

# Binning I

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KaonLT Experiment, Jefferson Lab Hall C





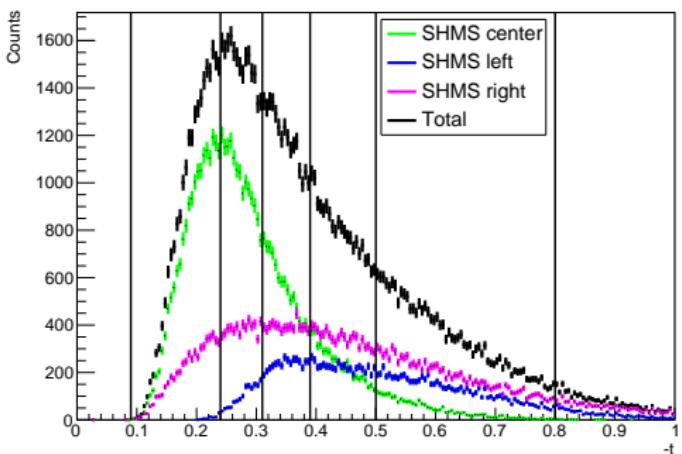
- Significantly less events at higher  $Q^2$
- Focusing on higher  $Q^2$  first
- First attempt: have at least 20K events per bin

$Q^2$	W	Events ( $\times 10^3$ )
5.5	3.02	100
4.4	2.74	143
3	2.32	474
3	3.14	628
2.115	2.95	1321

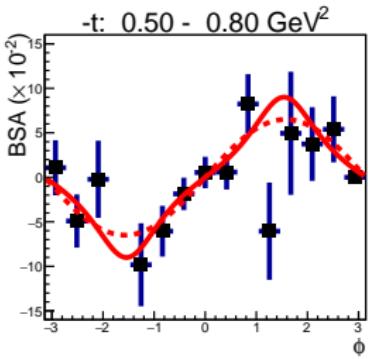
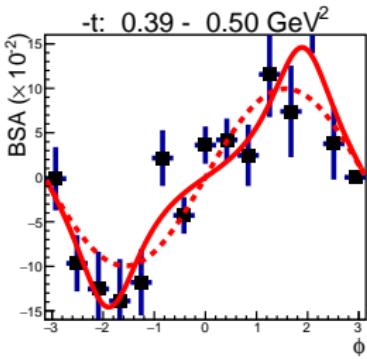
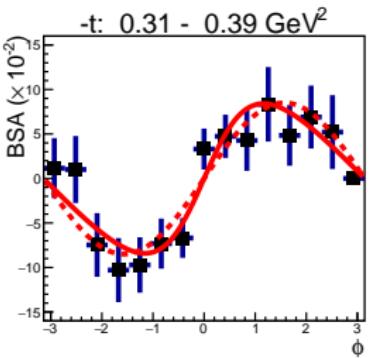
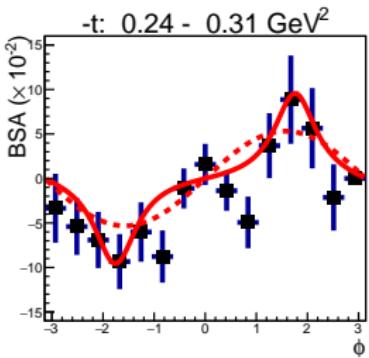
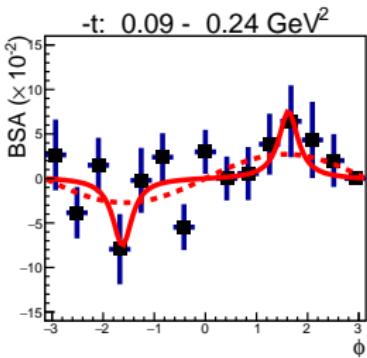


# Tentative binning $Q^2 = 5.5$

$-t$ low	$-t$ high	nEvents
.09	.24	21631
.24	.31	21216
.31	.39	19388
.39	.5	18006
.5	.8	21079



# Initial asymmetry

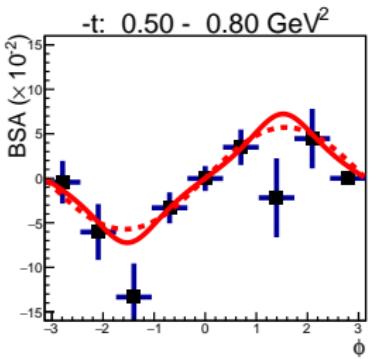
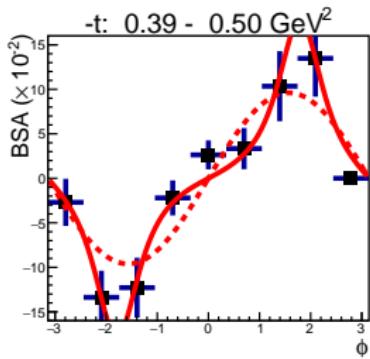
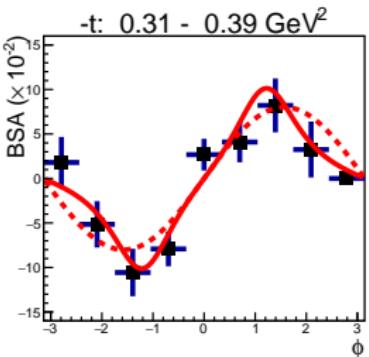
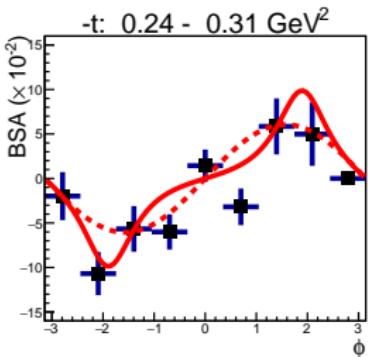
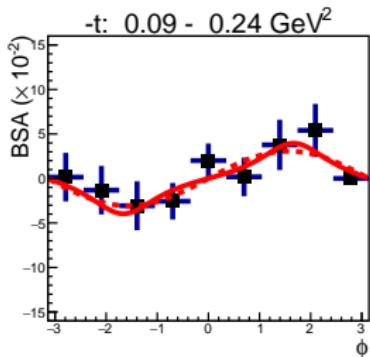


$$\frac{\text{Asin}\phi}{1+B\cos\phi+C\cos 2\phi}$$

$$A \propto \frac{\sigma_{LT}}{\sigma_0}$$



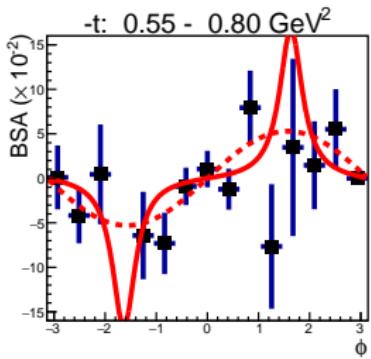
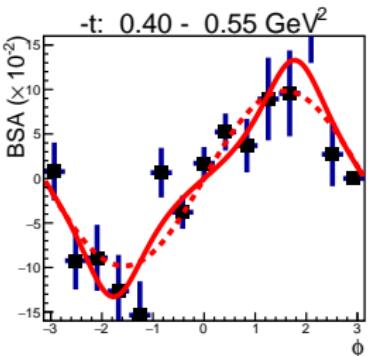
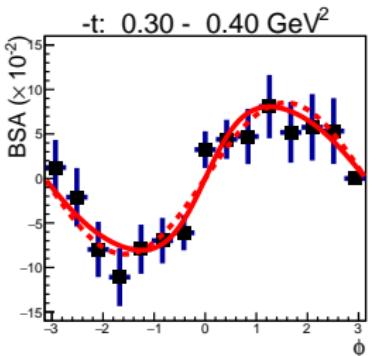
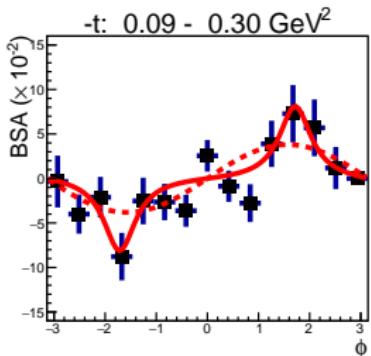
# Alternative: 9 bins in $\phi$



$\text{Asin}\phi$   
 $\text{Asin}\phi$   
 $\frac{1+B\cos\phi+C\cos 2\phi}{A \propto \frac{\sigma_{\text{LT}}}{\sigma_0}}$



# Alternative: 4 bins in $-t$



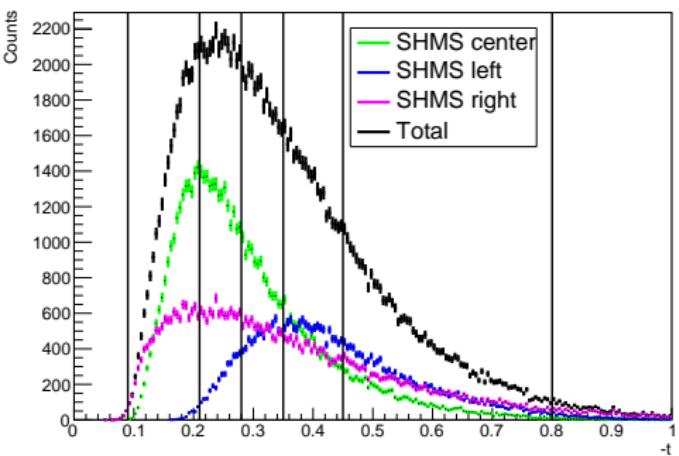
$$\frac{\text{Asin}\phi}{1+\text{Bcos}\phi+\text{Ccos}2\phi}$$

$$A \propto \frac{\sigma_{LT}}{\sigma_0}$$



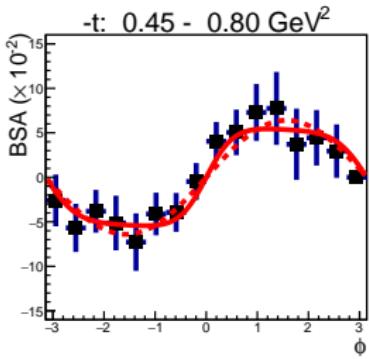
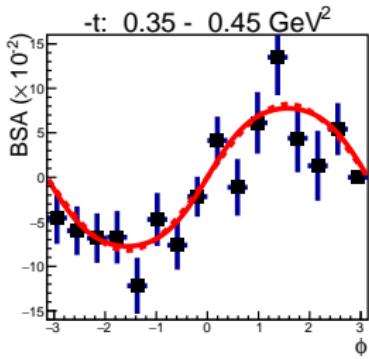
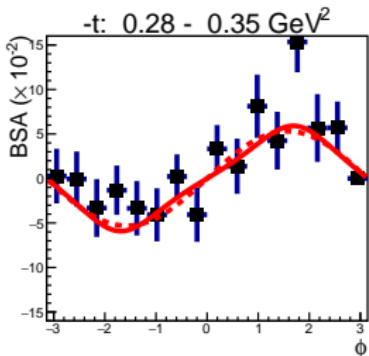
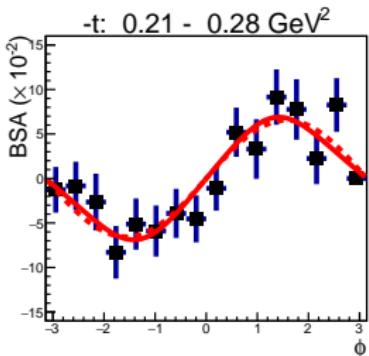
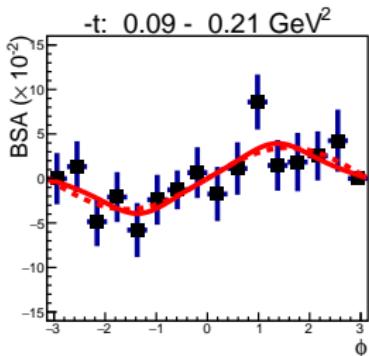
# Tentative binning $Q^2 = 4.4$

$-t$ low	$-t$ high	nEvents
.09	.21	27135
.21	.28	29369
.28	.35	25921
.35	.45	27393
.45	.8	31107





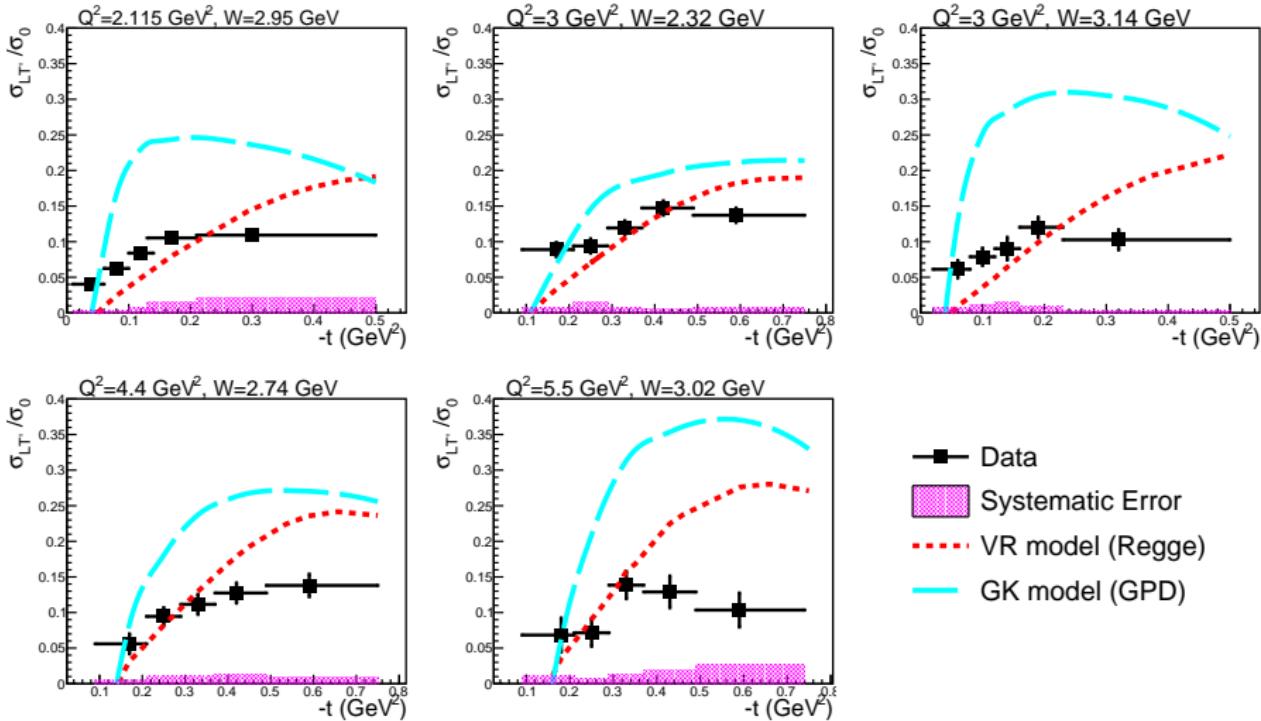
# Asymmetry



$$\frac{\text{Asin}\phi}{1+B\cos\phi+C\cos 2\phi}$$

$$A \propto \frac{\sigma_{LT}}{\sigma_0}$$

# Previous results: 5 bins in every setting





# Questions

- 15 or 9 bins in  $\phi$ ?
- How many bins in  $-t$  for these settings?
- Upper limit on reasonable number of  $-t$  bins (for the lower  $Q^2$ )?