

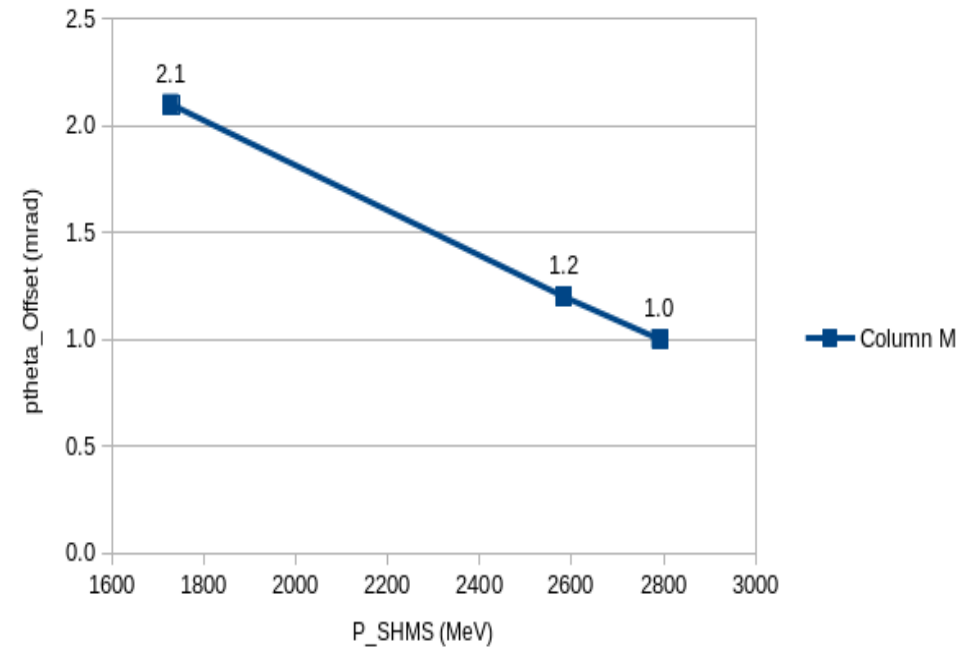
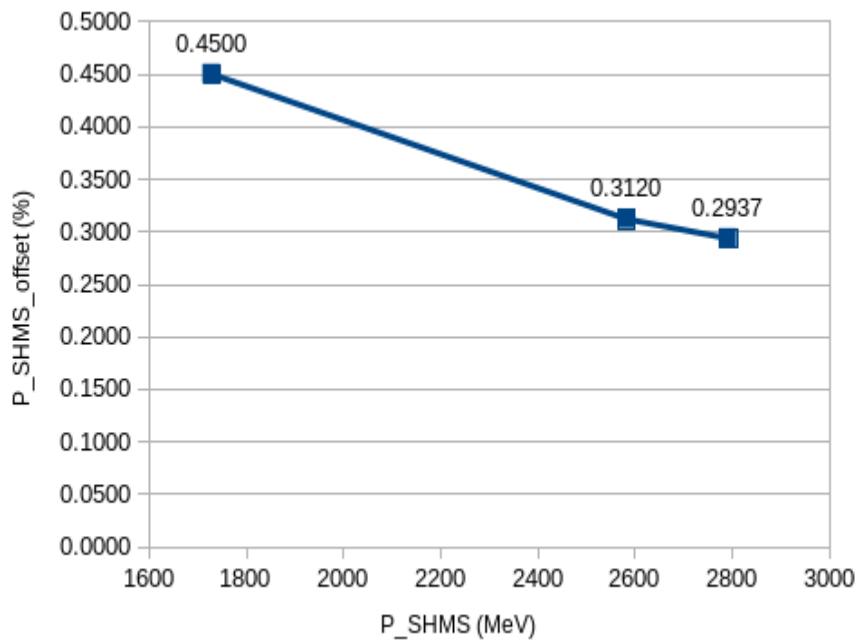
Analysis update: Aug 17, 2022

- The heapcheck study has been completed at 2.7, 3.6, 3.9, 4.5 and 4.9 GeV data. 2.7, 3.6 and 4.5 GeV are from the **PionLT** data while the other two are from the **KaonLT**.
- I found that 3.6 and 3.9 energies data do not have the angle offsets.
- The heapcheck program was helpful to understand and fixed the data for all relevant variables (**pmiss, emiss, pmissx, pmissy, pmissz and W**).
- I've corrected the data with the found offsets in heapcheck program and now the data and MC are agreed within **1 MeV**.
- The full table of the heapcheck study is shown in the next page.

Energy (MeV)	dW (MeV)	dE_m (MeV)	dp_m(par) (MeV)	dp_m(per) (MeV)
Before the Heepcheck				
2749.00	6.00	7.87	6.46	6.42
3660.00	1.48	1.53	1.75	1.93
3834.85	2.94	2.58	2.33	1.25
4559.00	10.66	9.69	7.03	5.92
4932.00	12.59	10.73	7.07	7.82
After the Heepcheck				
2745.90	0.83	0.83	0.59	0.23
3658.60	0.65	0.72	0.24	0.94
3833.45	0.45	0.24	0.42	0.33
4554.00	0.98	0.14	0.30	0.70
4926.20	0.71	0.38	0.96	0.04

Note: dW, dE_m, dp_m(par) and dp_m(per) are the total shift with respect to MC (SIMC) data.

- I've plotted the offsets as a function of central momentum for SHMS.



- I've NOT yet corrected the data for the edge issues (tar variables) that the data are disagreeing with SIMC.
- I'm interested to see the offsets at higher Q^2 data.

Next Plan

- Currently working for my annual Ph.D. committee progress updates.
- The target boiling study for this data is in the waiting list, hopefully it'll start soon.
- The second round of the physics data simulation (with the new target geometry) and then comparison study of the experimental and SIMC Yields is also in the waiting list. I'm planning to start it soon...