Update on the Compton Model 8/25

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Checklist

Current Updates

- Integrated Asymmetry
- Using the farm (slurm)

Dummy Data

- As a proof of concept I manually went through a 5 bin histogram looking at ”asymmetry”, as well as ”Integrated asymmetry”.
- This was done as a proof of concept that math does work (shown on next slide)

Integrated Asymmetry (Form 1)

- The first form uses the asymmetry that is a function energy and normalizes it accordingly

$$< A >= \frac{\int A(N_p + N_m)}{\int (N_p + N_m)} \tag{1}$$

$$A = \frac{(N_p - N_m)}{(N_p + N_m)} \tag{2}$$

- N_p is the number of particles in each bin originating from a positive polarization electron, and N_m from a negative polarization electron

Integrated Asymmetry (Form 2)

- When we substitute in for A we can arrive at the equation for the ”direct” method

$$< A >= \frac{\int (N_p - N_m)}{\int (N_p + N_m)} \tag{3}$$

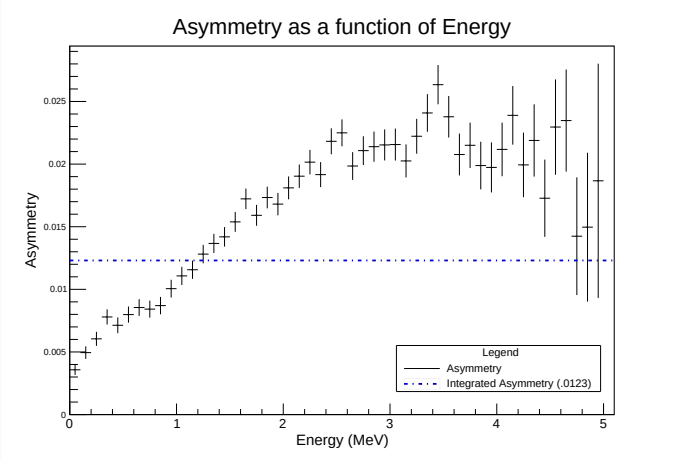
- In principle these two methods should be exactly equal, but for all the results I was observing this was not the case

Finding the error

- The issue was in my calculations for A
- The binning was offset by 1 causing a shift in results, the corrected results are on the next page.

Corrected Asymmetry

- Integrated Asymmetry is found to be 1.23%



Using the farm

- I learned how to submit jobs to the farm
- I ran 10 jobs for 1 billion runs, took roughly 9 hours total
- Submitted 90 more to hopefully get them all in soon
- 10 for for each configuration and polarization
- Technote has been heavily edited to be more in line with what should done