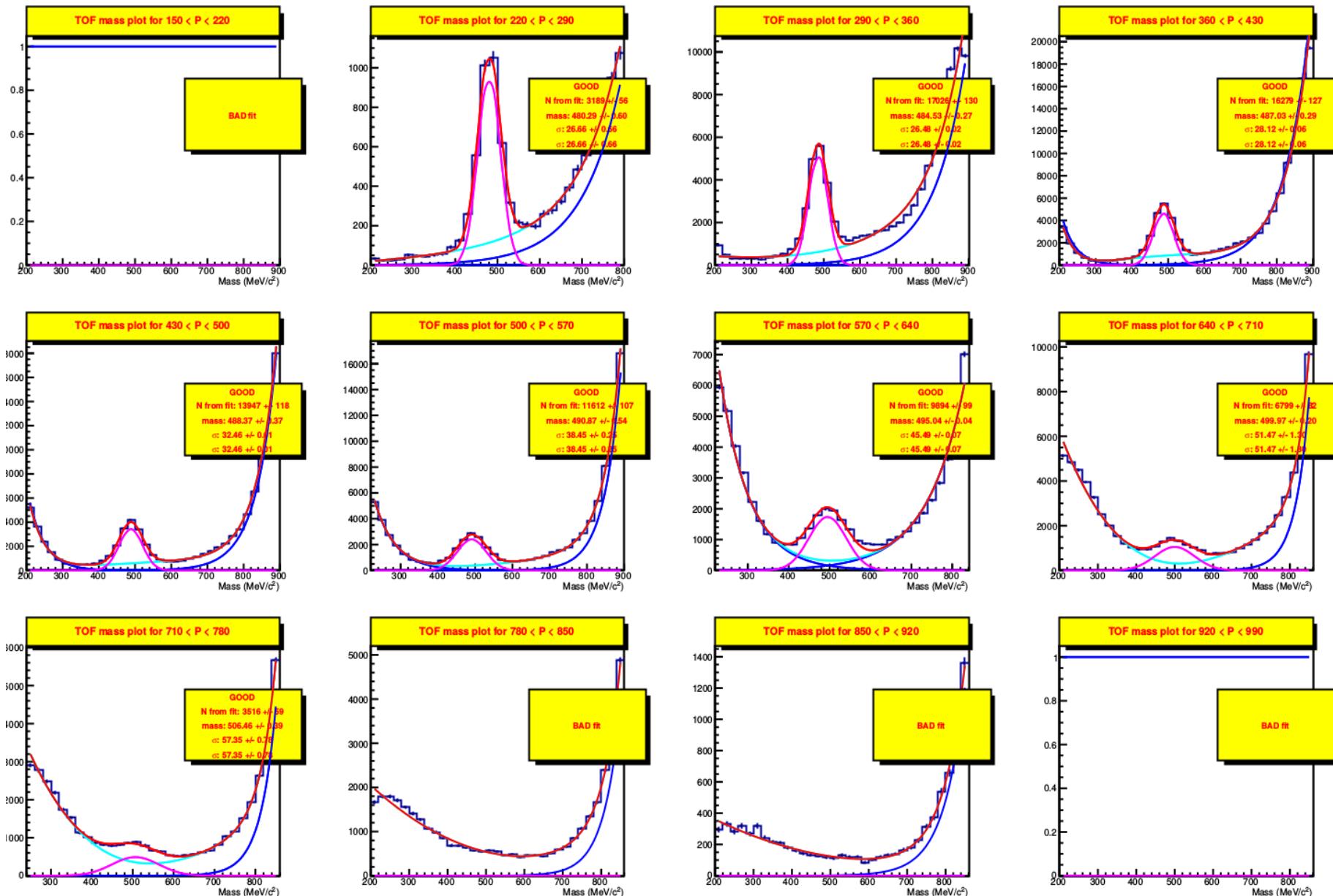
Fit results for p-slices spectra ($\pi C \rightarrow K^+$)



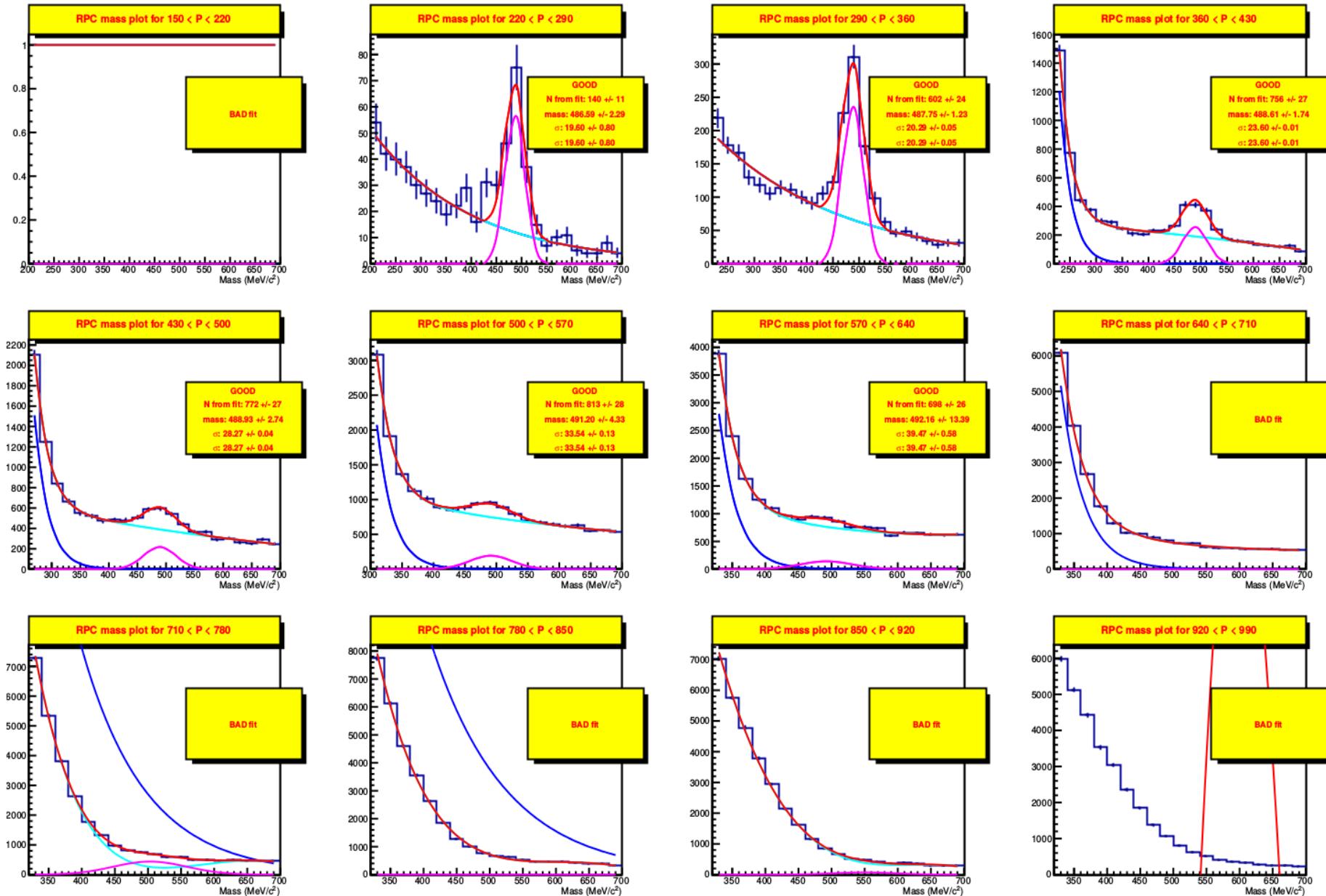
Fit results for p-slices spectra ($\pi W \rightarrow K^+$)



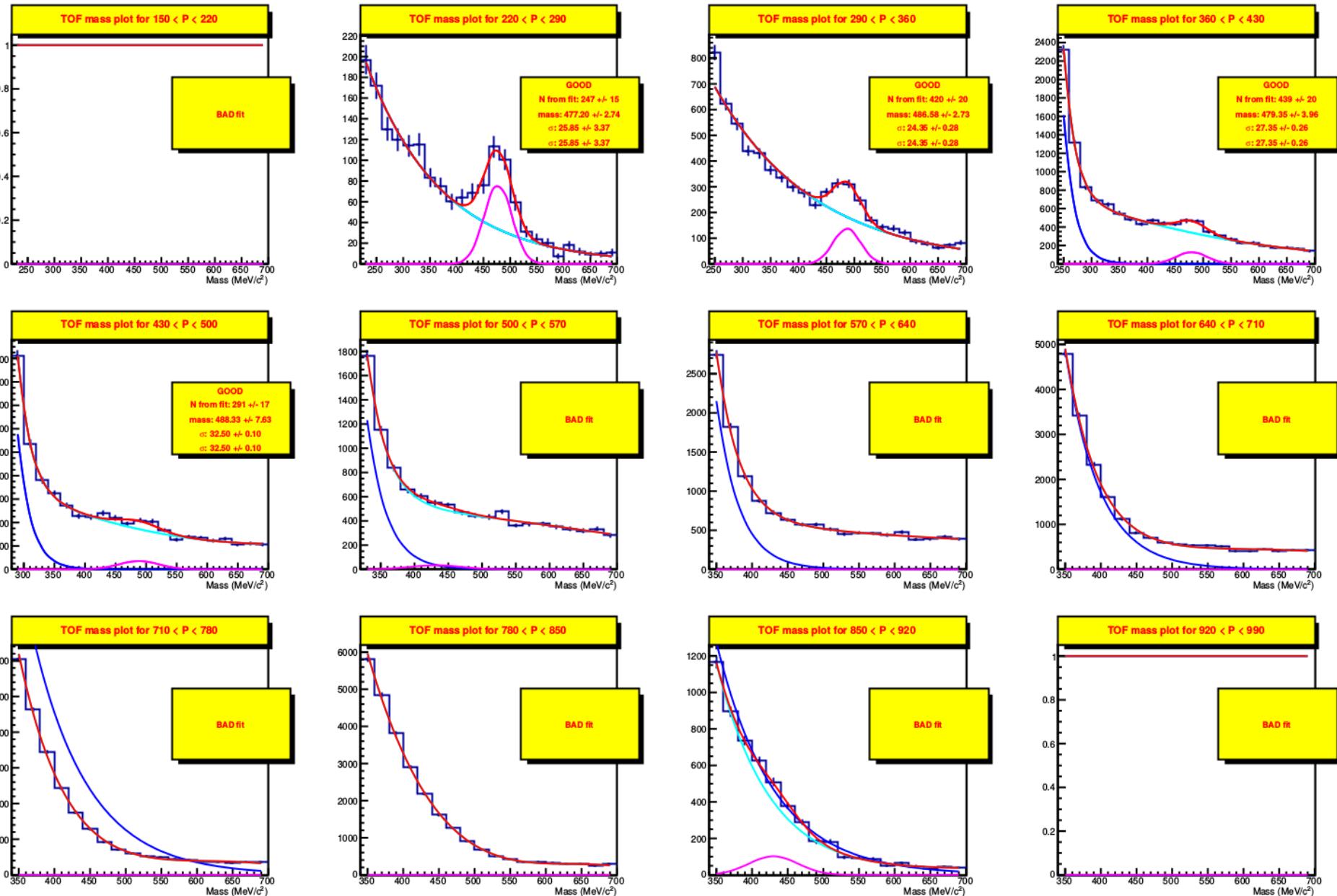
Fit results for p-slices spectra ($\pi W \rightarrow K^+$)



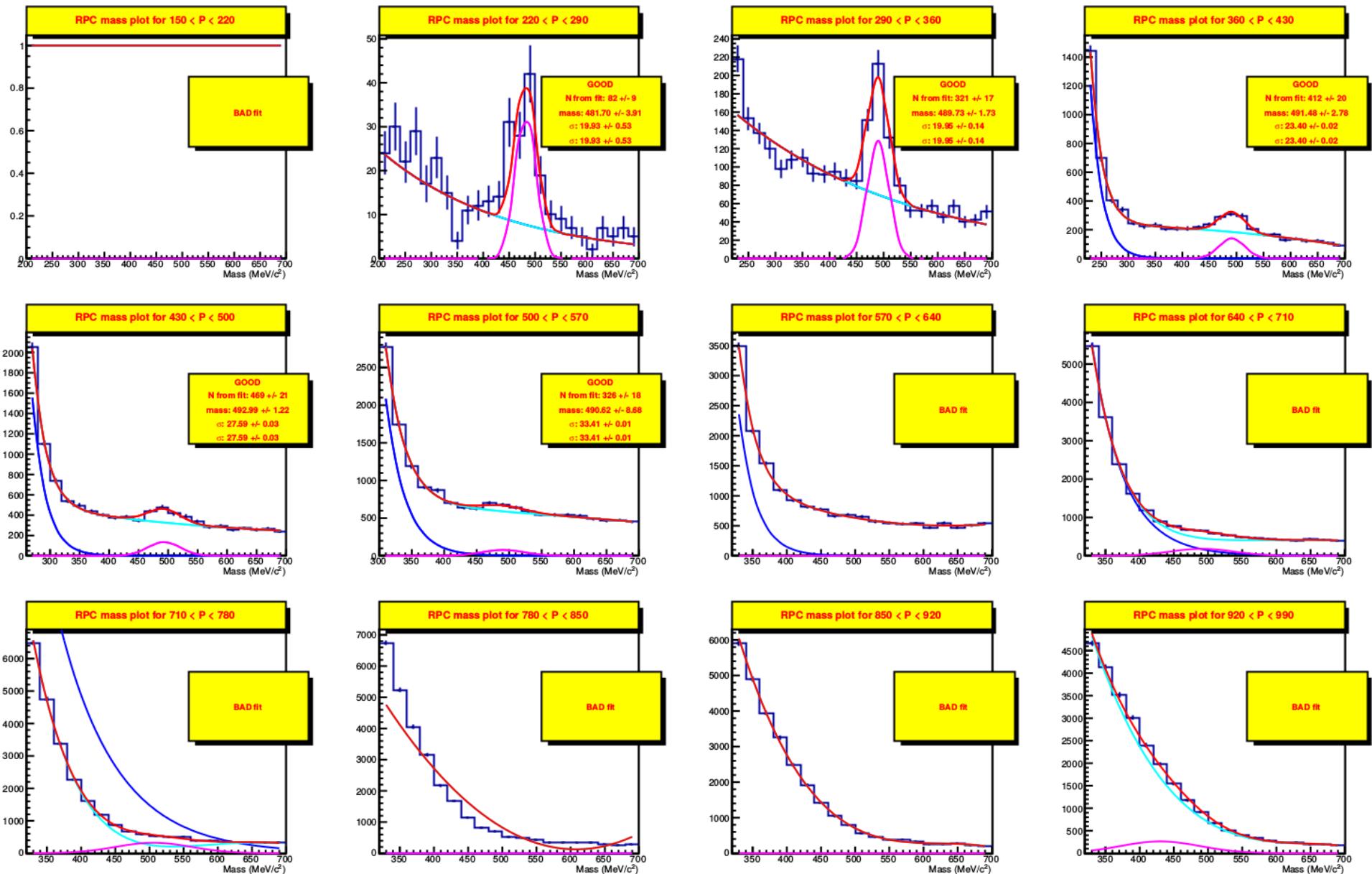
Fit results for p-slices spectra ($\pi C \rightarrow K^-$)



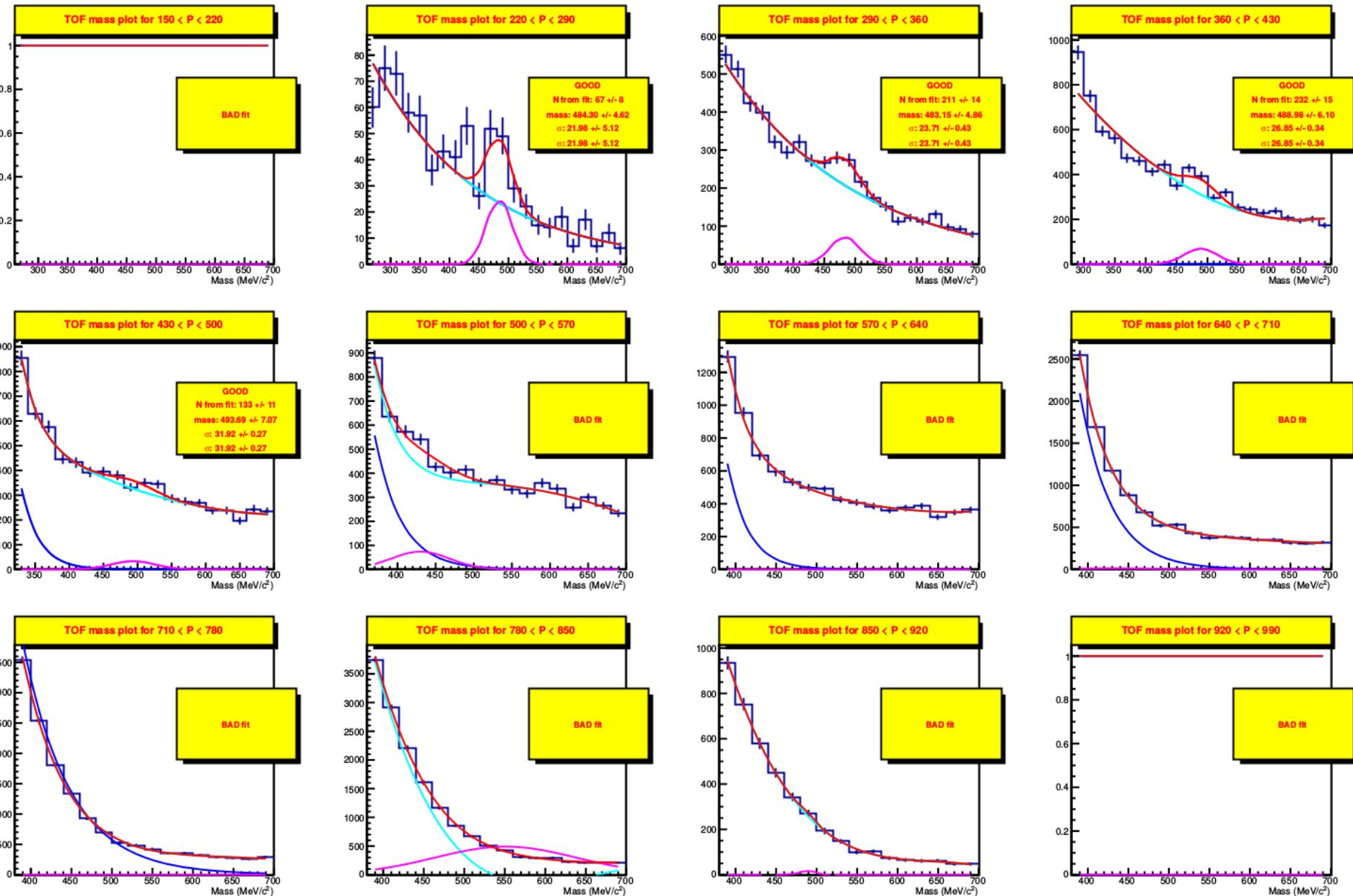
Fit results for p-slices spectra ($\pi C \rightarrow K^-$)



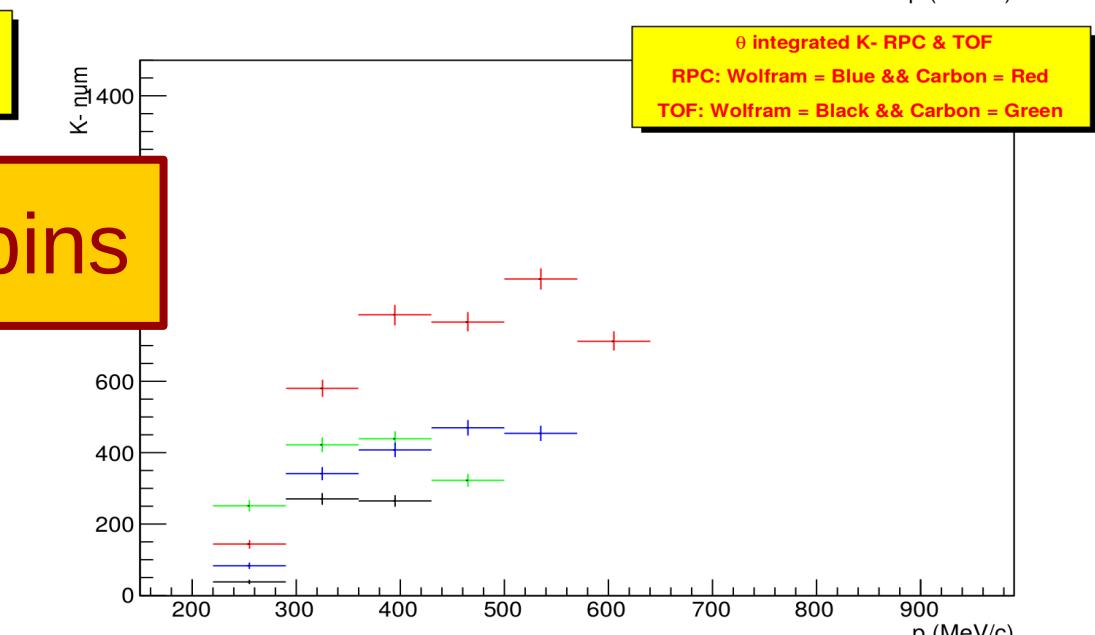
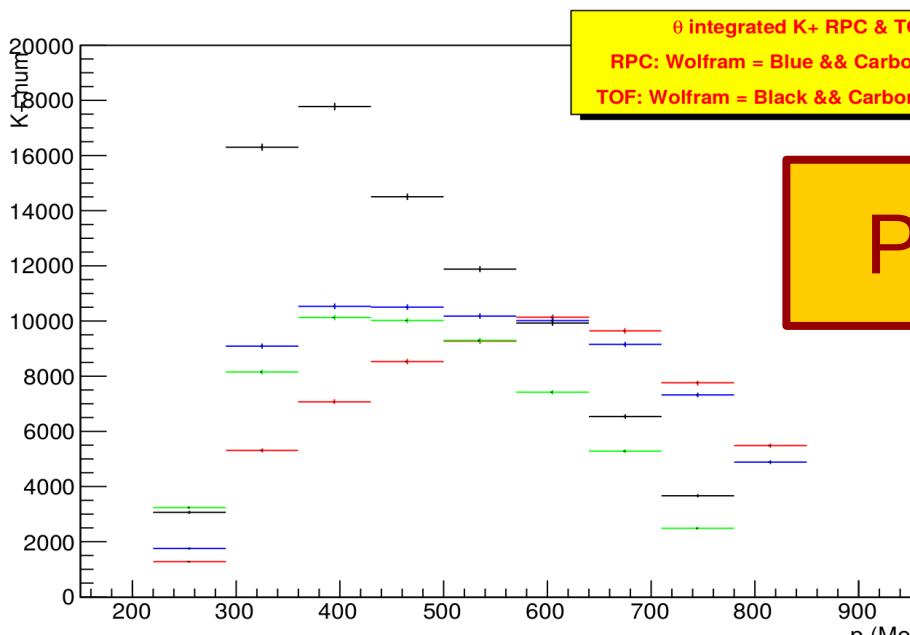
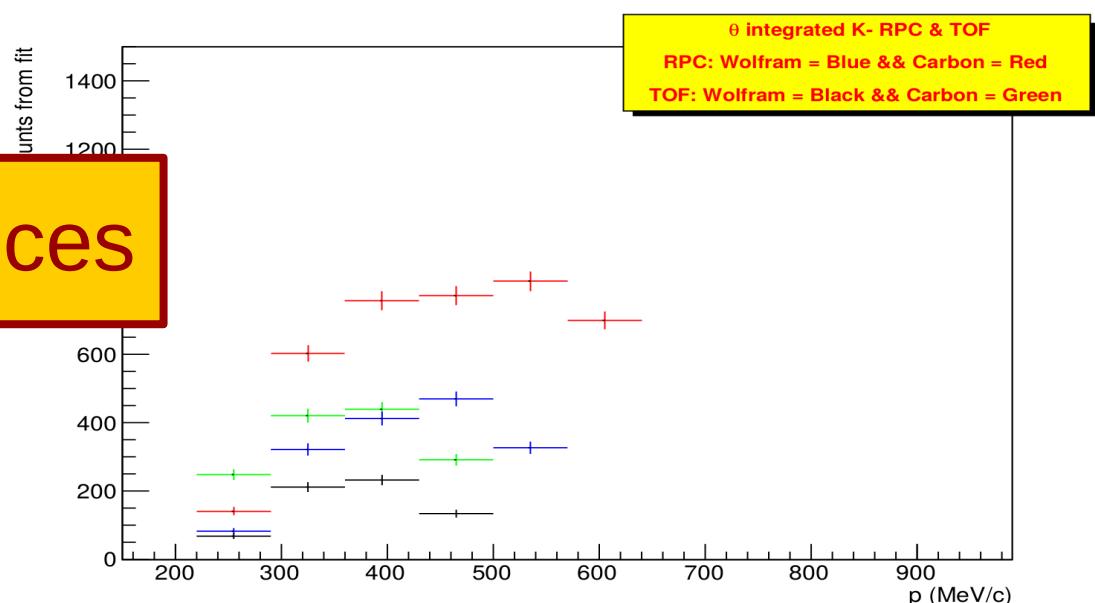
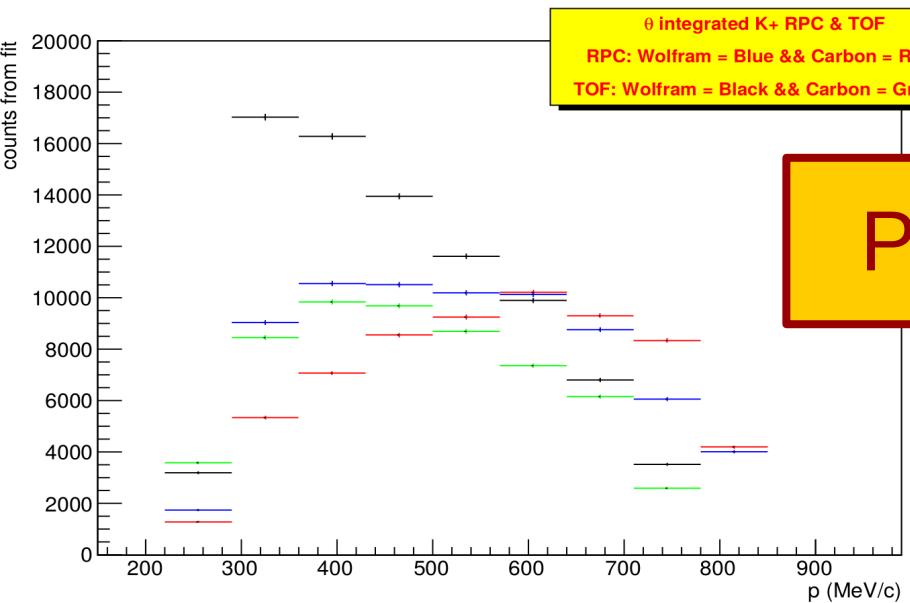
Fit results for p-slices spectra ($\pi W \rightarrow K^-$)



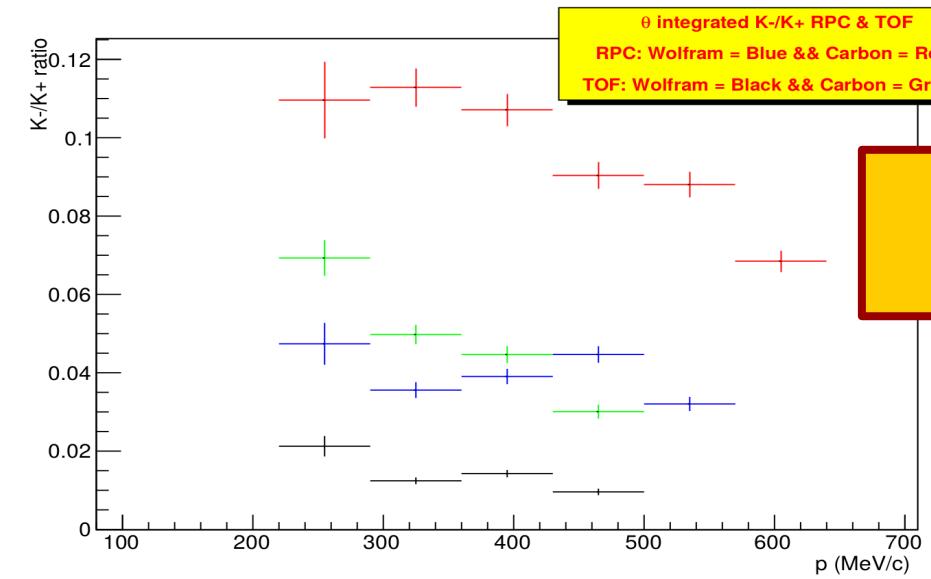
Fit results for p-slices spectra ($\pi W \rightarrow K^-$)



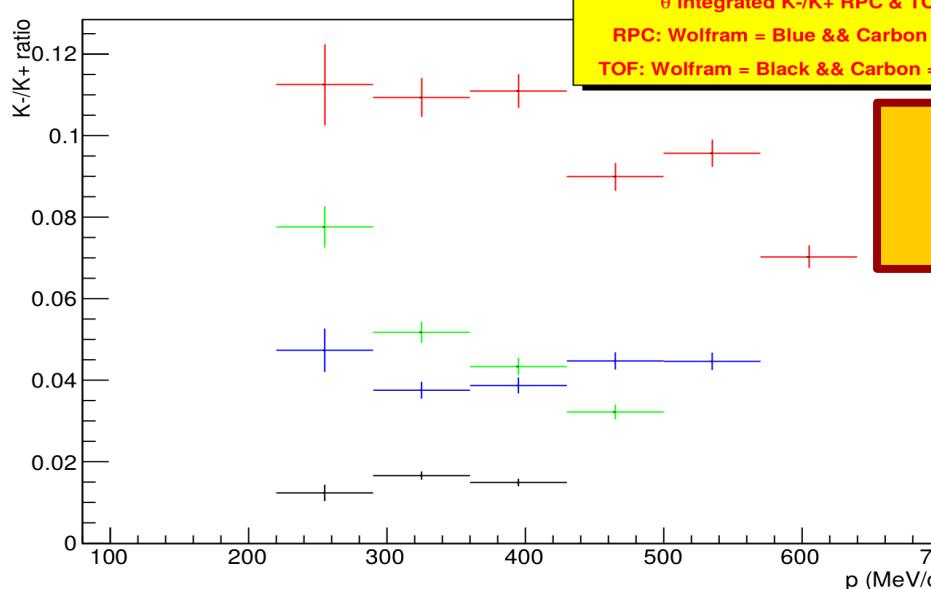
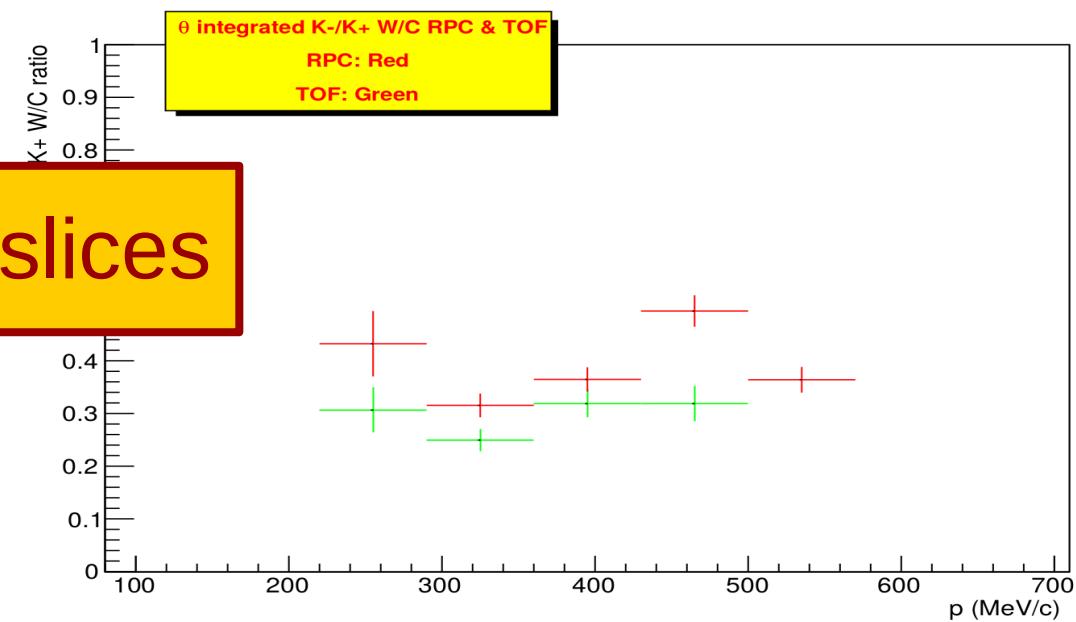
K-/K+ ratios (C,W,W/C) for p slices



K-/K+ ratios (C,W,W/C) for p slices



P slices



P θ bins

