

Asymmetry Analysis Updates

Alicia Postuma

14 March 2024

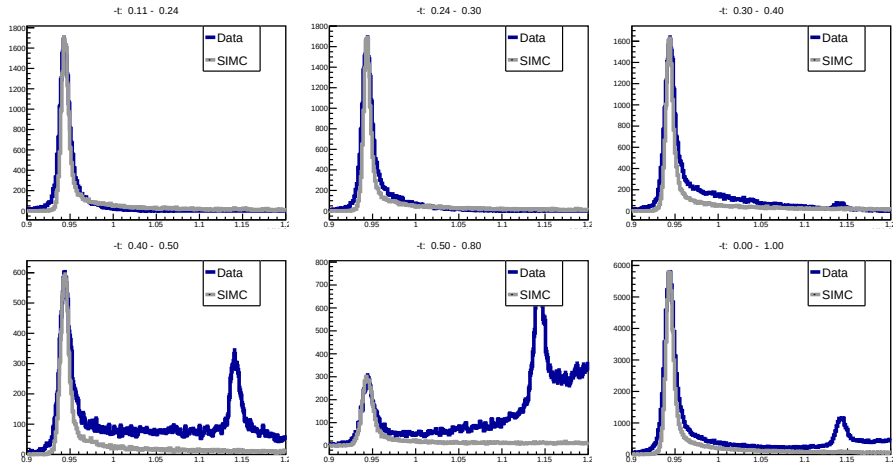
University of Regina

KaonLT Experiment, Jefferson Lab Hall C



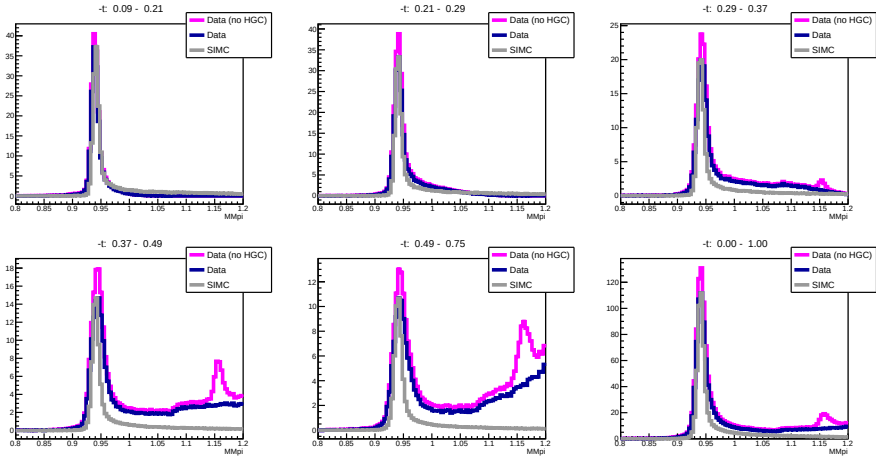
University
of Regina

Missing Mass Recap

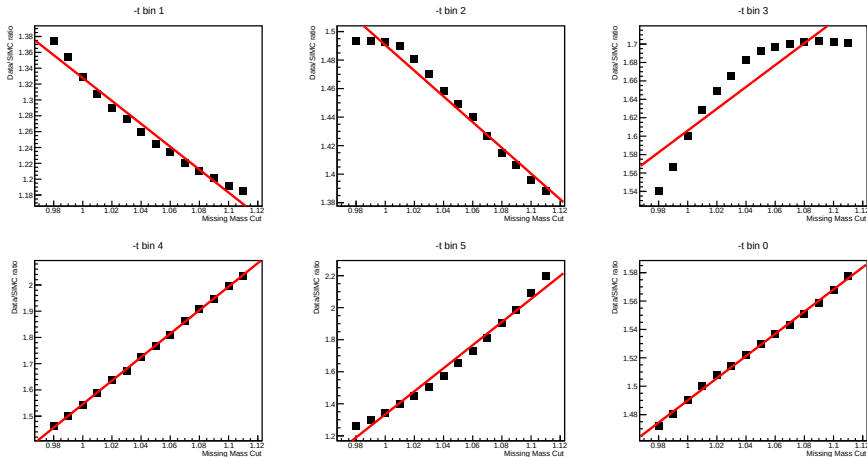


($Q^2=5.5$, $W=3.02$) Dave suggests calculating data/simc ratio over a range of potential cut values

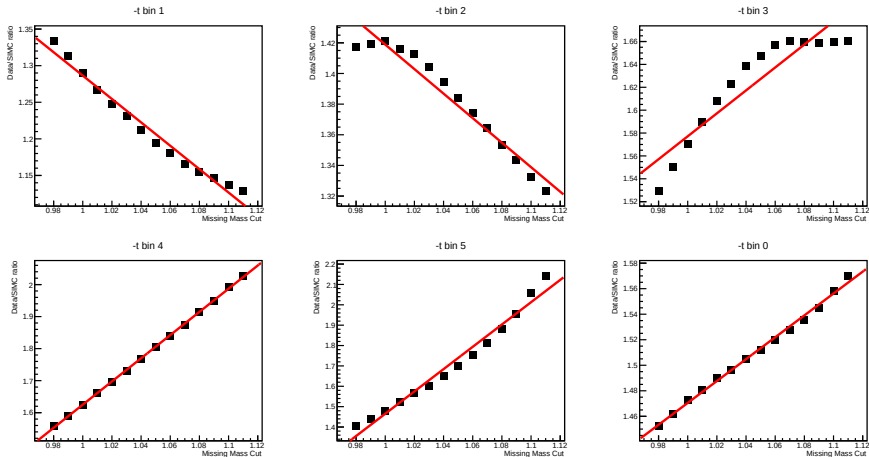
Aside: What About HGC?



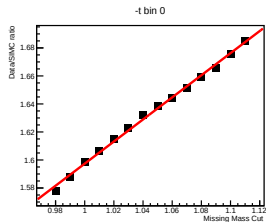
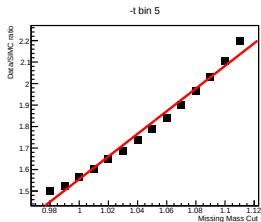
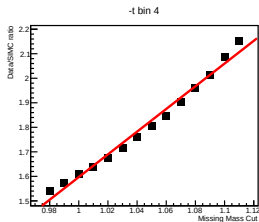
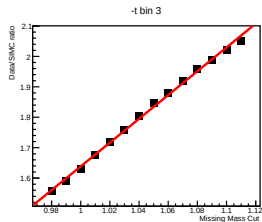
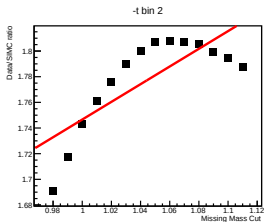
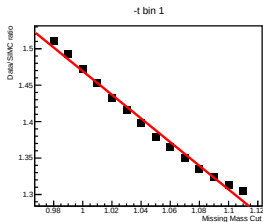
Older plot ($Q^2=3$, $W=2.32$): shows that HGC does not much affect the neutron tail region



($Q^2=5.5$, $W=3.02$) Ratios as a function of missing mass cut (MM_{pi}>X)
Looks very different in different bins $\rightarrow$ problem for L/T separation

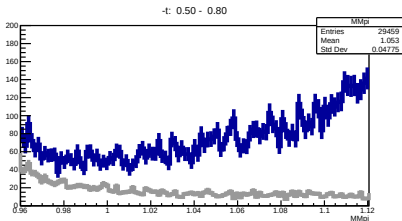
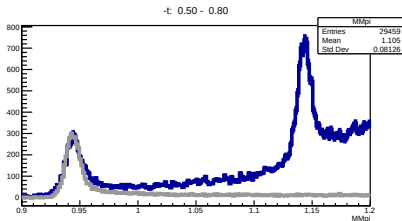
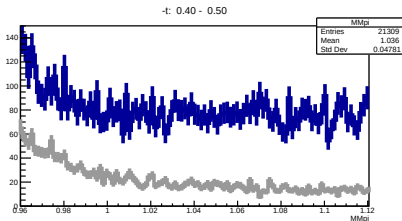
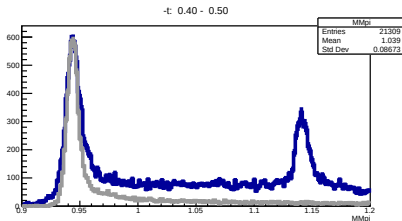


($Q^2=4.4$, $W=2.74$) Ratios as a function of missing mass cut (MM_{pi>X})
Looks very different in different bins $\rightarrow$ problem for L/T separation



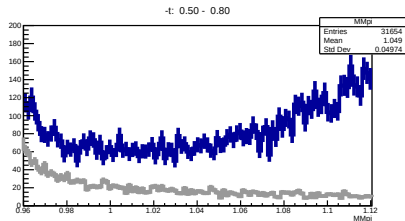
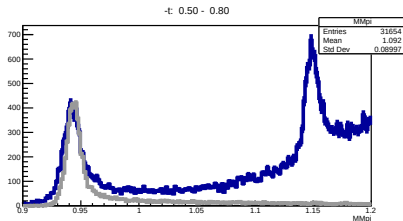
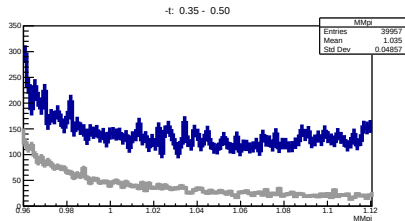
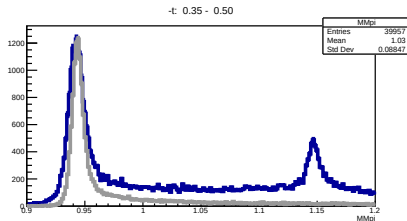
($Q^2=3$, $W=3.14$) Ratios as a function of missing mass cut (MM_{π^+X})
Looks very different in different bins $\rightarrow$ problem for L/T separation

Another Approach (1)



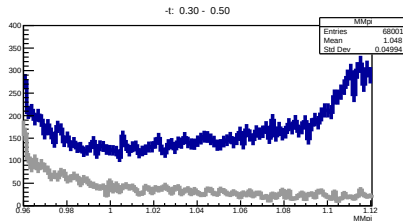
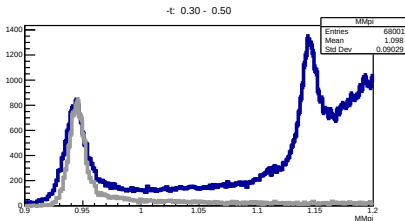
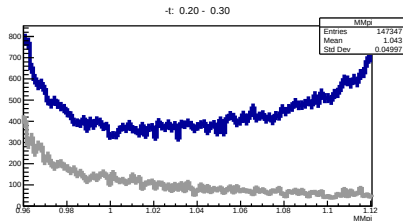
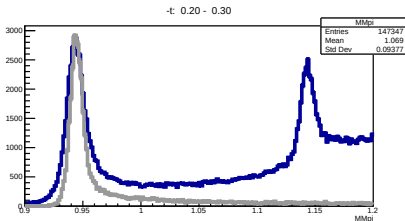
($Q^2=5.5$, $W=3.02$) Look at range in which data is flat
Suggestion: $MMpi > 1.01$: cut dependence ± 0.02 , i.e. 0.99 and 1.03

Another Approach (2)



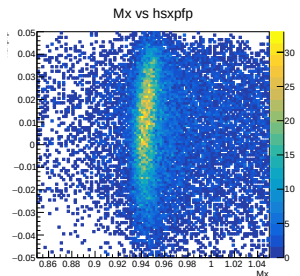
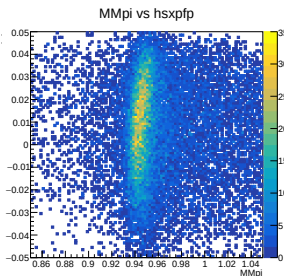
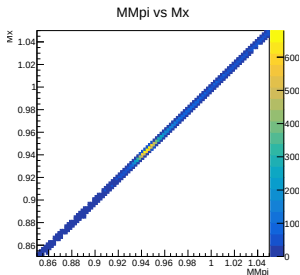
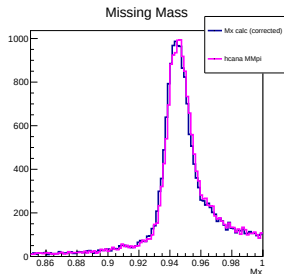
($Q^2=4.4$, $W=2.74$) Look at range in which data is flat
Suggestion: $MMpi > 1.01$: cut dependence ± 0.02 , i.e. 0.99 and 1.03

Another Approach (3)



($Q^2=3$, $W=3.14$) Look at range in which data is flat
Suggestion: $MMpi > 1.01$: cut dependence ± 0.02 , i.e. 0.99 and 1.03

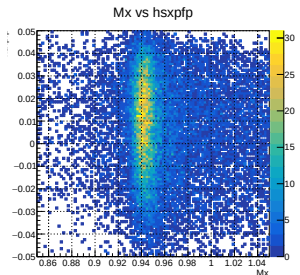
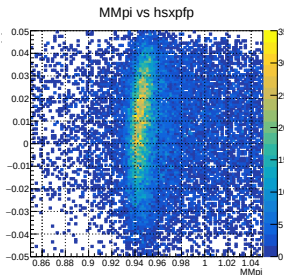
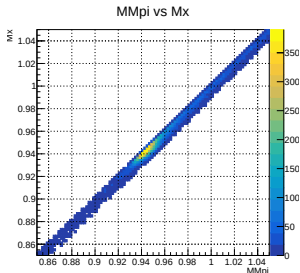
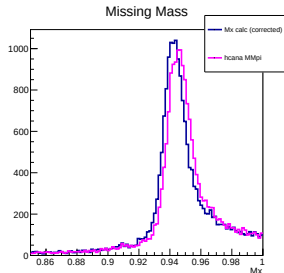
Delta Correction (1)



Uncorrected:
 $P_{HMS}=6.590$
($Q^2=3$, $W=2.32$)
Run 4873

Tilted where
 $hsxpf > 0$

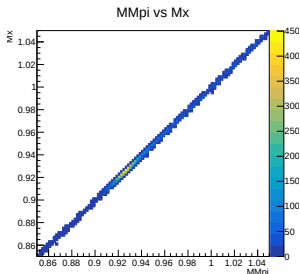
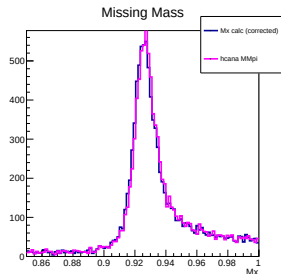
Delta Correction (2)



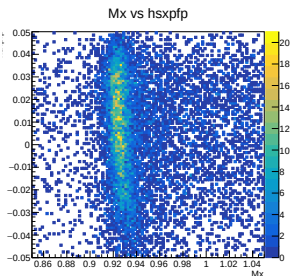
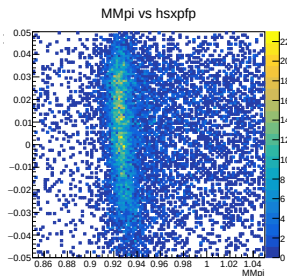
Uncorrected:
 $P_{HMS}=6.590$
($Q^2=3$, $W=2.32$)
Run 4873

if ($hsxpf > 0$):
 $hsdelta += 3.0 * hsxpf$

Delta Correction (3)

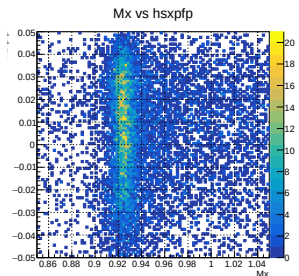
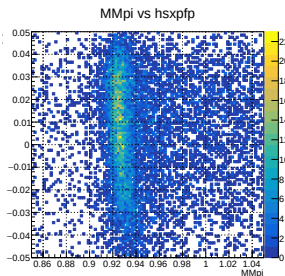
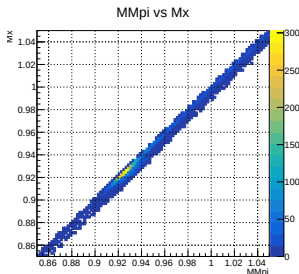
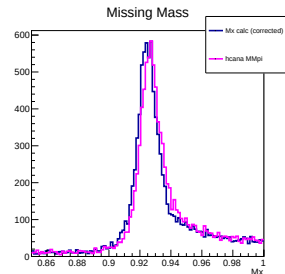


Corrected:
 $P_{HMS}=5.2920$
($Q^2=2.1$, $W=2.95$)
Run=4914



Tilted where
 $hsxpf < 0$

Delta Correction (4)



Corrected:
 $P_{HMS}=5.2920$
($Q^2=2.1$, $W=2.95$)
Run=4914

if ($hsxpf < 0$):
 $hsdelta = -5.0 * hsxpf$

Email response from BGYu: LT' predictions!

