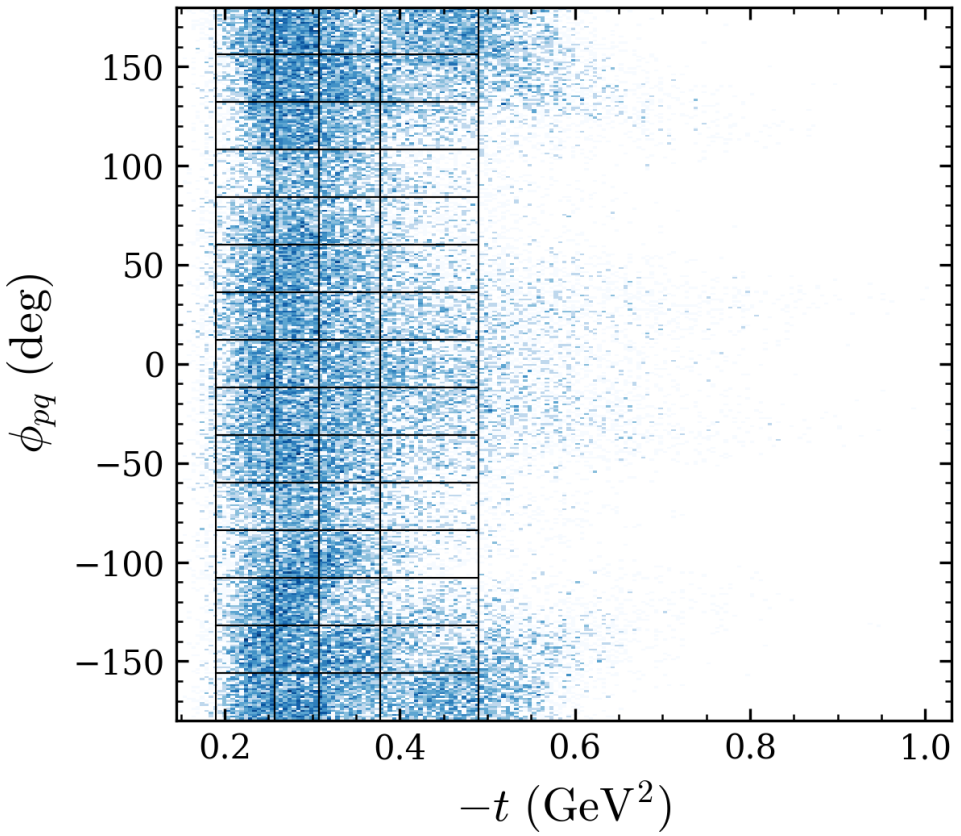
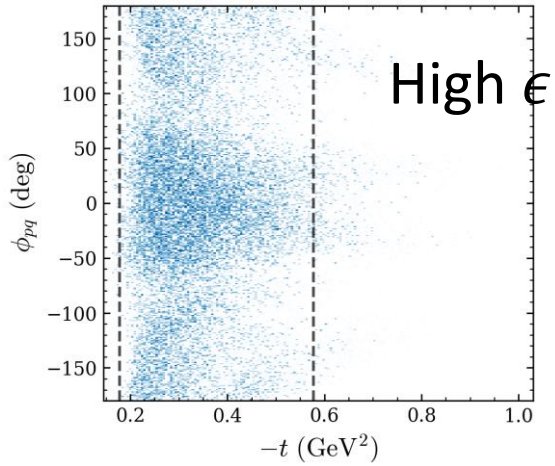
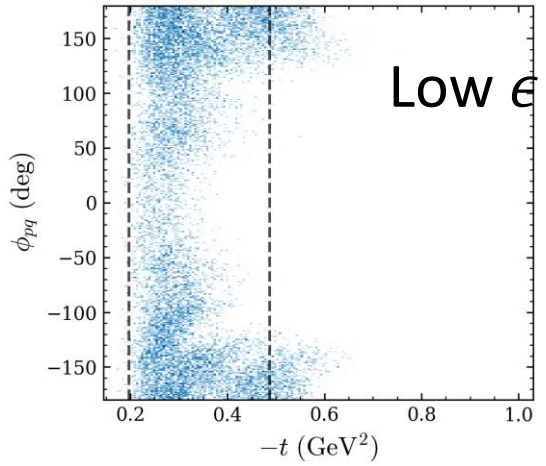
Binning : Q^2=3.0, W=3.14 setting





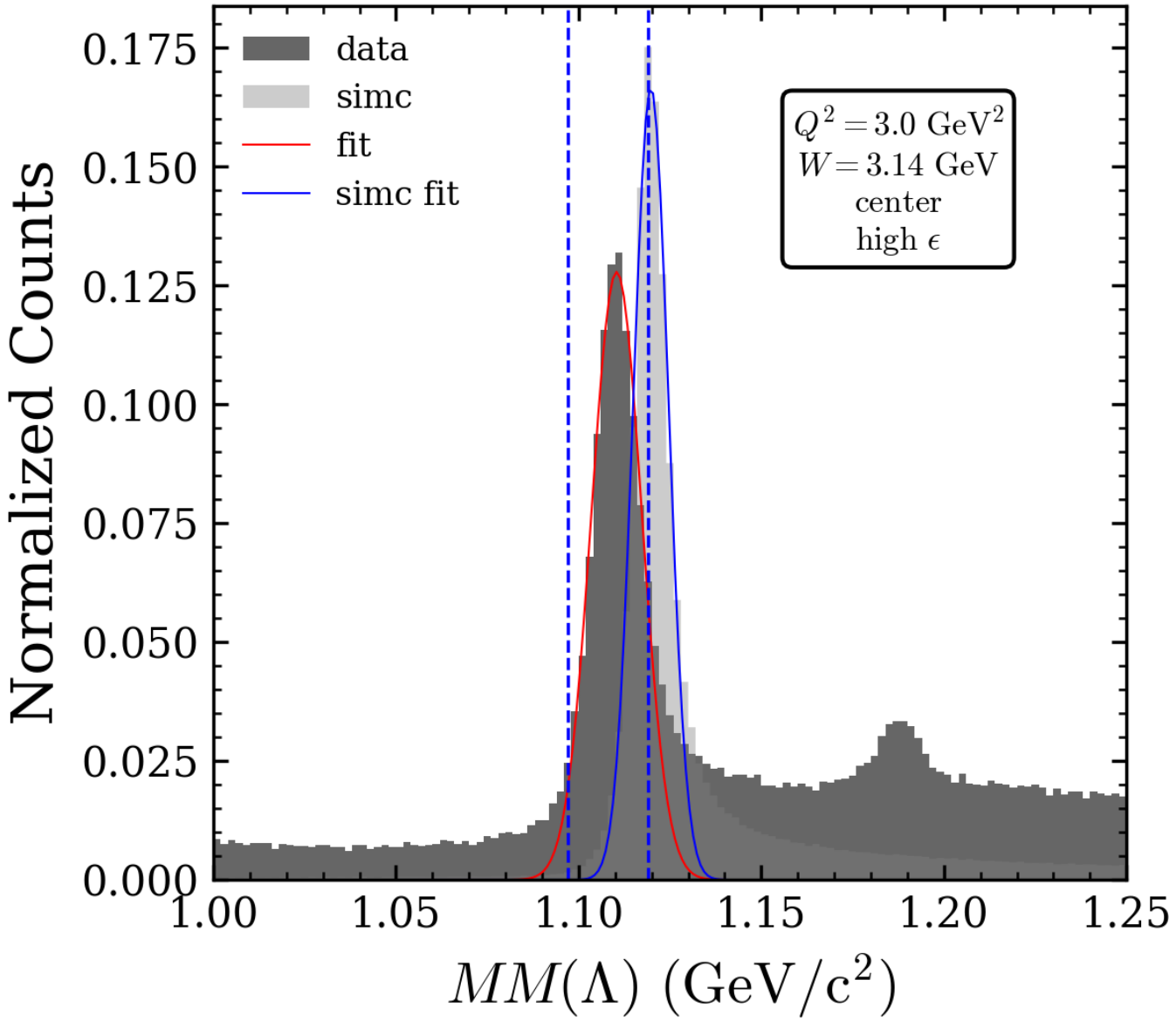


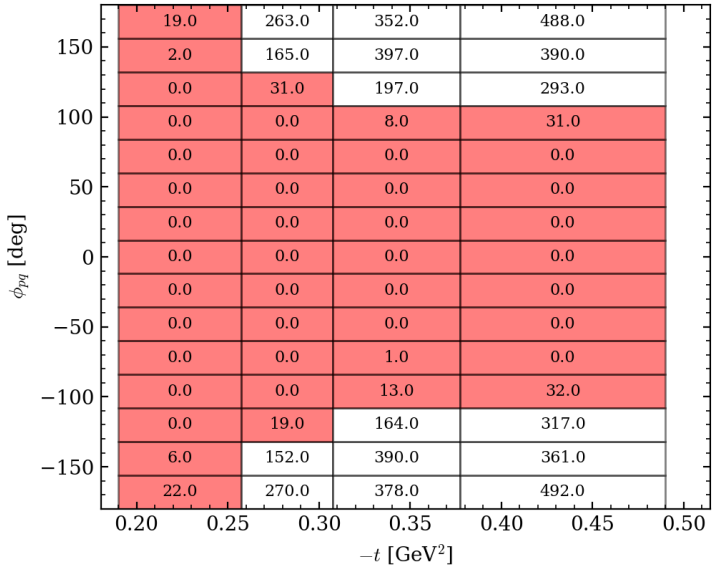
- At least 30% coverage in ϕ
- $|-t| \in [0.19, 0.26, 0.31, 0.38, 0.49]$

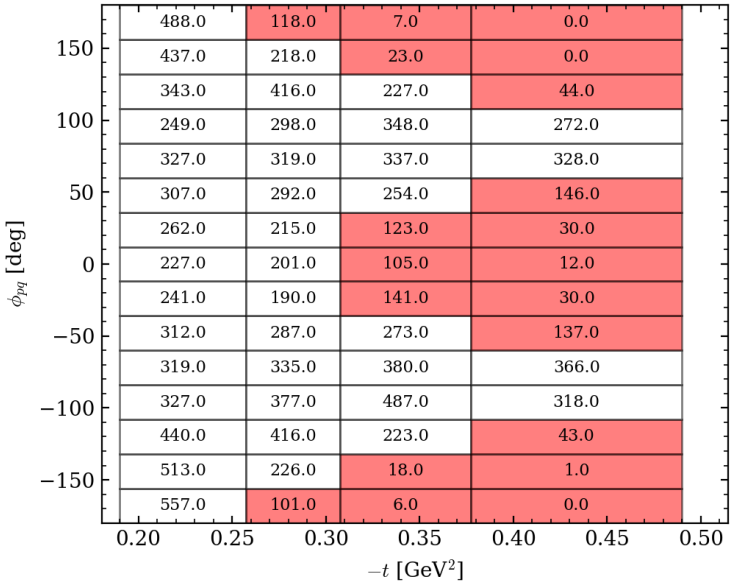
	left	center	right
low	10,668	16,970	0
high	5,406	14,196	11,642

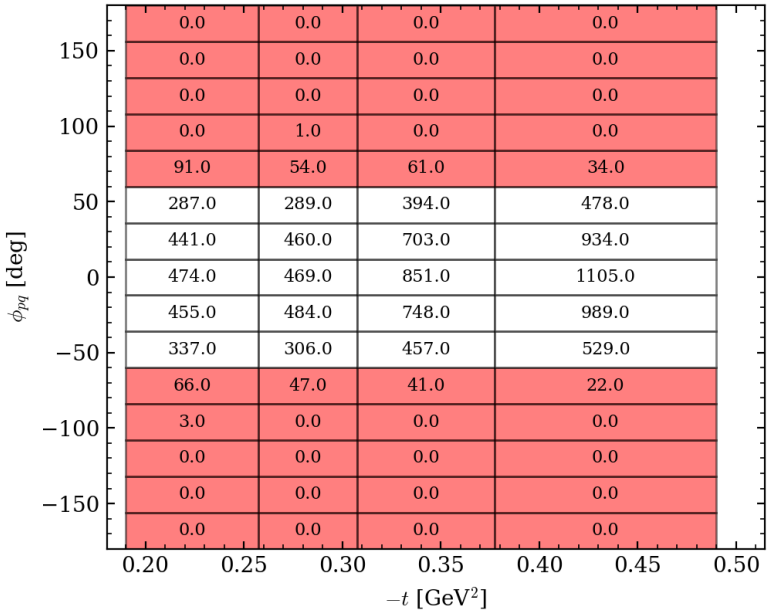
MM shift : Q^2=3.0, W=3.14 center low e setting, tbin = 0

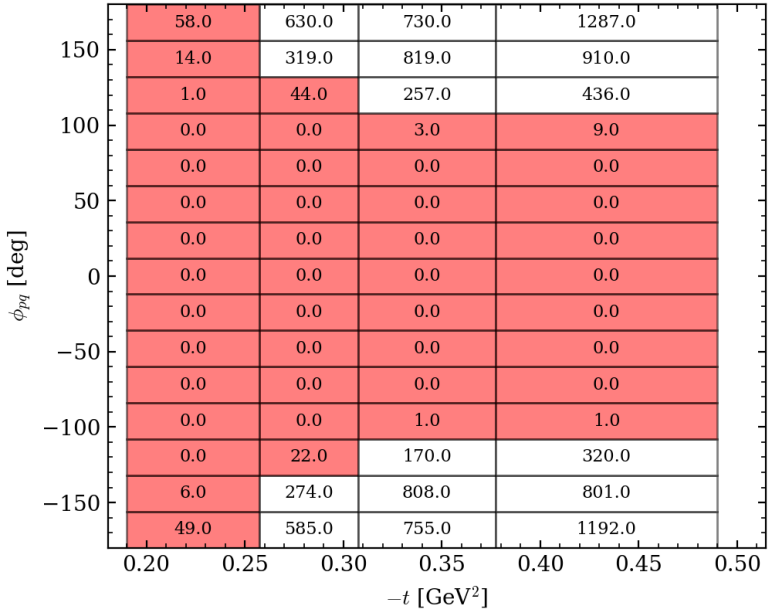
- shift data peak to SIMC peak

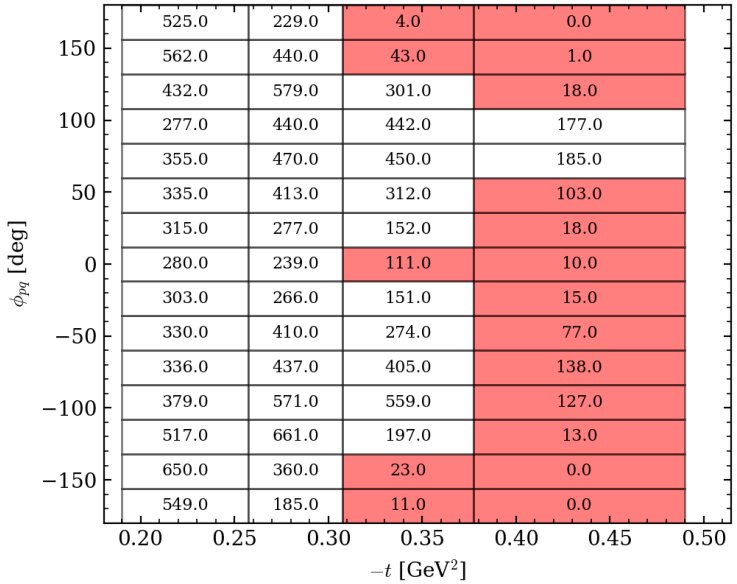












- Csv available
- Red = counts < 150 (just an example)

MM shift : Q^2=3.0, W=3.14 center low e setting, tbin = 0

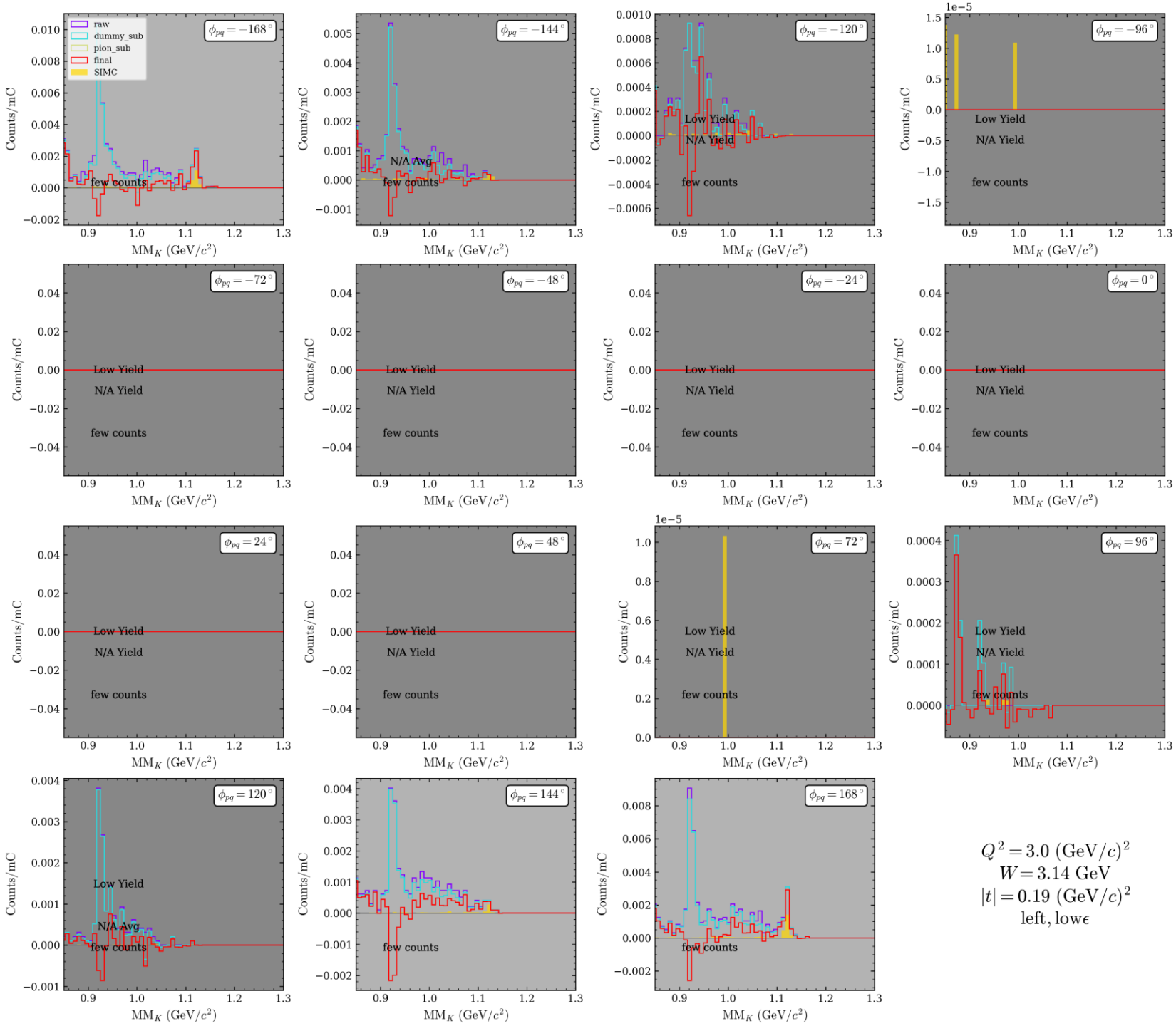
Criteria for a good bin

- Counts > 100
- Yield and err > 0
- high Yield with MM cut

$$\frac{Yield\ (MM \in (1.10,1.14))}{Yield(MM \in (1.0,1.3))} > 5\%$$

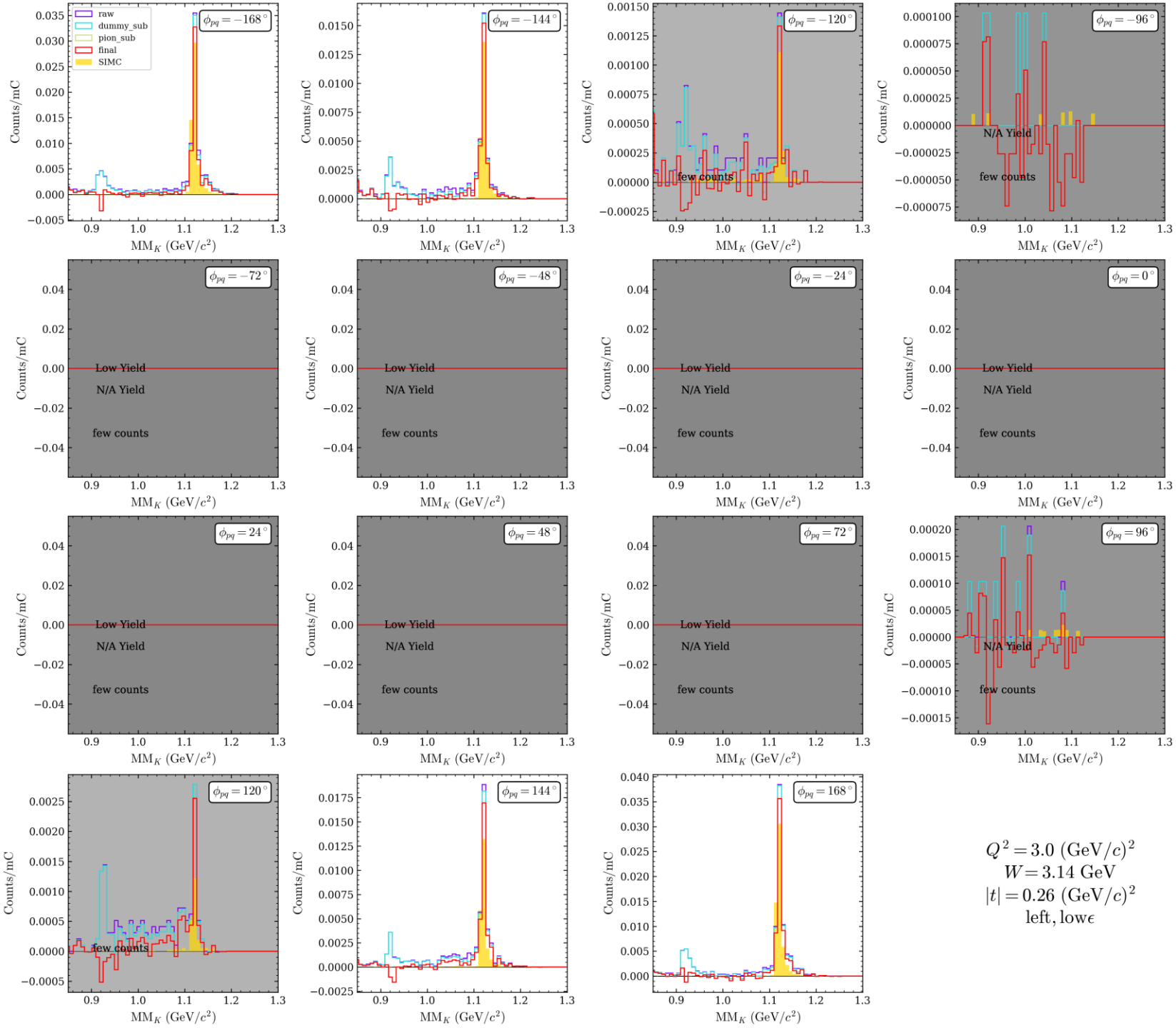
- Valid avg (from histogram with MM cut)

left low ϵ, tbin = 0



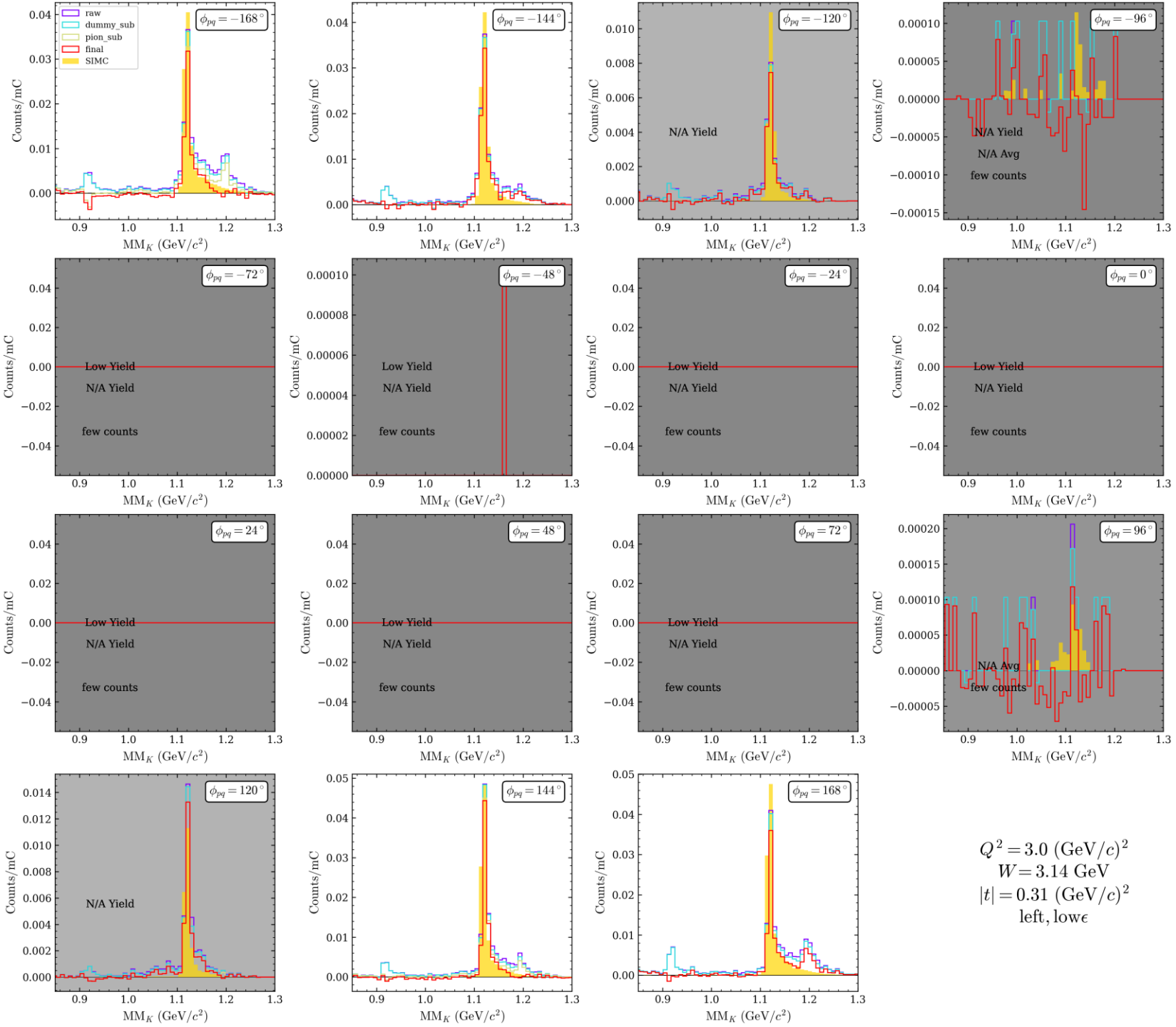
$Q^2 = 3.0\ (\mathrm{GeV}/c)^2$
$W = 3.14\ \mathrm{GeV}$
$|t| = 0.19\ (\mathrm{GeV}/c)^2$
left, lowϵ

left low ϵ, tbin = 1



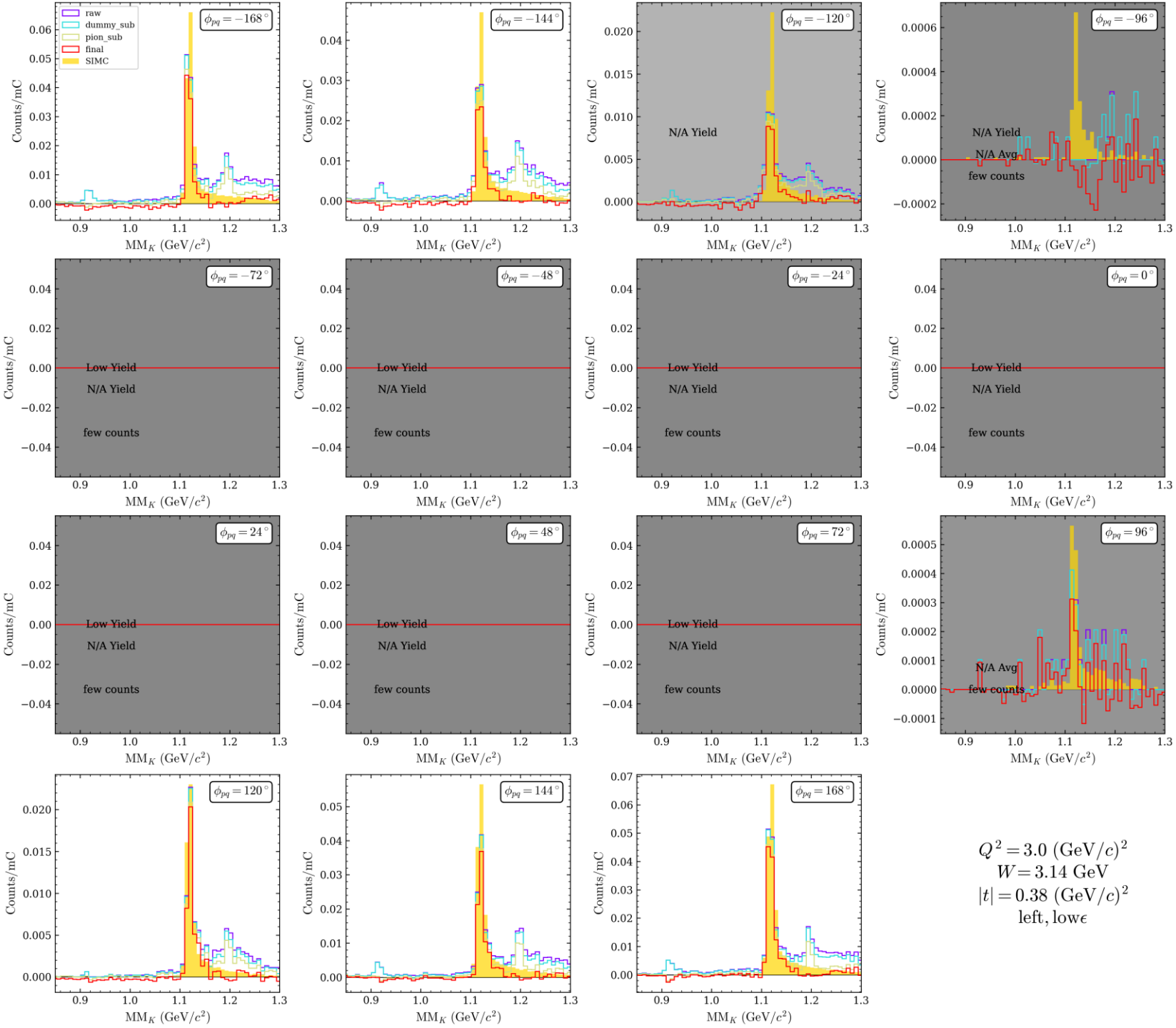
$Q^2 = 3.0$ (GeV/c)^2
$W = 3.14$ GeV
$|t| = 0.26$ (GeV/c)^2
left, lowϵ

left low ϵ, tbin = 2



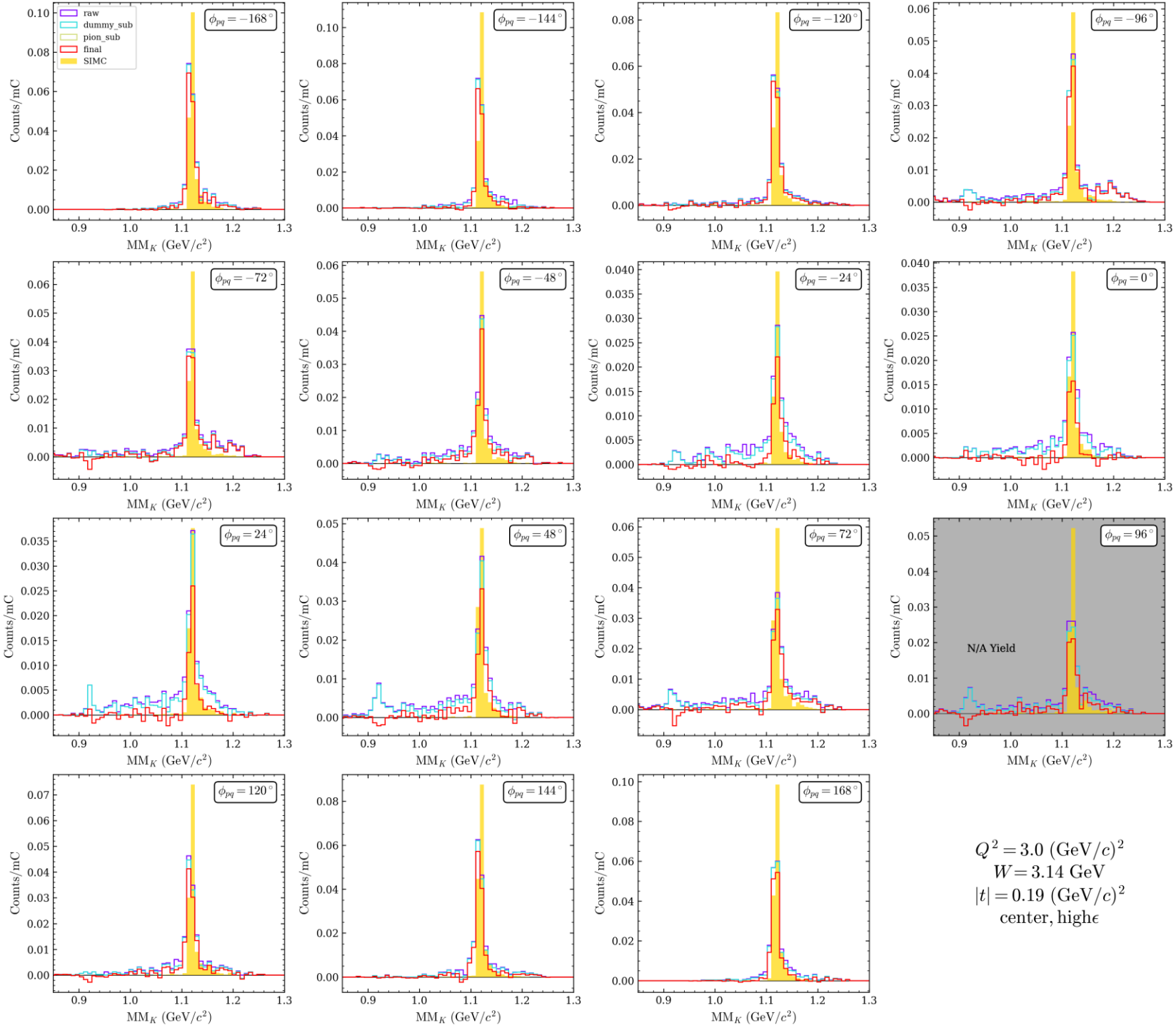
$Q^2 = 3.0$ (GeV/c)^2
$W = 3.14$ GeV
$|t| = 0.31$ (GeV/c)^2
left, lowϵ

left low ϵ, tbin = 3



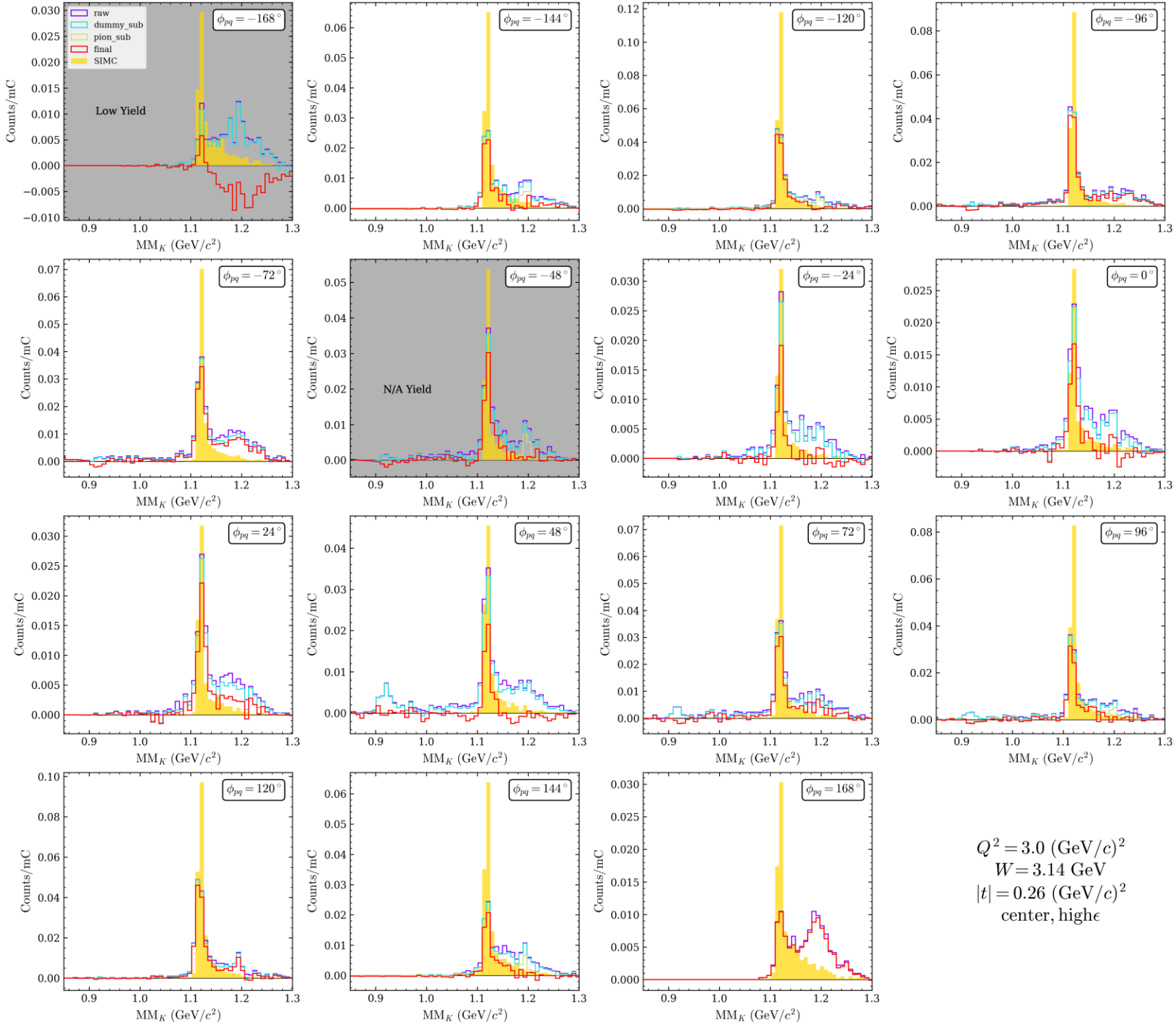
$Q^2 = 3.0$ (GeV/c)^2
$W = 3.14$ GeV
$|t| = 0.38$ (GeV/c)^2
left, lowϵ

center high ϵ, tbin = 0



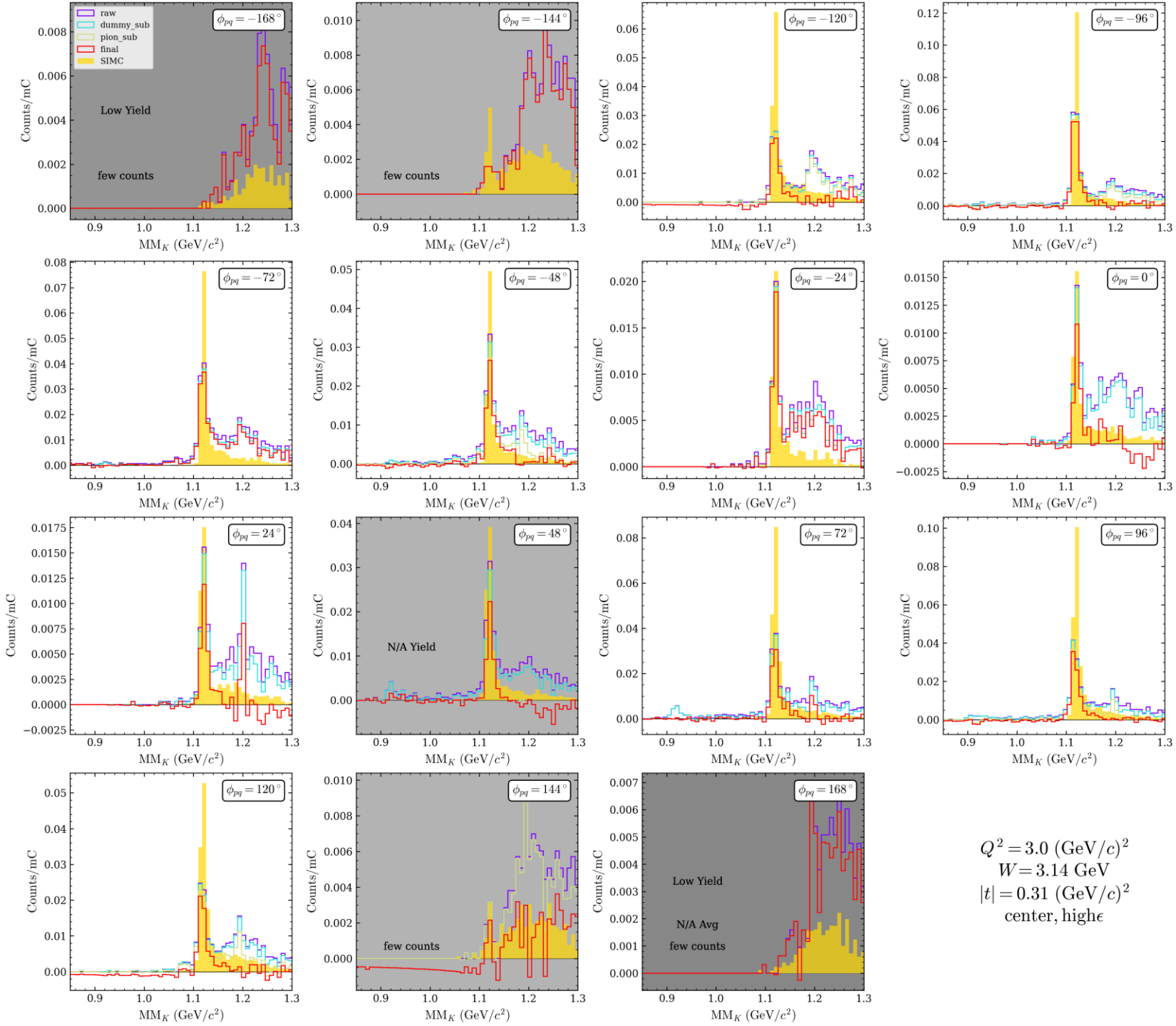
$Q^2 = 3.0$ (GeV/c)^2
$W = 3.14$ GeV
$|t| = 0.19$ (GeV/c)^2
center, highϵ

center high ϵ, tbin = 1



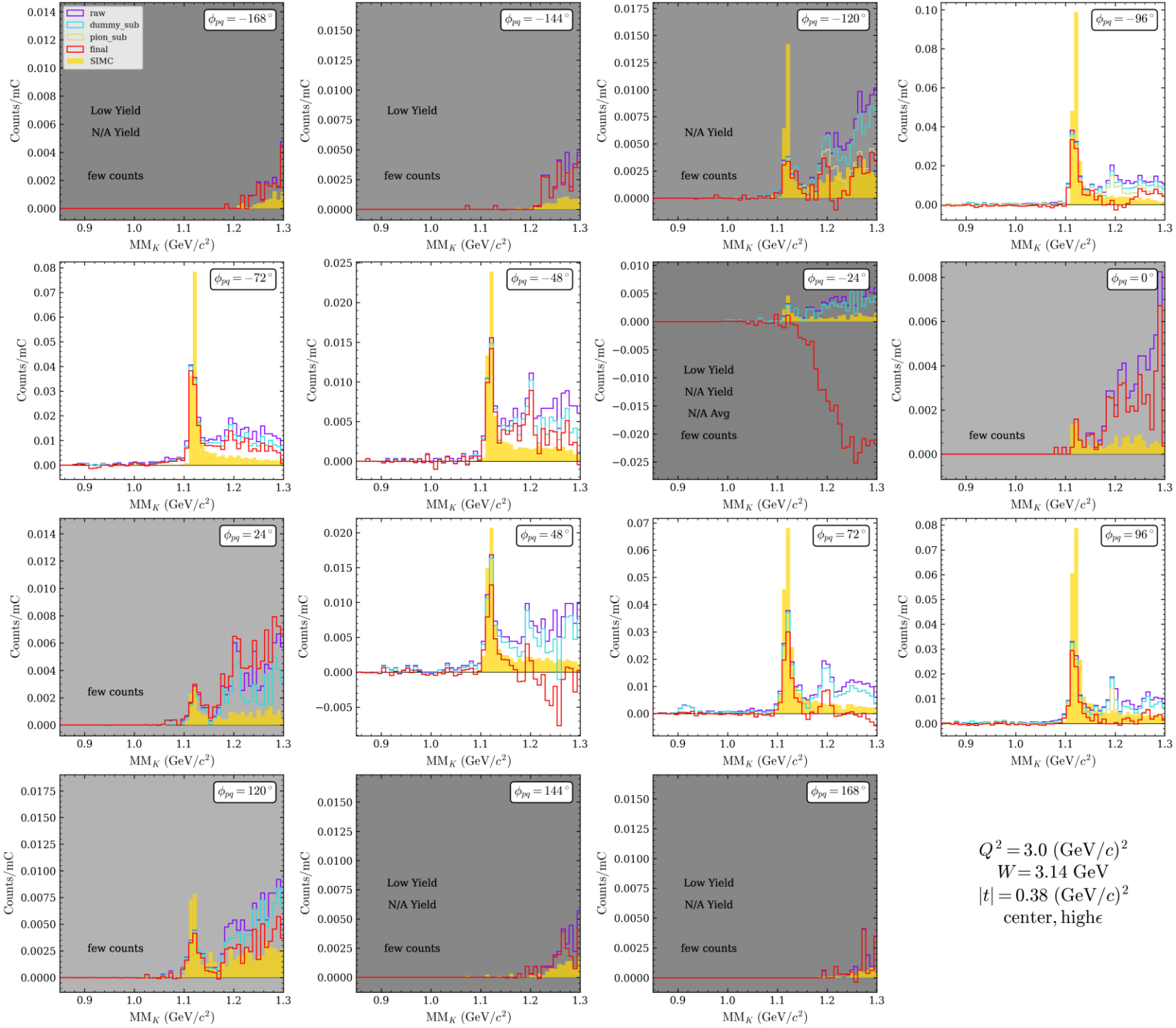
$Q^2 = 3.0$ (GeV/c)^2
$W = 3.14$ GeV
$|t| = 0.26$ (GeV/c)^2
center, highε

center high ϵ, tbin = 2



$Q^2 = 3.0$ (GeV/c)^2
$W = 3.14$ GeV
$|t| = 0.31$ (GeV/c)^2
center, highϵ

center high ϵ, tbin = 3



$Q^2 = 3.0$ (GeV/c)^2
$W = 3.14$ GeV
$|t| = 0.38$ (GeV/c)^2
center, highϵ

$$\sigma_L = \frac{p_0|t|}{(|t| + m_K^2)^2} \exp(-p_1|t|)$$

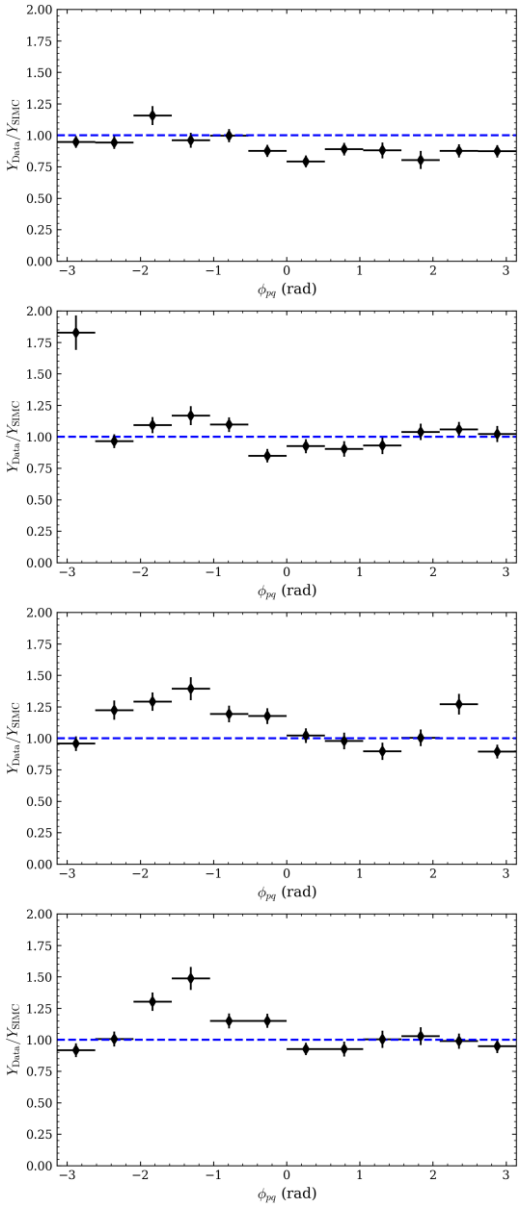
$$\sigma_T = p_4 \exp(-|p_5 t|)$$

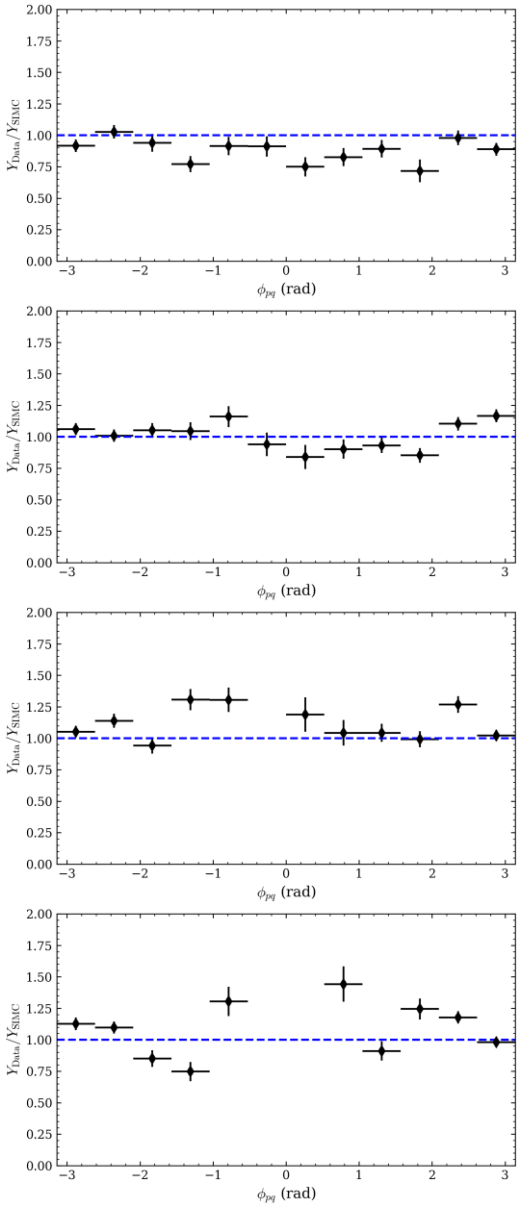
$$\sigma_{LT} = p_8 \exp(-p_9|t|) \sin^2\theta$$

$$\sigma_{TT} = p_{12} \exp(-p_{13}|t|) \sin^2\theta$$

Yield ratio Q^2=3.0, W=3.14 setting

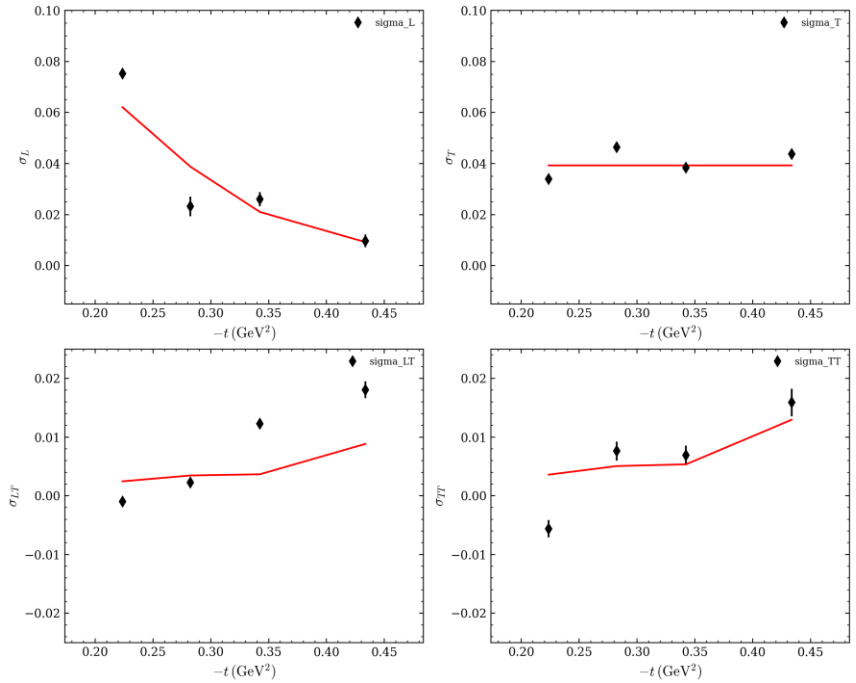
highe





lowe

latest xsect

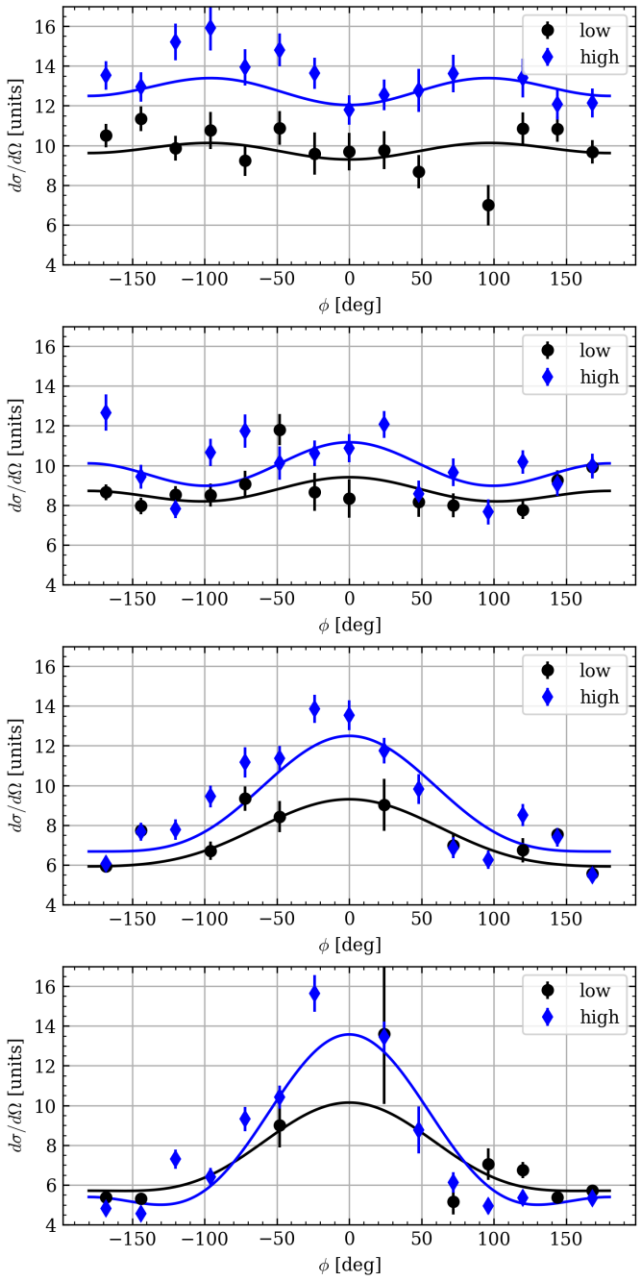


$$\sigma_L = \frac{p_0|t|}{(|t| + m_K^2)^2} \exp(-p_1|t|)$$

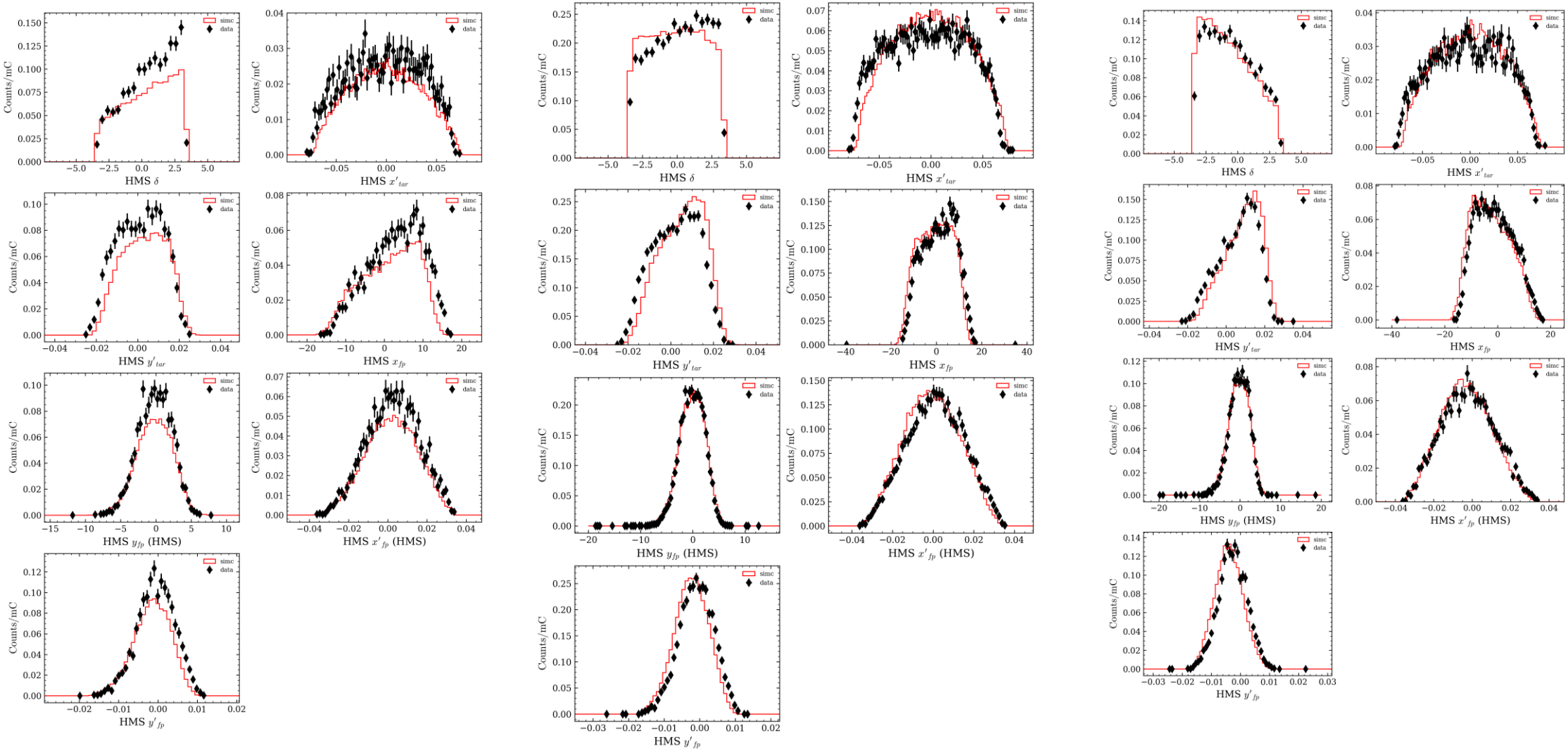
$$\sigma_T = p_4 \exp(-|p_5 t|)$$

$$\sigma_{LT} = p_8 \exp(-p_9|t|) \sin^2\theta$$

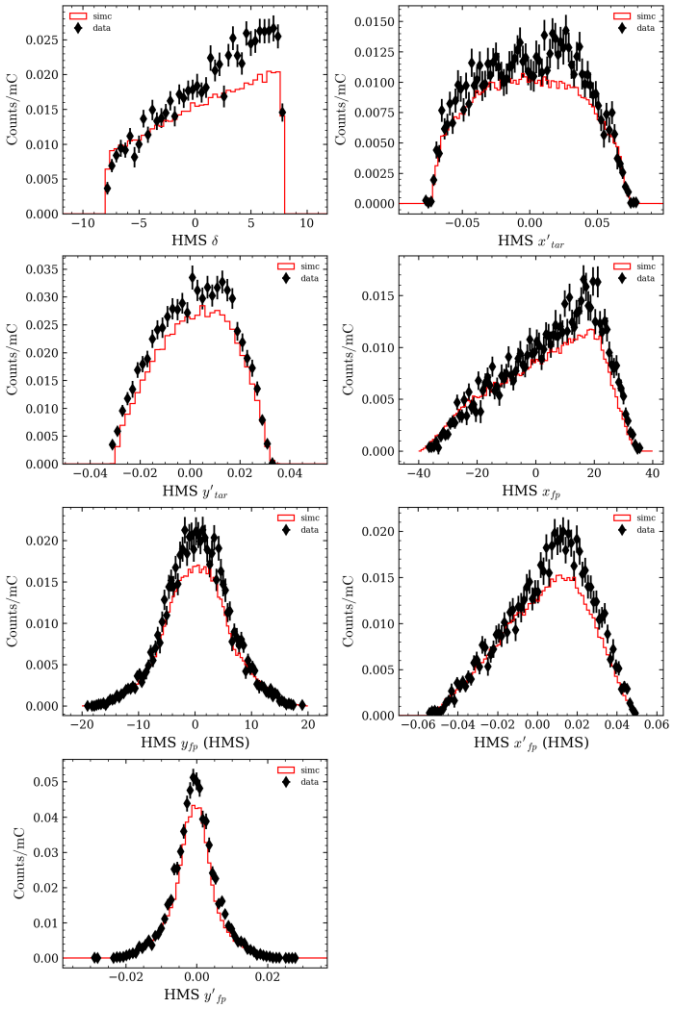
$$\sigma_{TT} = p_{12} \exp(-p_{13}|t|) \sin^2\theta$$

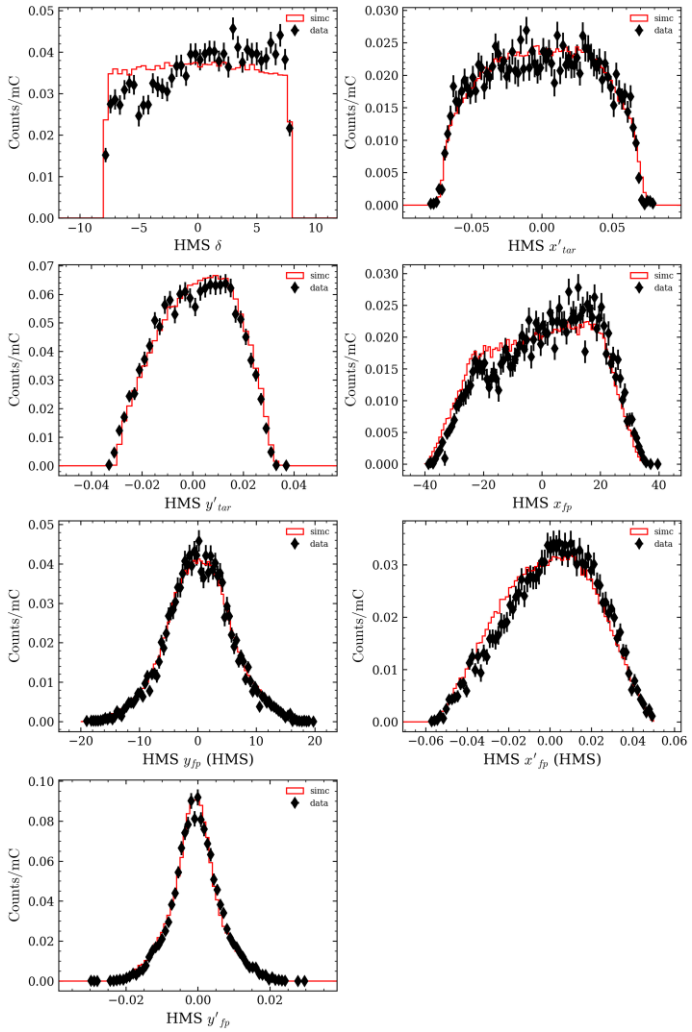


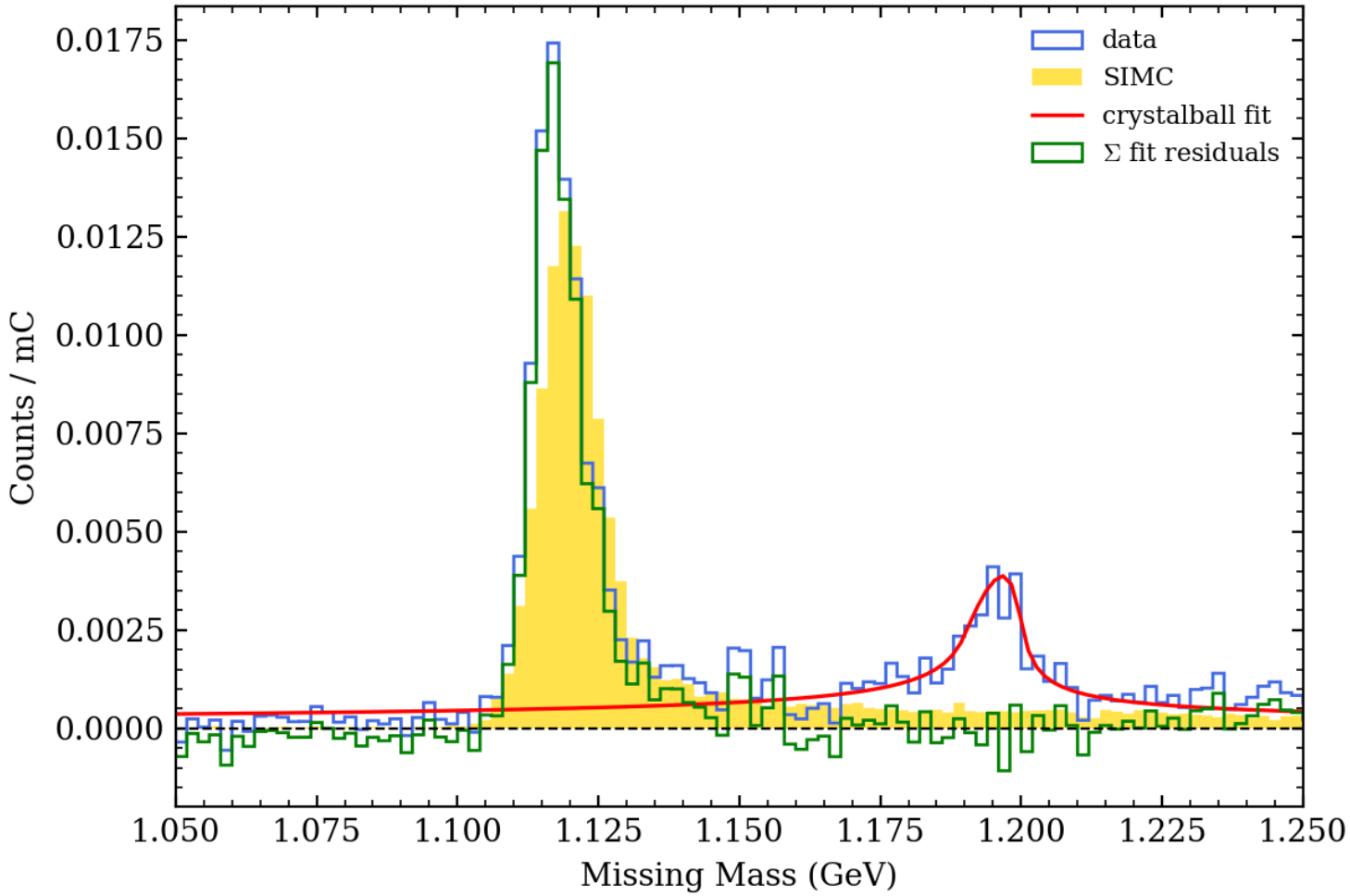
HMS distributions high e



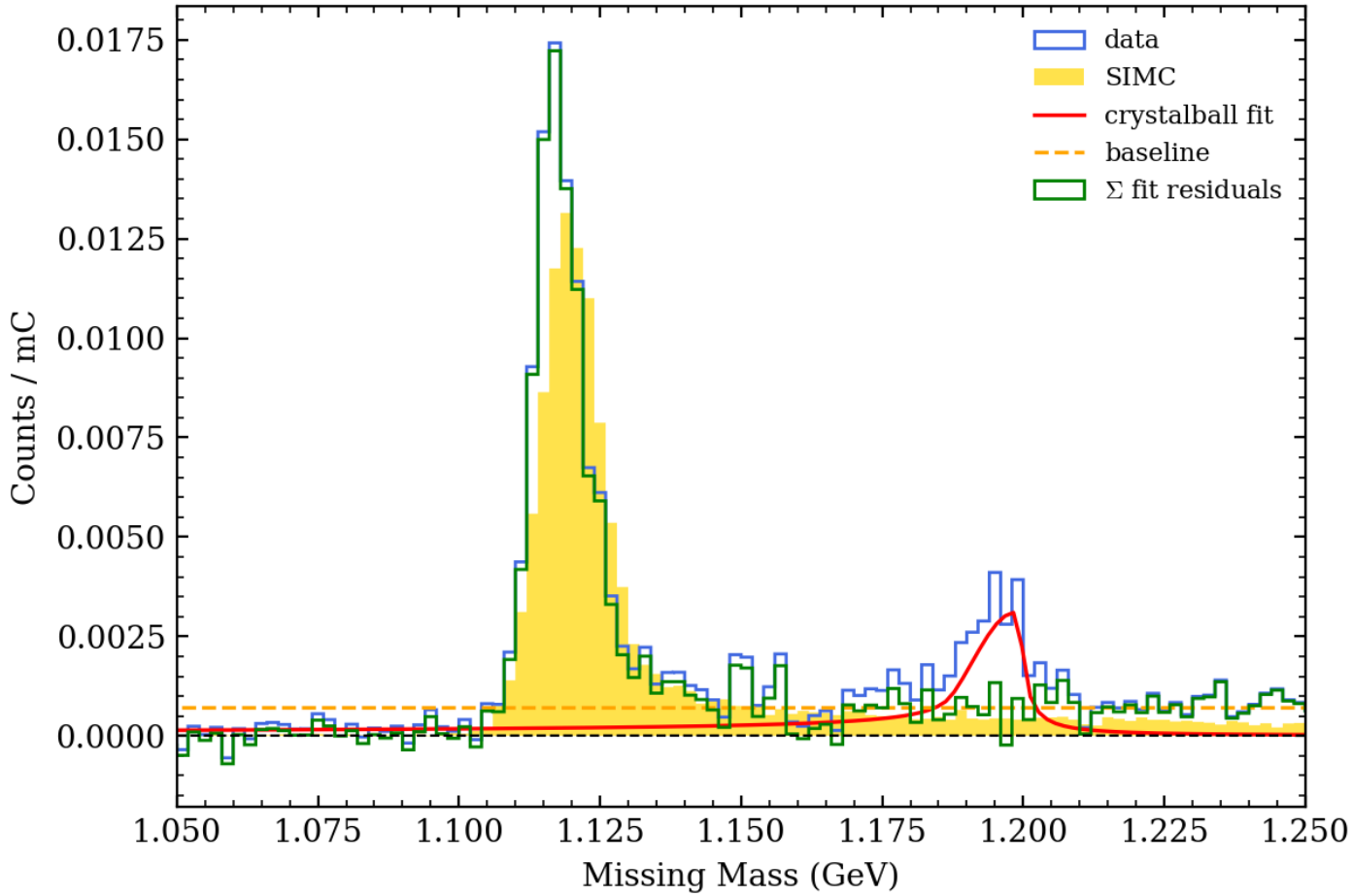
HMS distributions low e



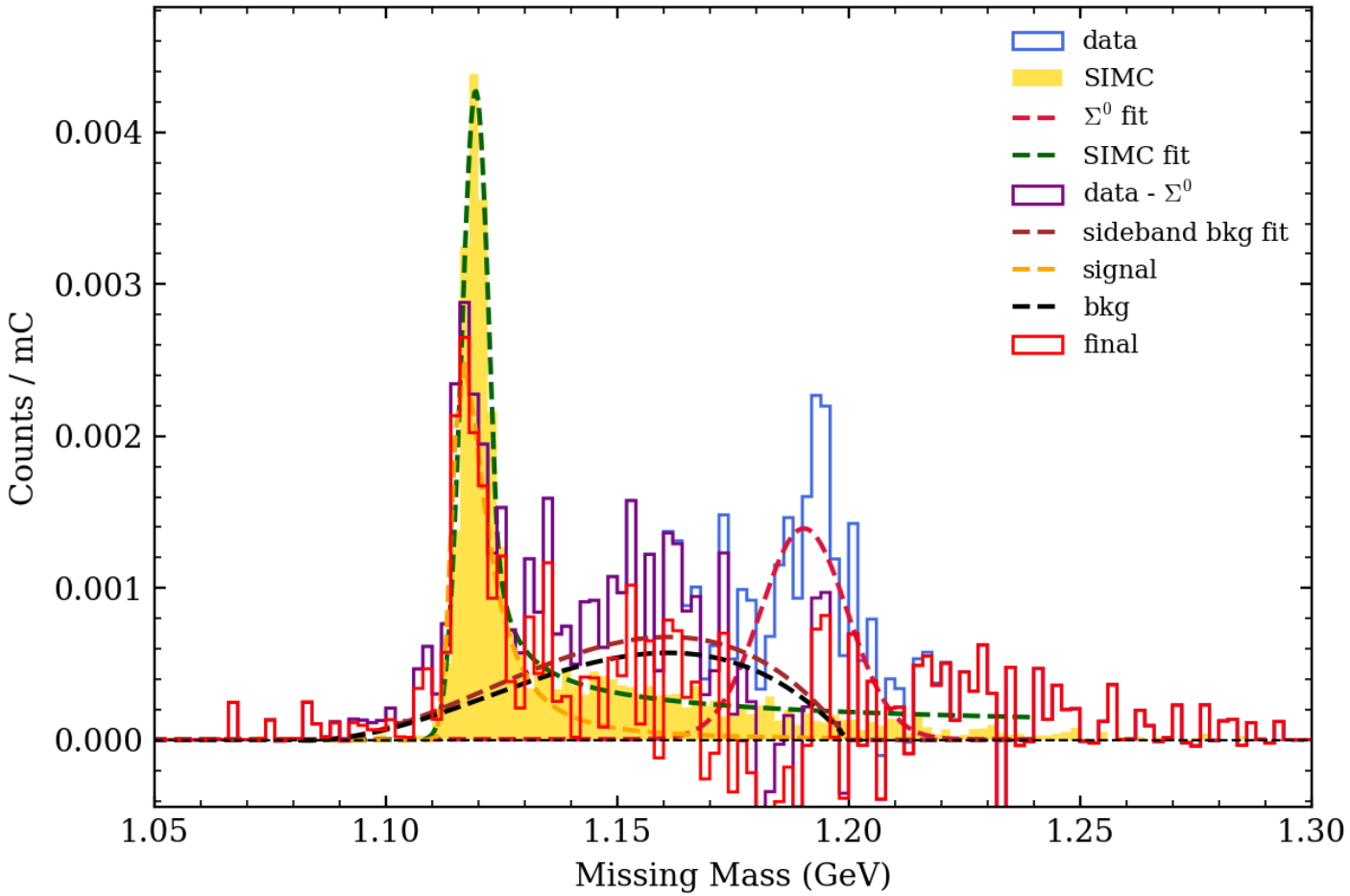




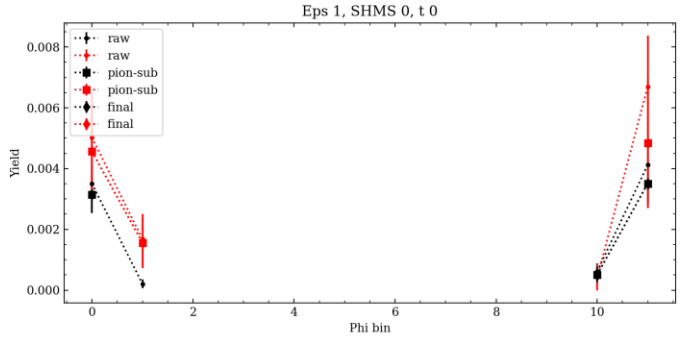
Simply fit sigma peak → over-subtraction

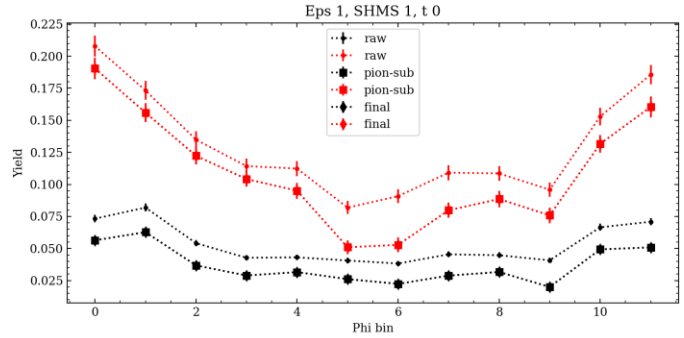


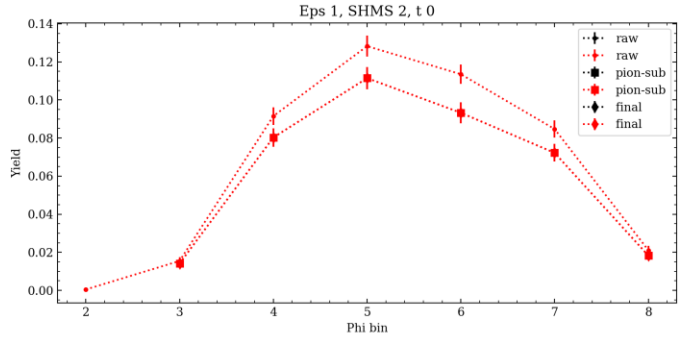
Add a base line and only subtract the peak → do not have large effect on lambda peak

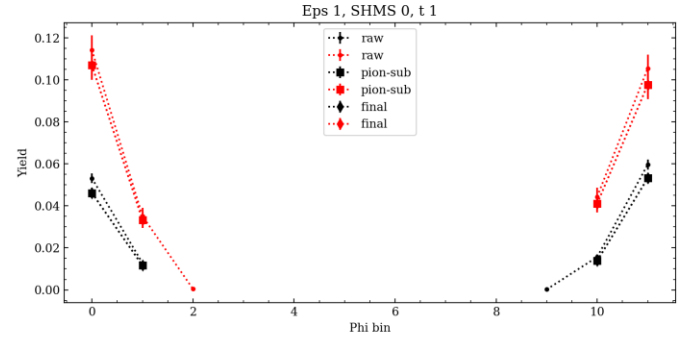


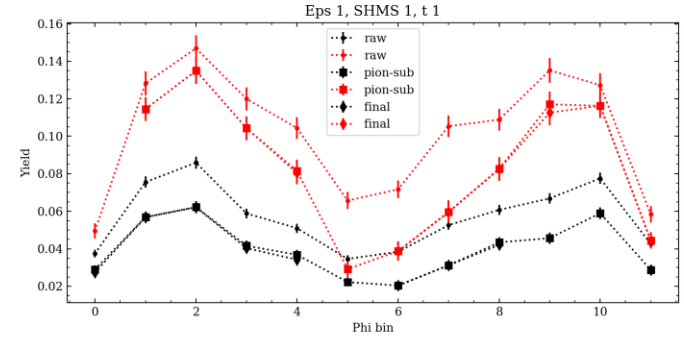
- Landau + polynomial baseline constrained to 0 at xends
- Fit sidebands to get init parameters → then fit full range

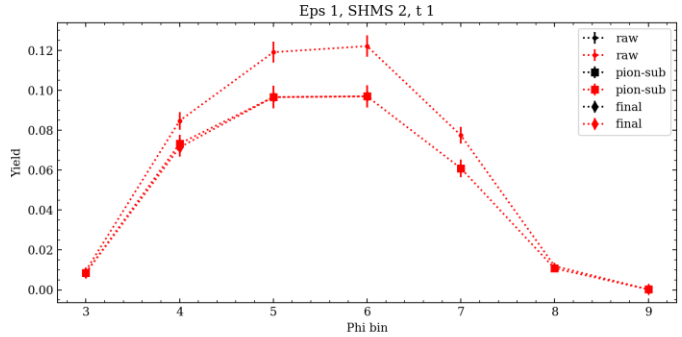

Eps 1, SHMS 0, t 0
raw
raw
pion-sub
pion-sub
final
final
Yield
Phi bin

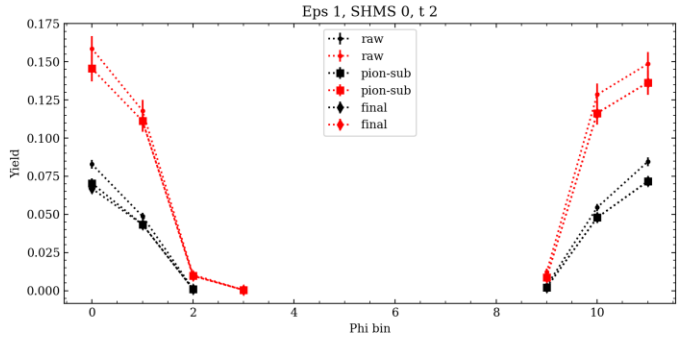

Eps 1, SHMS 1, t 0
raw
raw
pion-sub
pion-sub
final
final
Yield
Phi bin

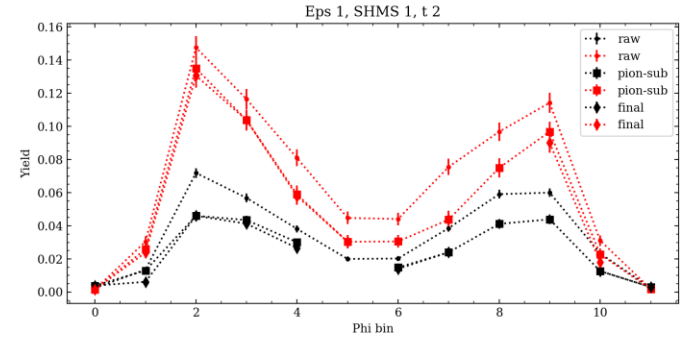

Eps 1, SHMS 2, t 0
raw
raw
pion-sub
pion-sub
final
final
Yield
Phi bin

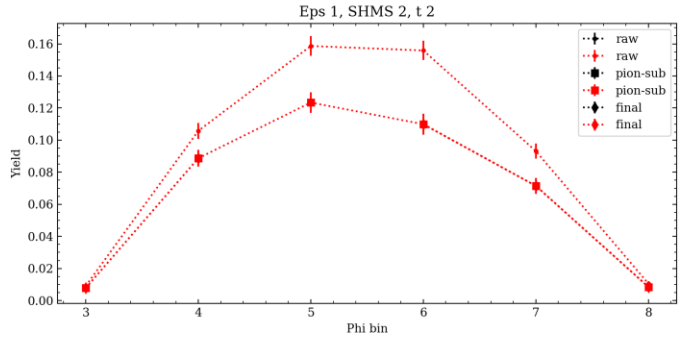

Eps 1, SHMS 0, t 1
raw
raw
pion-sub
pion-sub
final
final
Yield
Phi bin

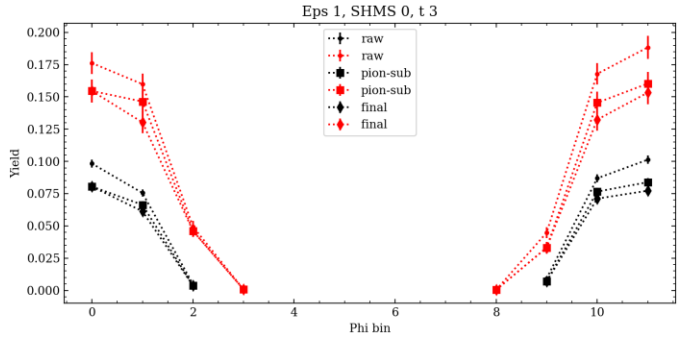

Eps 1, SHMS 1, t 1
raw
raw
pion-sub
pion-sub
final
final
Yield
Phi bin

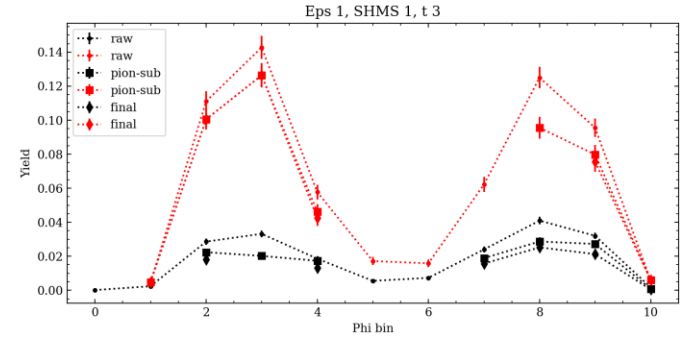

Eps 1, SHMS 2, t 1
raw
raw
pion-sub
pion-sub
final
final
Yield
Phi bin

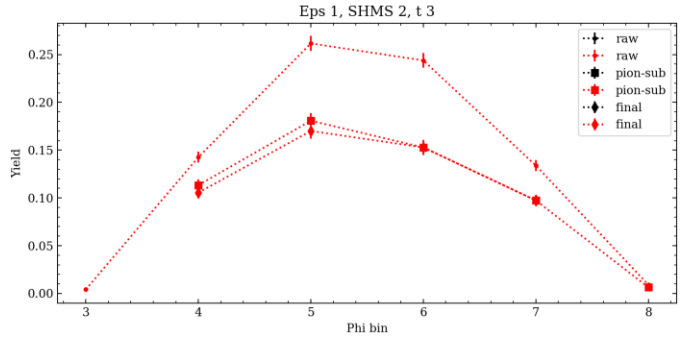

Eps 1, SHMS 0, t 2
raw
raw
pion-sub
pion-sub
final
final
Yield
Phi bin


Eps 1, SHMS 1, t 2
raw
raw
pion-sub
pion-sub
final
final
Yield
Phi bin


Eps 1, SHMS 2, t 2
raw
raw
pion-sub
pion-sub
final
final
Yield
Phi bin


Eps 1, SHMS 0, t 3
raw
raw
pion-sub
pion-sub
final
final
Yield
Phi bin


Eps 1, SHMS 1, t 3
raw
raw
pion-sub
pion-sub
final
final
Yield
Phi bin


Eps 1, SHMS 2, t 3
raw
raw
pion-sub
pion-sub
final
final
Yield
Phi bin