Toy model simulation

Generating:

$$\frac{dN}{d\phi} = 1 + 2v_2\cos(2\phi) + 2a_{\pm}\sin(2\phi)$$

Input :

$$v_2 = 0.05$$
$$a_{\pm} = \pm 0.02$$

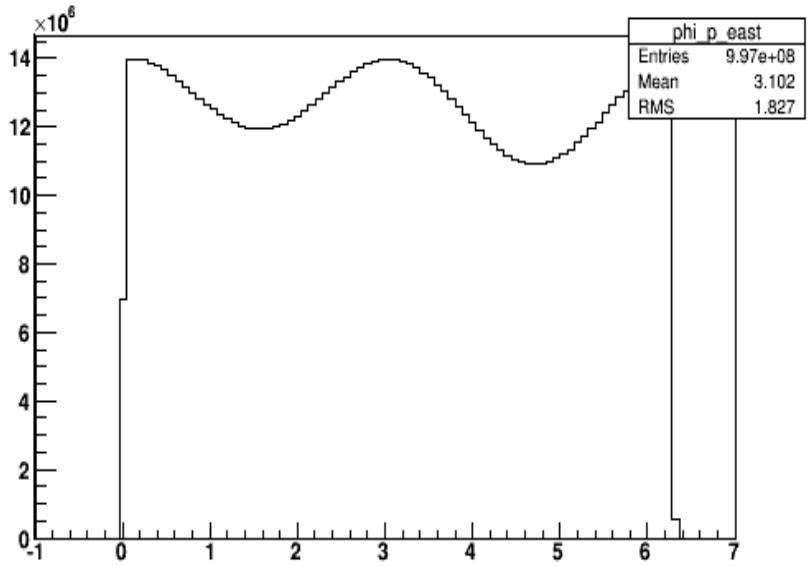
500 particles / event
Positive : eta<0 125 eta>0 125
Negative : eta<0 125 eta>0 125

Expectation:

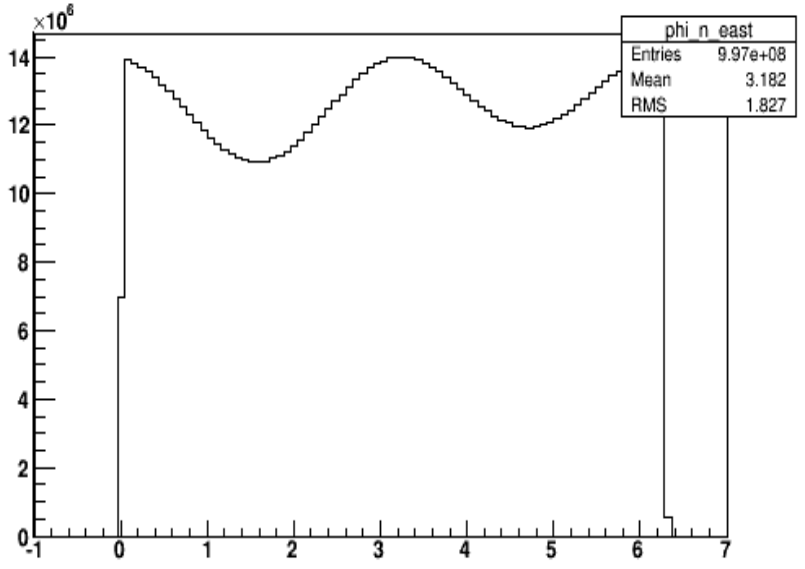
$$\gamma_{+-} = 0.0004$$

$$\gamma_{++} = \gamma_{--} = -0.0004 = -\left(\frac{\pi}{4}\right)^2 * \Delta < A^2 >$$

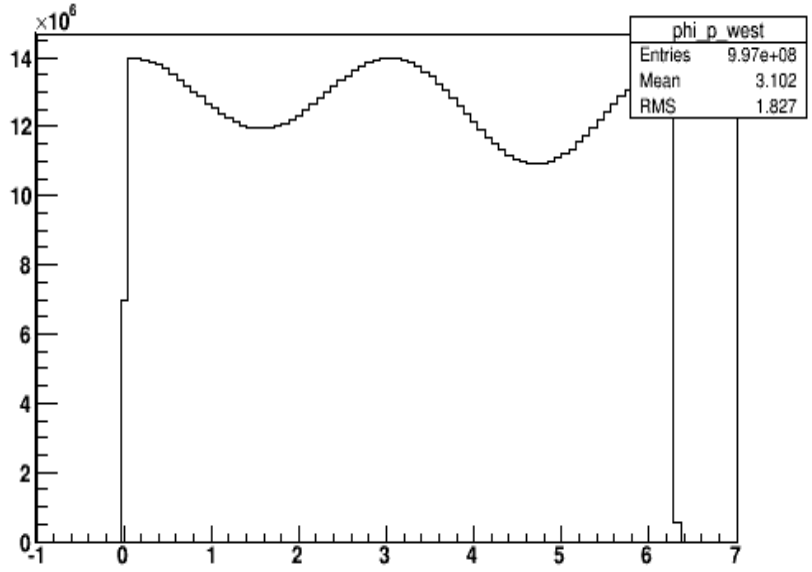
Positive Eta<0



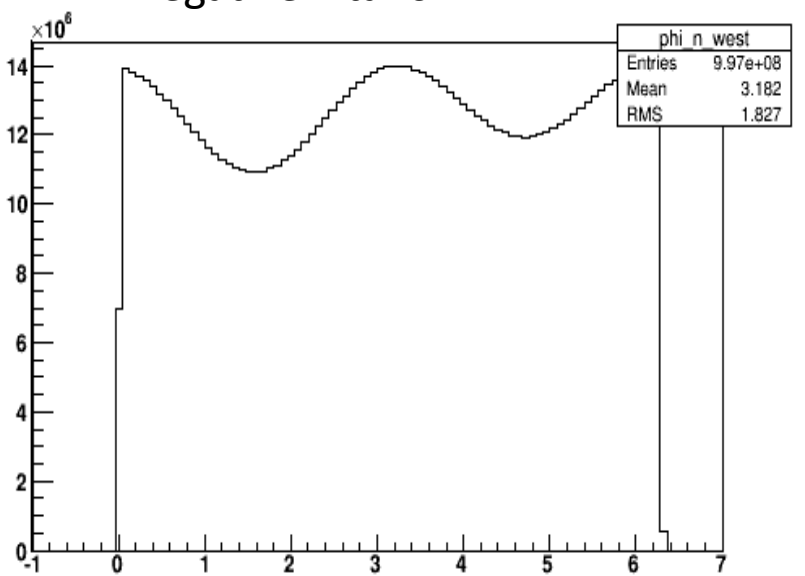
Negative Eta<0

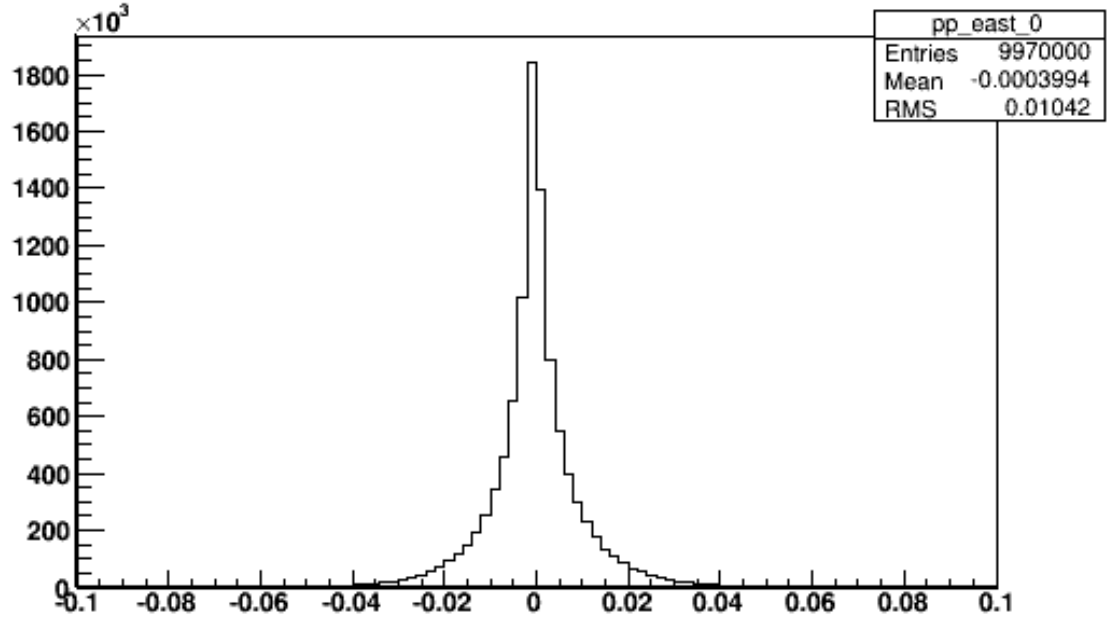


Positive Eta>0



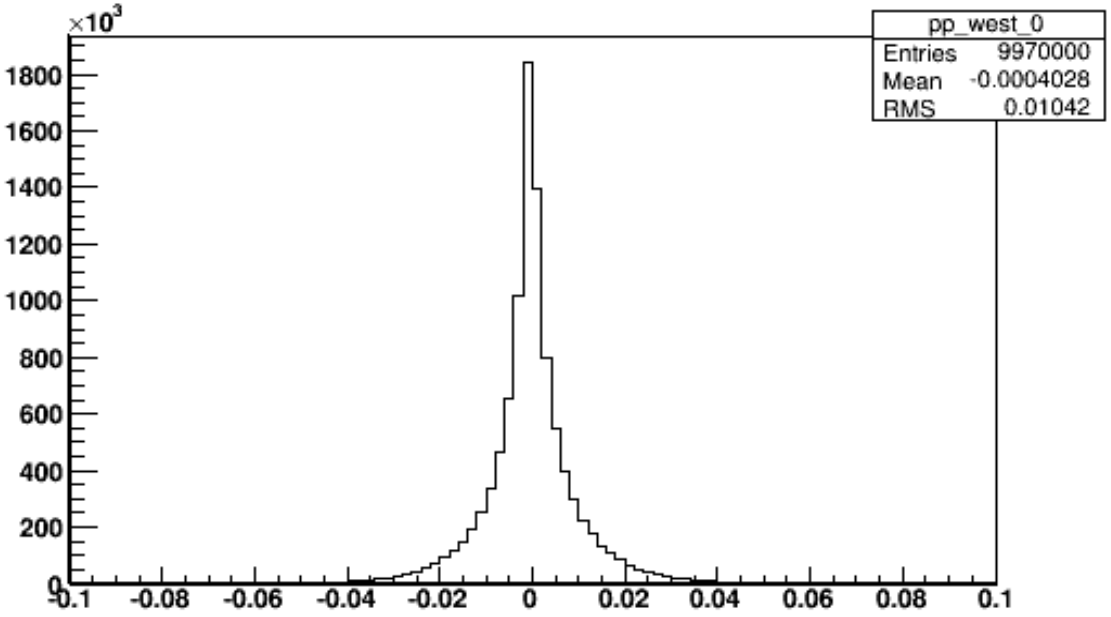
Negative Eta>0





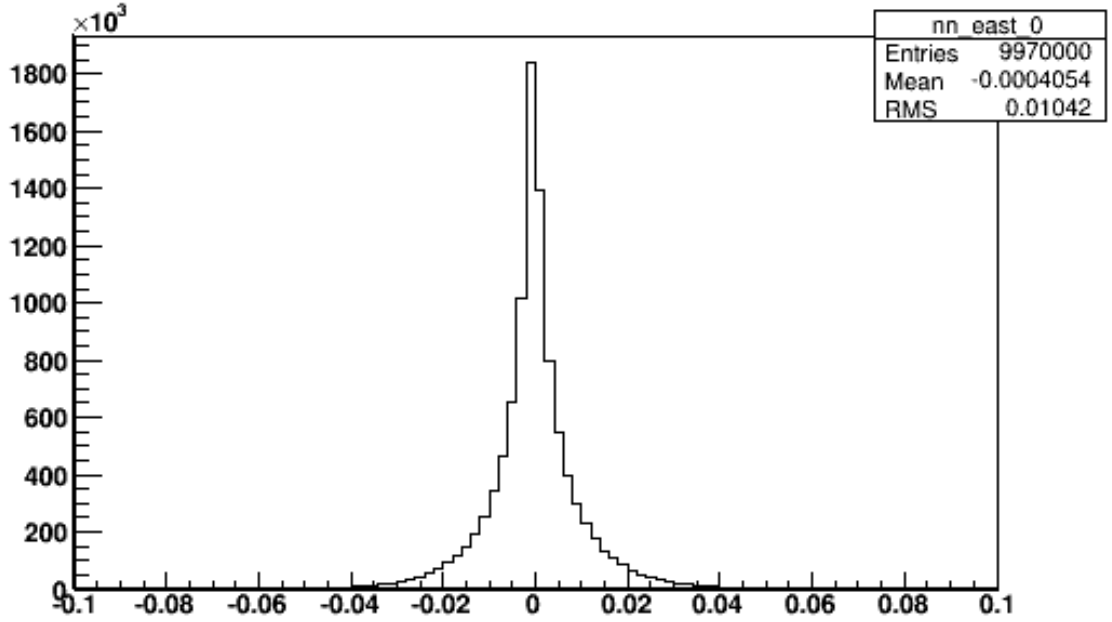
Eta<0

$\gamma_{++\_east} = -0.0003994$



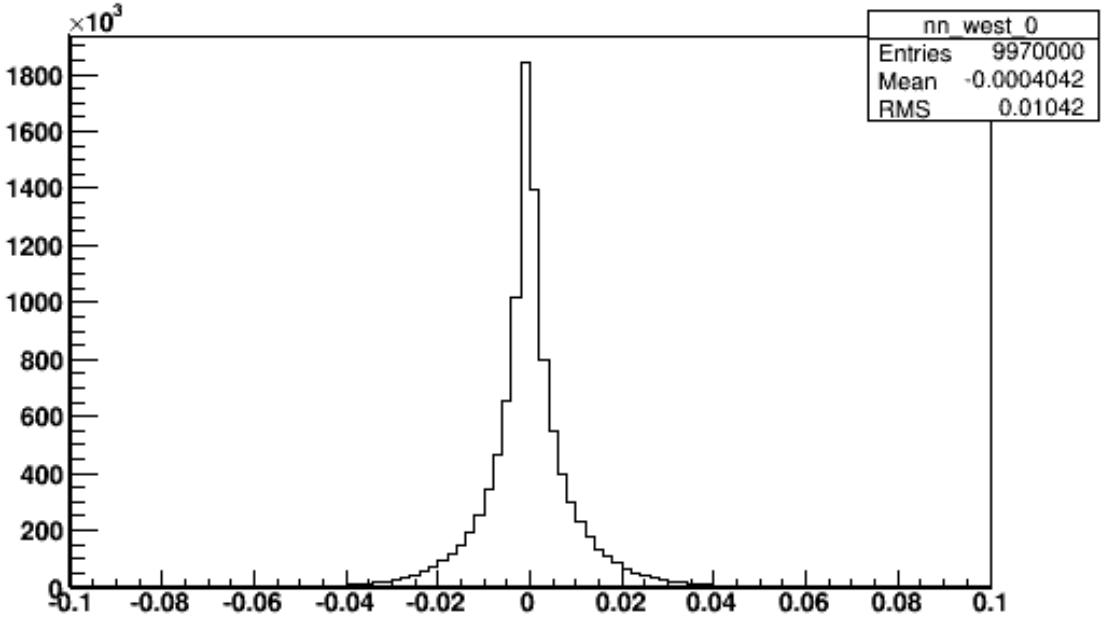
Eta>0

$\gamma_{++\_west} = -0.0004028$



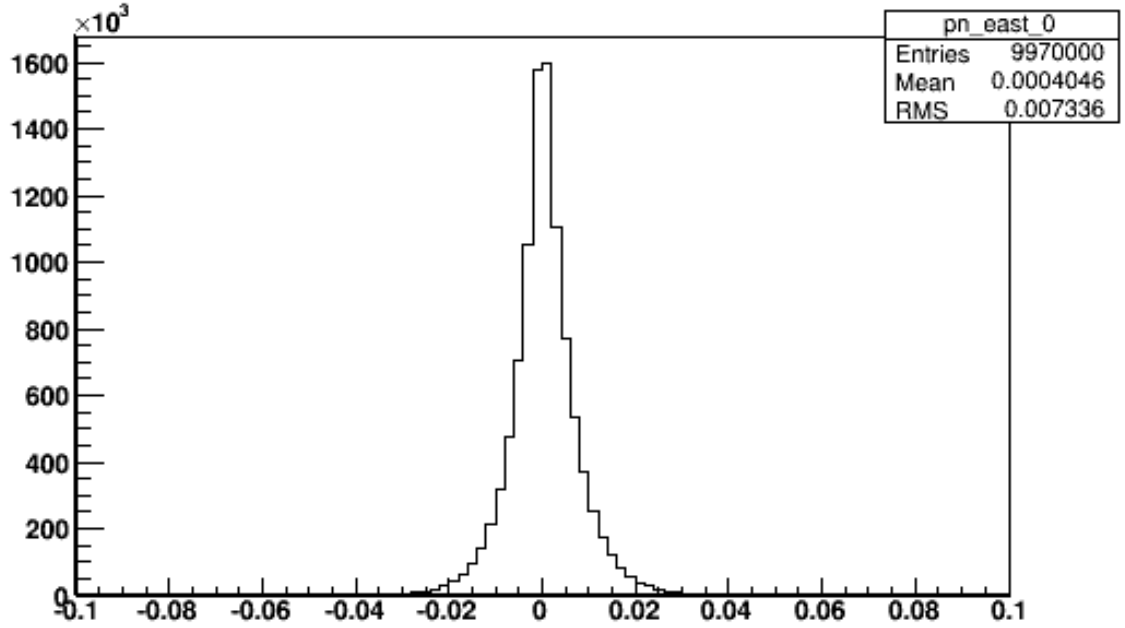
Eta<0

$\gamma_{--\_east} = -0.0004054$



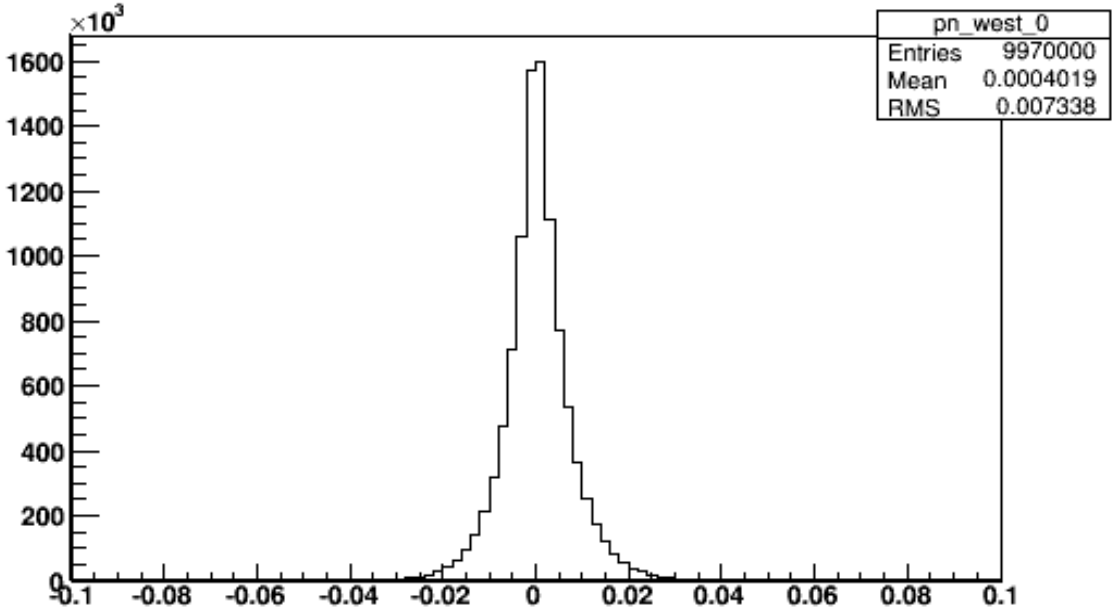
Eta>0

$\gamma_{--\_west} = -0.0004042$



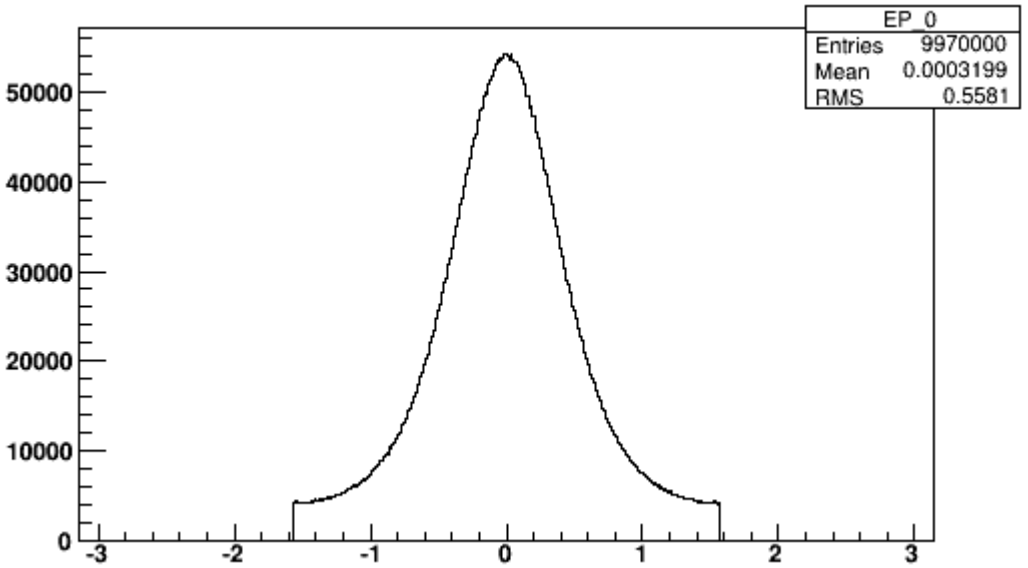
Eta<0

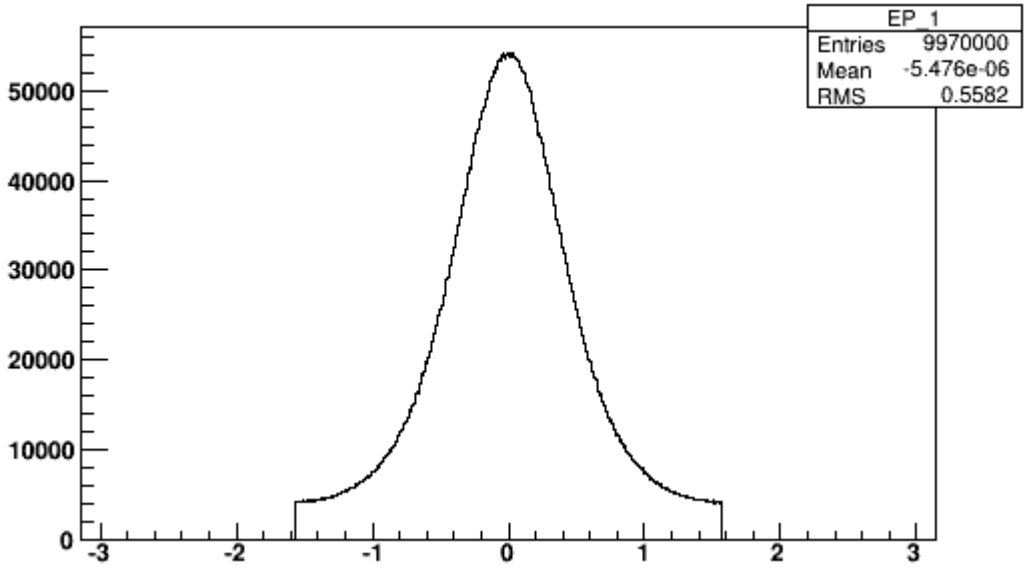
$\gamma_{+-\_east} = -0.0004046$



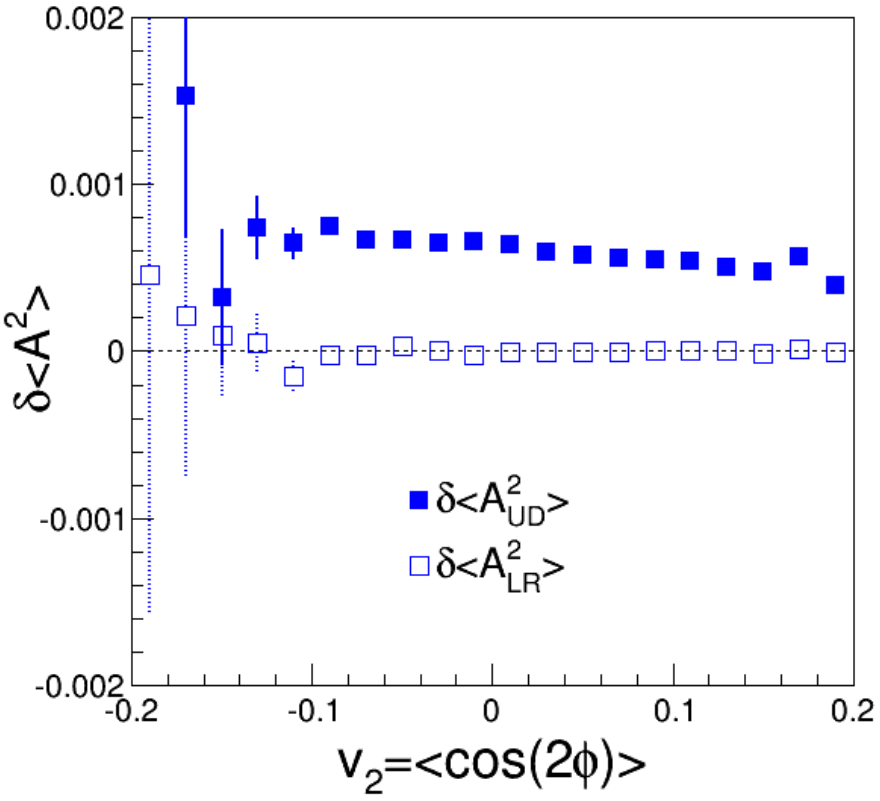
Eta>0

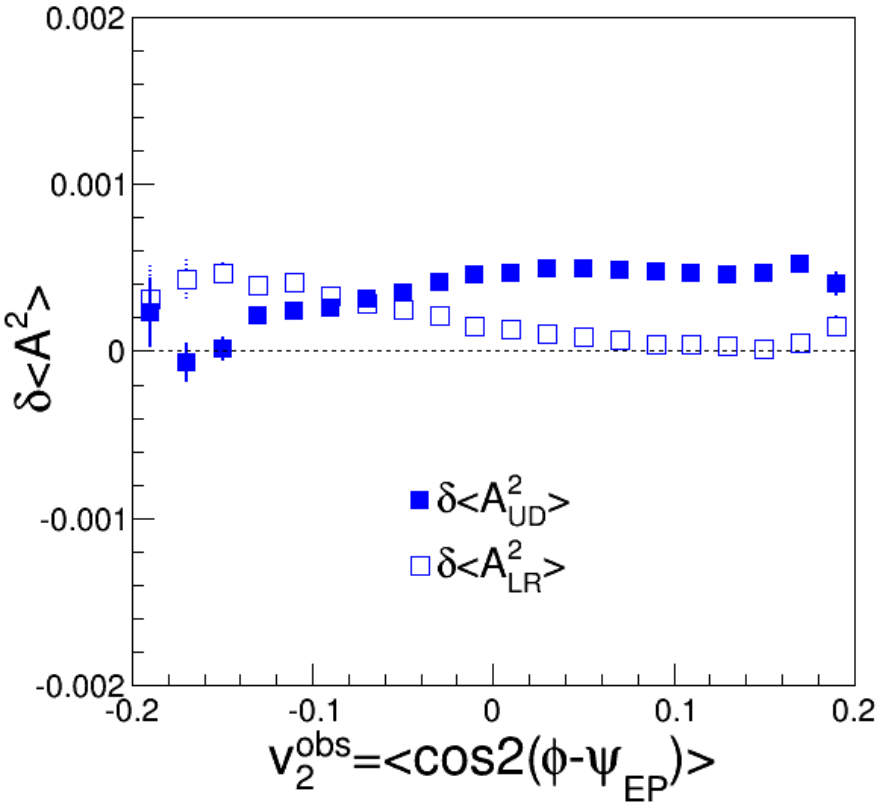
$\gamma_{+-\_west} = -0.0004019$





η_{sub} Event $Resolution = 0.5579 \pm 0.000256$



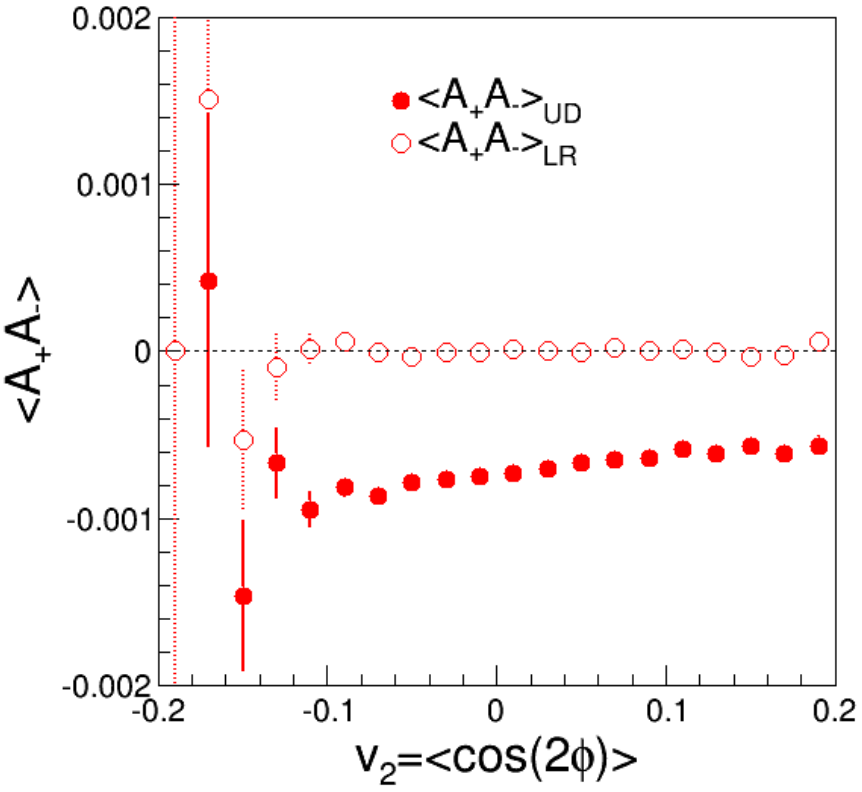


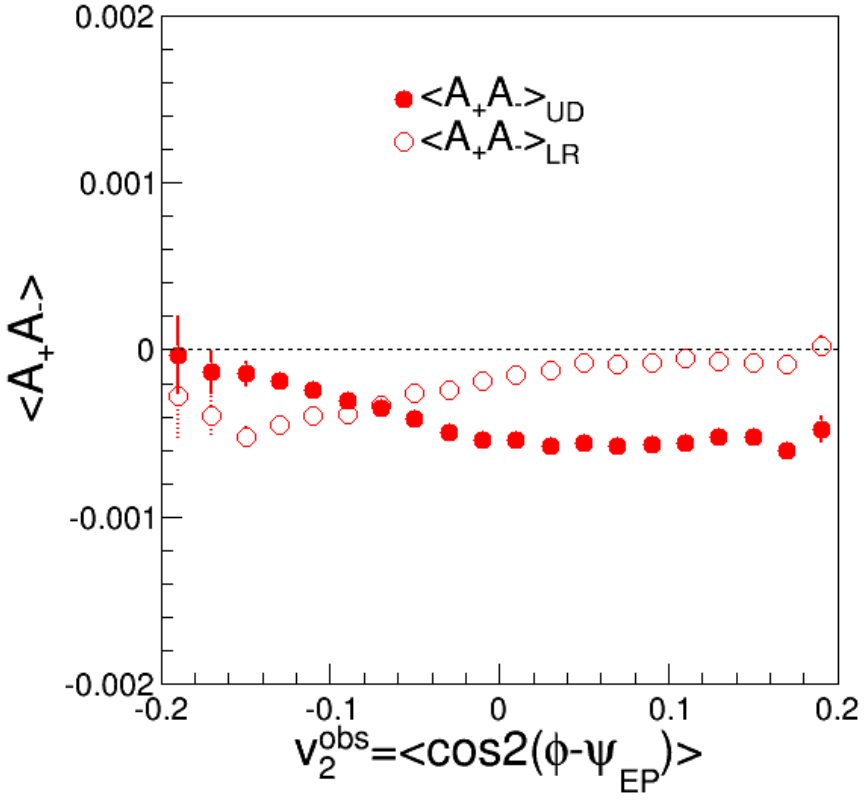
$\delta < A_{UD}^2 >$ has a weakly linear dependence of v_2

$\delta < A_{UD}^2 >$ is consistent with 0

Compared with data,

We can't find $\delta < A^2 >$ have a linear dependence of v_2^{obs}



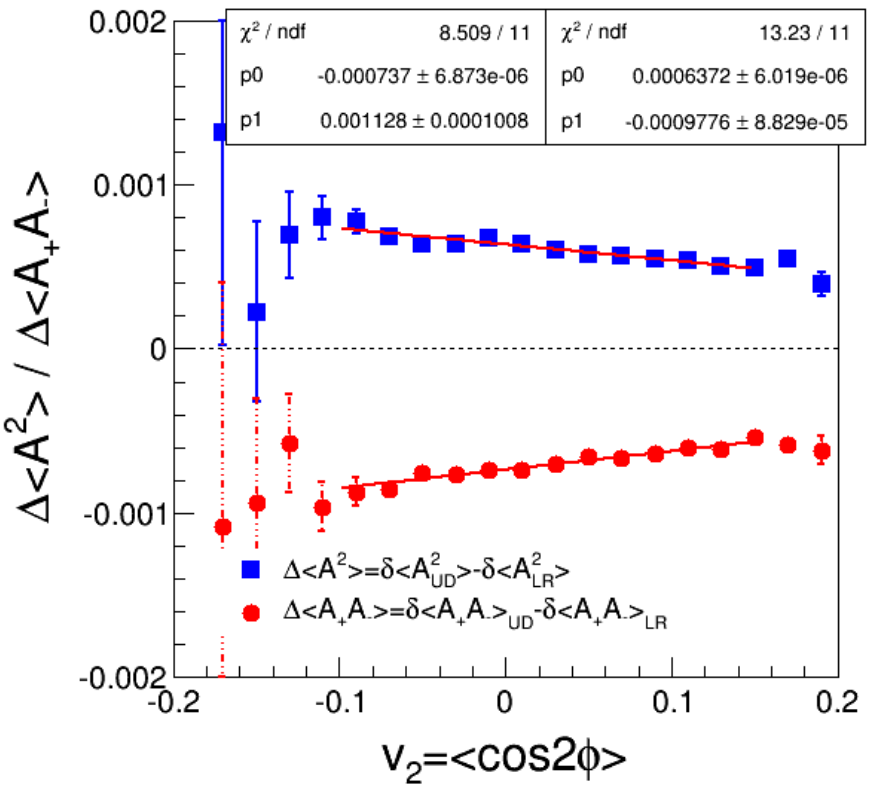


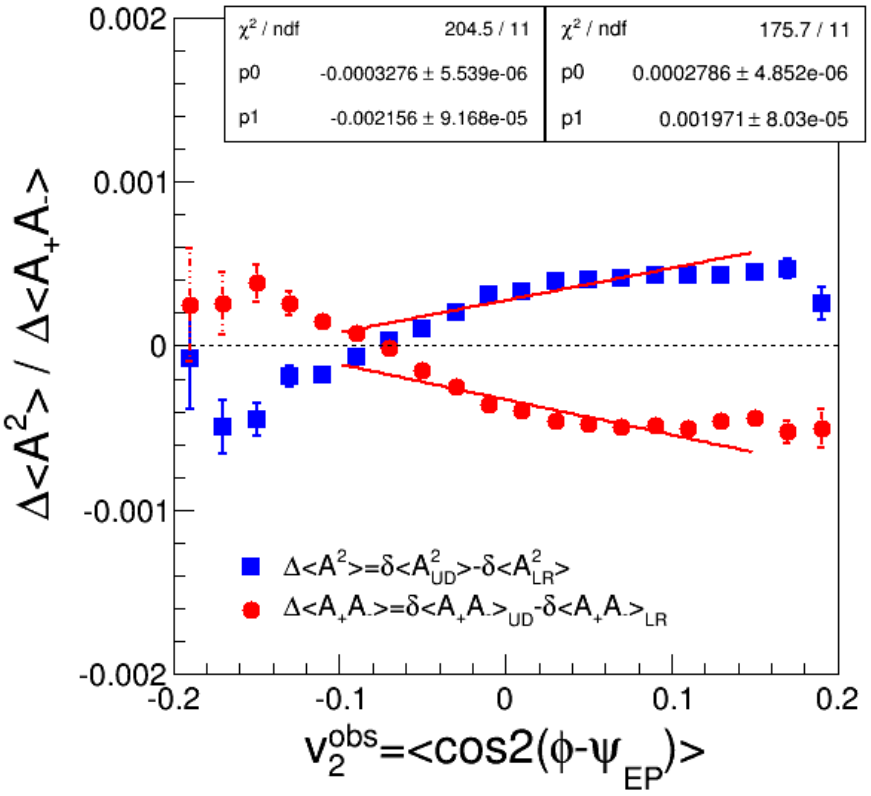
$\delta < A_+A_- >_{UD}$ has a weakly linear dependence of v_2

$\delta < A_+A_- >_{LR}$ is consistent with 0

Compared with data,

We can't find $\delta < A_+A_- >$ have a linear dependence of v_2^{obs}





$\left(\frac{\pi}{4}\right)^2 * \Delta < A^2 >= 0.0003931$

is consistent with γ_{++} and γ_{--}

$\left(\frac{\pi}{4}\right)^2 * \Delta < A_+A_- >=$-0.00045463931

Δ have no linear dependence of v_2^{obs}.

If we should add some other terms in our generating function???