



Pion-LT Meeting

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- Implemented optics matrix files for 5.8, 6.1, 6.7 GeV.
- Work in progress for 5.6 GeV (Currently using optics files from the unsaturated region - 2018)

5.6 GeV	5.9 GeV	6.1 GeV	6.7 GeV
16162 – 16165	12079 – 12088	14570 – 14574	14995 – 15038
16188 – 16242	14986 – 14994		
16683 – 16684	15039 – 15052		
	16174 – 16187		

- NPS group still working on delta optimization.
- Updated zero-order CMOP matrix elements (htheta_offset and hphi_offset) for 5.8, 6.1, 6.7 GeV in hmsflag.param files.

- For HMS 5.8 GeV, used the following phi and theta offsets from NPS
- For HMS 6.1 GeV, used the following phi and theta offsets from NPS
- For HMS 6.7 GeV, used the following phi and theta offsets from NPS

```
; Do not to change these values, since these are the zero order  
; CMOP matrix elements. If you do change then your hms sieve  
; plots will be screwed up.  
hdelta_offset = 0. ; (%) hdelta_tar = hdelta_tar + hdelta_offset  
htheta_offset = 4.53977455e-4 ; (rad) hyp_tar = hyp_tar + htheta_offset  
hphi_offset = 6.60916405e-4 ; (rad) hxp_tar = hxp_tar + hphi_offset  
;
```

```
; Do not to change these values, since these are the zero order  
; CMOP matrix elements. If you do change then your hms sieve  
; plots will be screwed up.  
hdelta_offset = 0. ; (%) hdelta_tar = hdelta_tar + hdelta_offset  
htheta_offset = 6.4761385e-4 ; (rad) hyp_tar = hyp_tar + htheta_offset  
hphi_offset = 5.81654738e-4 ; (rad) hxp_tar = hxp_tar + hphi_offset  
;
```

```
; Do not to change these values, since these are the zero order  
; CMOP matrix elements. If you do change then your hms sieve  
; plots will be screwed up.  
hdelta_offset = 0. ; (%) hdelta_tar = hdelta_tar + hdelta_offset  
htheta_offset = 5.84959117e-4 ; (rad) hyp_tar = hyp_tar + htheta_offset  
hphi_offset = 7.11802209e-4 ; (rad) hxp_tar = hxp_tar + hphi_offset  
;
```

- For HMS momentum < 5.5 GeV, using the same optics matrix files from KaonLT
- For now, set phi_offset for both spectrometer to 0 (as in KaonLT)
- Emailed Mark about these offsets. Still waiting for his response

```
; Do not to change these values, since these are the zero order
; CMOP matrix elements. If you do change then your hms sieve
; plots will be screwed up.
hdelta_offset = 0. ; (%) hdelta_tar = hdelta_tar + hdelta_offset
htheta_offset = 0. ; (rad) hyp_tar = hyp_tar + htheta_offset
; hphi_offset = -4.946337367e-3 ; (rad) hxp_tar = hxp_tar + hphi_offset
hphi_offset = 0.
;
```

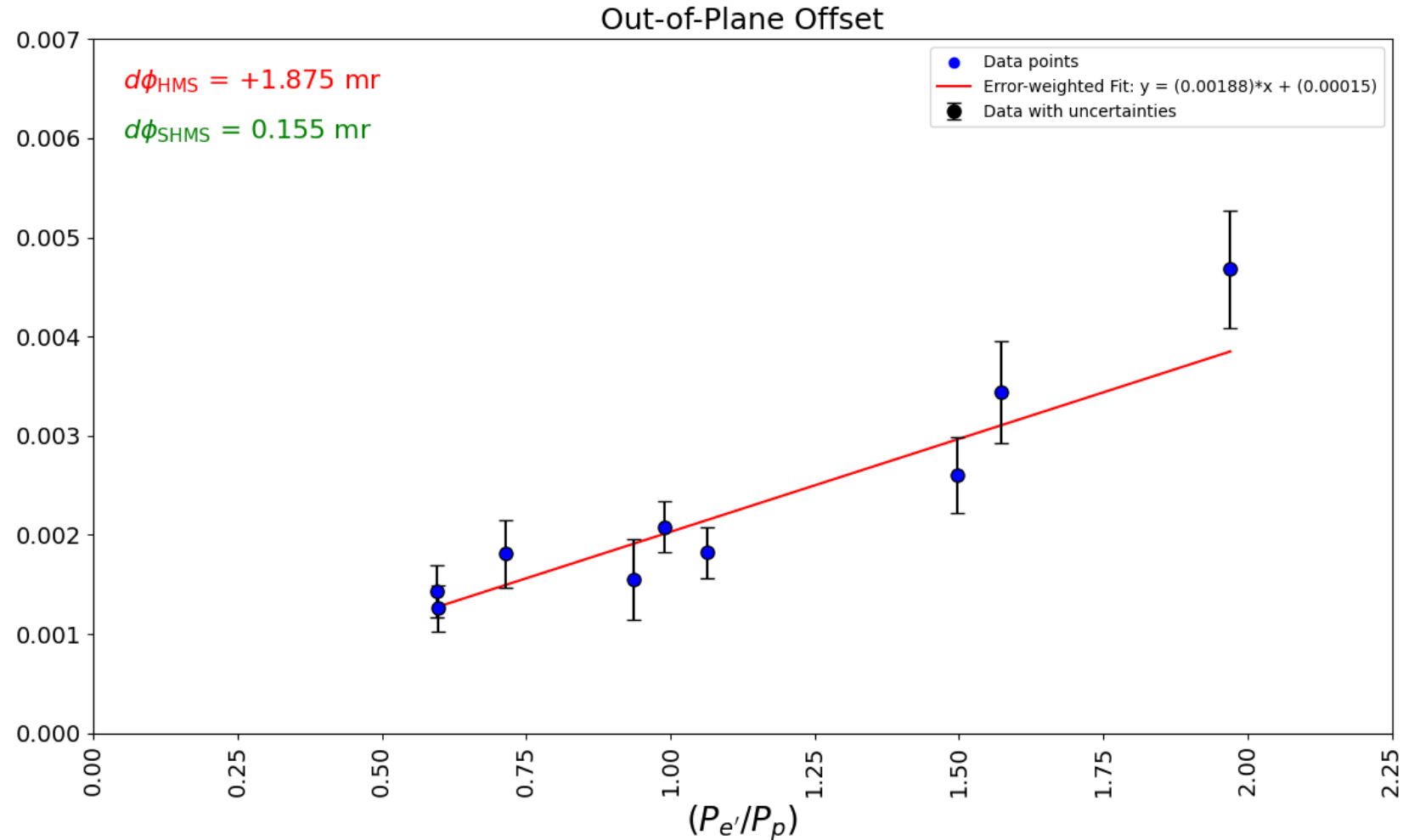
HMS

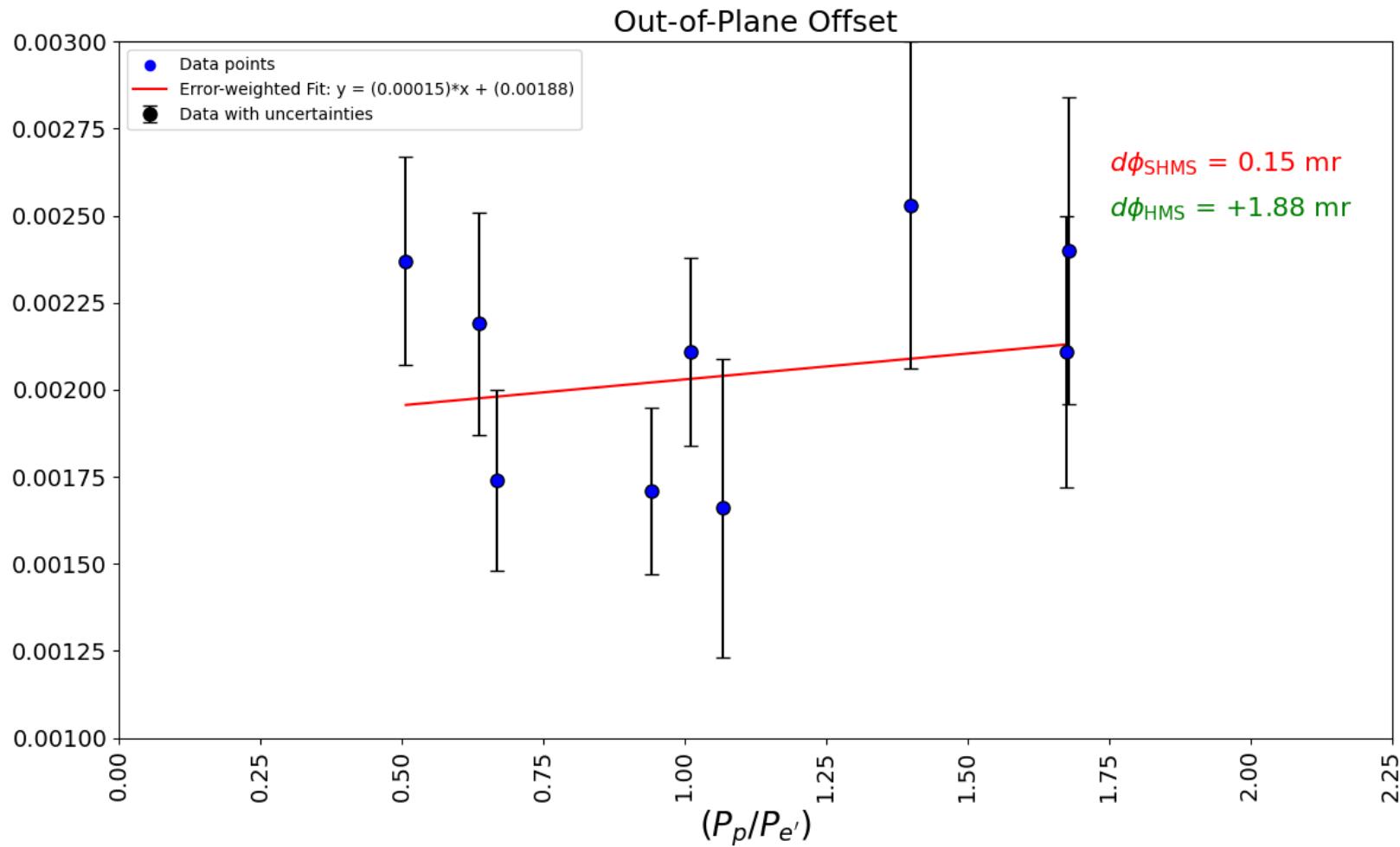
```
; Do not to change these values, since these are the zero order
; CMOP matrix elements. If you do change then your shms sieve
; plots will be screwed up.

; do not change pdelta_offset from zero, use ppcentral_offset
pdelta_offset = 0.0; (%) hdelta_tar = hdelta_tar + hdelta_offset
;
ptheta_offset = 0.0 ; (rad) hyp_tar = hyp_tar + htheta_offset
pphi_offset = -8.681269905E-4; (rad) hxp_tar = hxp_tar + hphi_offset
```

SHMS

- Calculated out-of-plane offsets.
- Got **+1.875mr** for HMS and **-0.155mr** for SHMS
- Previous offsets were **+1.90mr** for HMS and **-0.05mr** for SHMS





- Re-ran HeePCoin data to calculate offsets.
- Calculated out-of-plane offsets.

In progress:

- Work in progress for 5.6 GeV Optics files for High momentum settings – NPS Group.
- Work in progress for proton absorption correction – Alicia.
- Working on HeePCoin comparison plots
- Settings up scripts of Pass2 full replays
- Will setup things for physics yields and LTSep