



Pion-LT Meeting

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- Working on physics setting: $Q^2 = 3.85$, $W = 2.62$, $t = 0.21$ (2 epsilons)
- Following studies need to be finalized before the LTSep analysis:
 - Missing mass offset and cut determination
 - Diamond cut determination
 - t -resolution check
 - t and ϕ -binning
 - Data and SIMC yields

■ Cuts for pion physics data

HMS Cuts (Electrons)

$$-8 < H_gtr_dp < 8$$

$$-0.08 < H_gtr_th < 0.08$$

$$-0.045 < H_gtr_ph < 0.045$$

$$H_hod_goodstarttime == 1.0$$

$$HMS_Cal_etottracknorm > 0.7$$

$$H_Cer_npeSum > 1.5$$

■ Cuts for SIMC

HMS Cuts (Electrons)

$$-8 < hsdelta < 8$$

$$-0.08 < hsxpf < 0.08$$

$$-0.045 < hsypf < 0.045$$

SHMS Cuts (Pions)

$$-10 < P_gtr_dp < 20$$

$$-0.06 < P_gtr_th < 0.06$$

$$-0.04 < P_gtr_ph < 0.04$$

$$Ctime_epCoinTime_ROC1 - Prompt Peak$$

$$P_hod_goodstarttime == 1.0$$

$$P_aero_npeSum > 1.5$$

$$1.2 < P_RF_DIST < 3.4$$

$$0.90 < MMpi < 1.06$$

SHMS Cuts (Pions)

$$-10 < ssdelta < 20$$

$$-0.06 < ssxpf < 0.06$$

$$-0.04 < ssypf < 0.04$$

- Global Offsets:

Global In-Plane Offsets – Momentum and Energy offsets in 0.1% unit, Angle offset in mrad unit

BE	dBE	Global Offsets for 5.9 GeV to 9.9 GeV	
5984.8	-0.0500	HMS_dtheta	1.5000
6394.7	-0.1500	HMS_dp	0.0000
7937.6	-0.2222	SHMS_dtheta	1.4000
8478.6	-0.1333	SHMS_dp	4.5000
9171.3	-0.0444	Offsets for 10.5 GeV	
9876.9	-0.2222	HMS_dtheta	1.5000
		HMS_dp	-3.2000
10546.8	-1.0000	SHMS_dtheta	1.4000
		SHMS_dp	4.5000

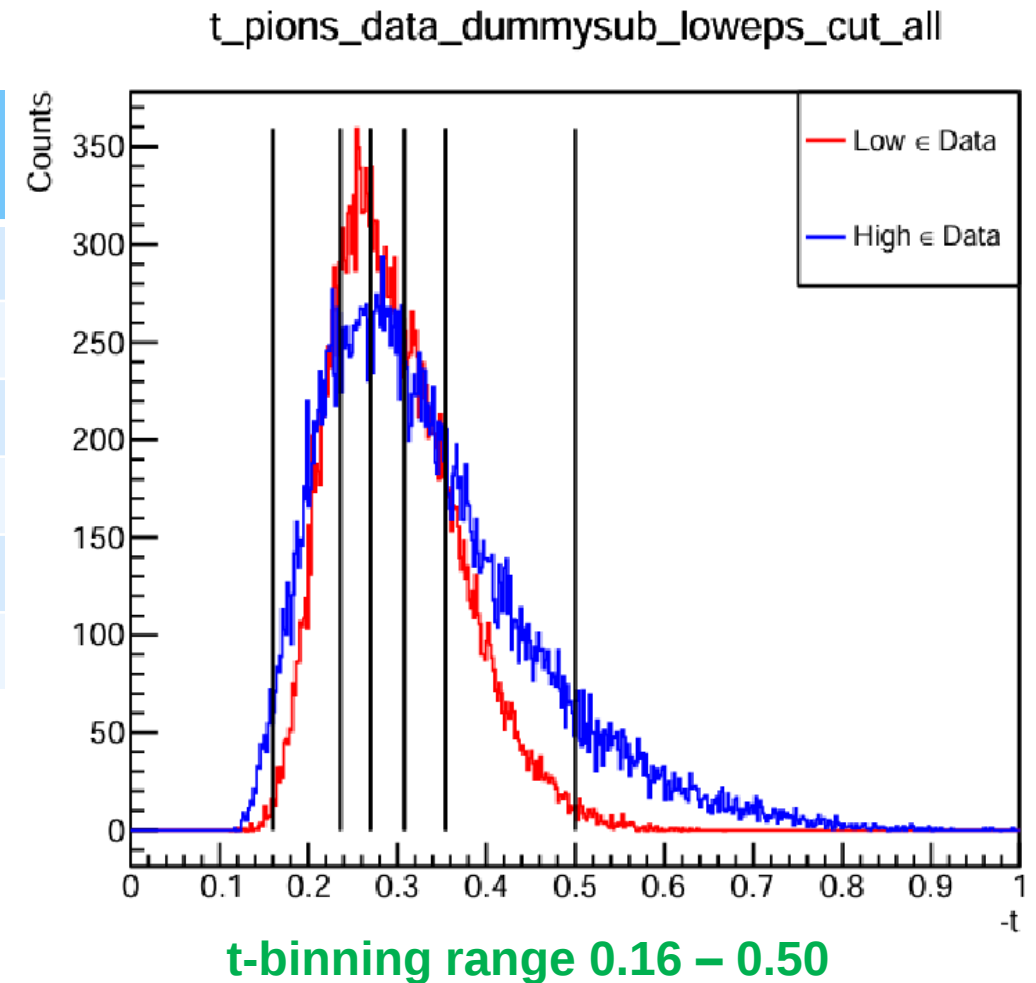
- Implemented Out-of-plane offsets (**HMS = +0.001875rad** and **SHMS = -0.000155rad**)

t-binning

PionLT Experiment

- t-binning for “Q2 = 3.85, W = 2.62, t = 0.21 (2-epsilons)”

t_min	t_max	Yield (loweps)	Error (loweps)	Yield (higheps)	Error (higheps)
0.160	0.236	5170.833	73.447	6505.667	81.246
0.236	0.270	5371.667	74.758	4316.333	66.242
0.270	0.308	5350.833	74.933	4937.667	70.942
0.308	0.354	5104.167	73.460	4955.167	71.335
0.354	0.500	5224.833	75.651	8588.167	94.167



- Working on physics setting: “ **$Q^2 = 3.85$, $W = 2.62$, $t = 0.21$ (2 epsilons)**”
- Following studies need to be finalized before the LTSep analysis:
 - Missing mass offset and cut determination
 - Diamond cut determination
 - t-resolution check
 - t-binning
 - **phi-binning**
 - **Data yields**
 - **SIMC yields**

In progress:

- Working on phi-binning and normalized data yield calculation.