

Attempt to Create Neutron Asymmetries and Re-weighting

Radiation Laboratory Spin Group Meeting

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9:00 PM (JST)

Benard Mulilo (KU/RIKEN)

Asymmetry Creation in Monte Carlo

Trandom Generator

[Random number generator]

- Create two spin states: spin up (0) and spin down (1)

Create weight depending on the spin state

$$w = (a + b * P_{T,T} + c * P_{T,T}^2 + d * P_{T,T}^3) \cos(\varphi_T + spin * \pi)$$

Where the parameters:

a = constant

b = linear

c = quadratic

d = cube

spin * pi = phase shift

spin = 0 (up)

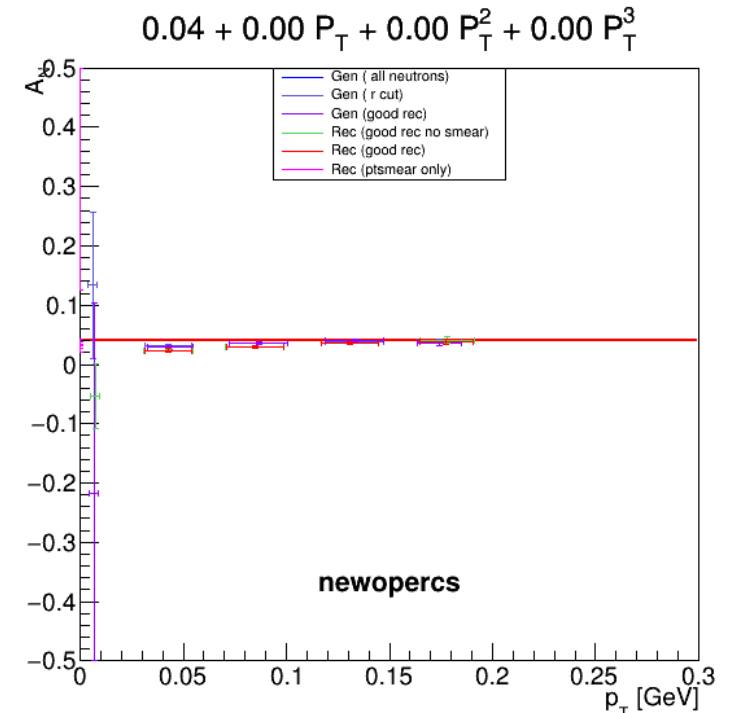
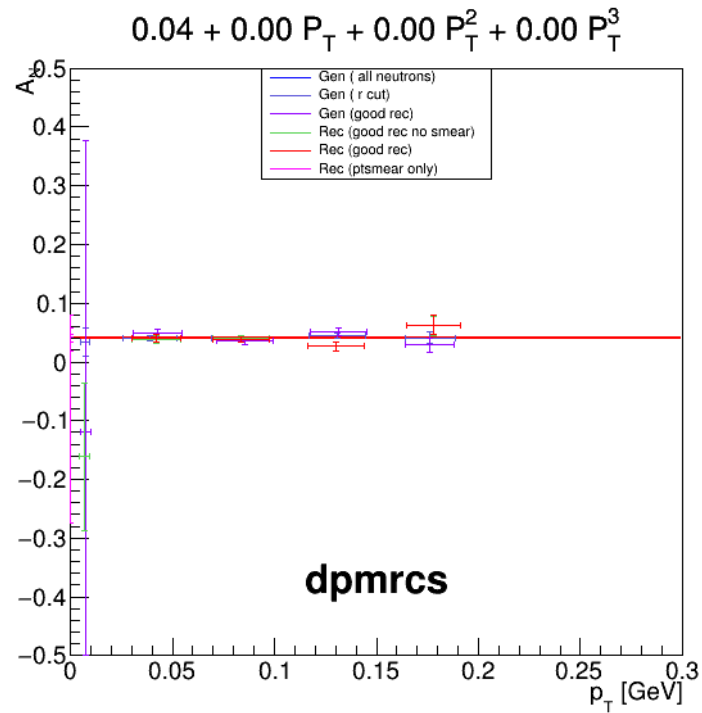
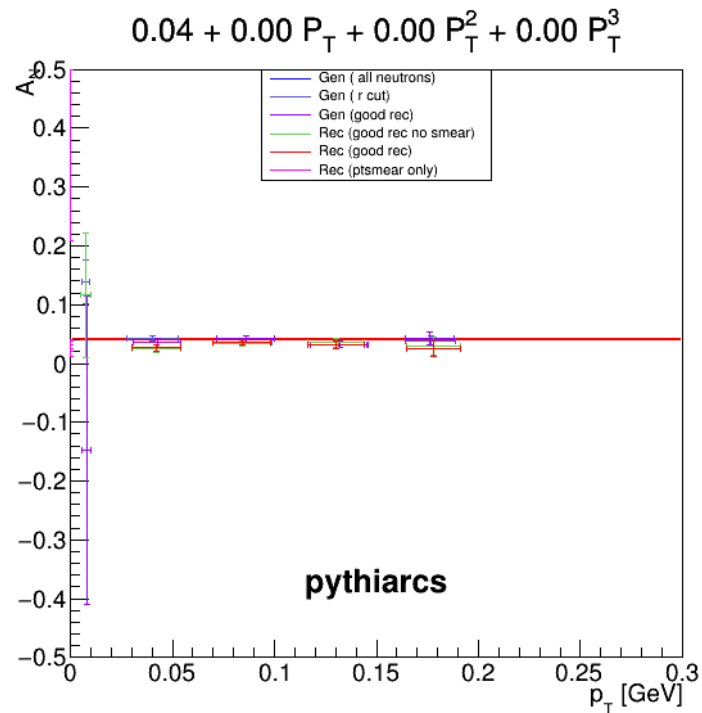
1 (down)

Reconstruct Pt variables using w for all events

Calculate asymmetries

Compare created asymmetries with data

Constant Asymmetry – Pythia, Dpmjet and Ope



Conclusion

- Checking asymmetry production in Monte Carlo using random numbers for each event.
- Asymmetries vs true pt shown are produced using a constant parameter =0.04 for different reconstructed variables.

To do:

- Check different functional forms: constant, linear, quadratic and cubic functional forms.
- Optimize and compare with data asymmetries.