# Pion-LT Meeting

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# HMS Optics Matrix



- Updated HMS optics matrix from NPS optics group.
- Updated zeroth order corrections offsets (theta and phi).
- NPS group still working on detla optimization.
- They finalized optics matrix for 5.9, 6.1, 6.7 GeV.
- Still finalizing optics matrix for 5.6 GeV.
- Will Test Nathan's new boiling factor and new calculation for live time calculation.
- Running HeeP data for offsets calculation again.
- Will push new changes to GitHub soon.

| 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 | | |

# HMS Optics Matrix



- **HMS optics matrix param files (low momentum)**
- Currently, phi_offset for both spectrometer is set to 0 (kaonlt and pionlt)
- Looked at old files. Which offsets are correct?

```
    ; 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
```

```
; 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.
;
```