



Kaon LT Status Update

May 11th, 2023

Richard Trotta

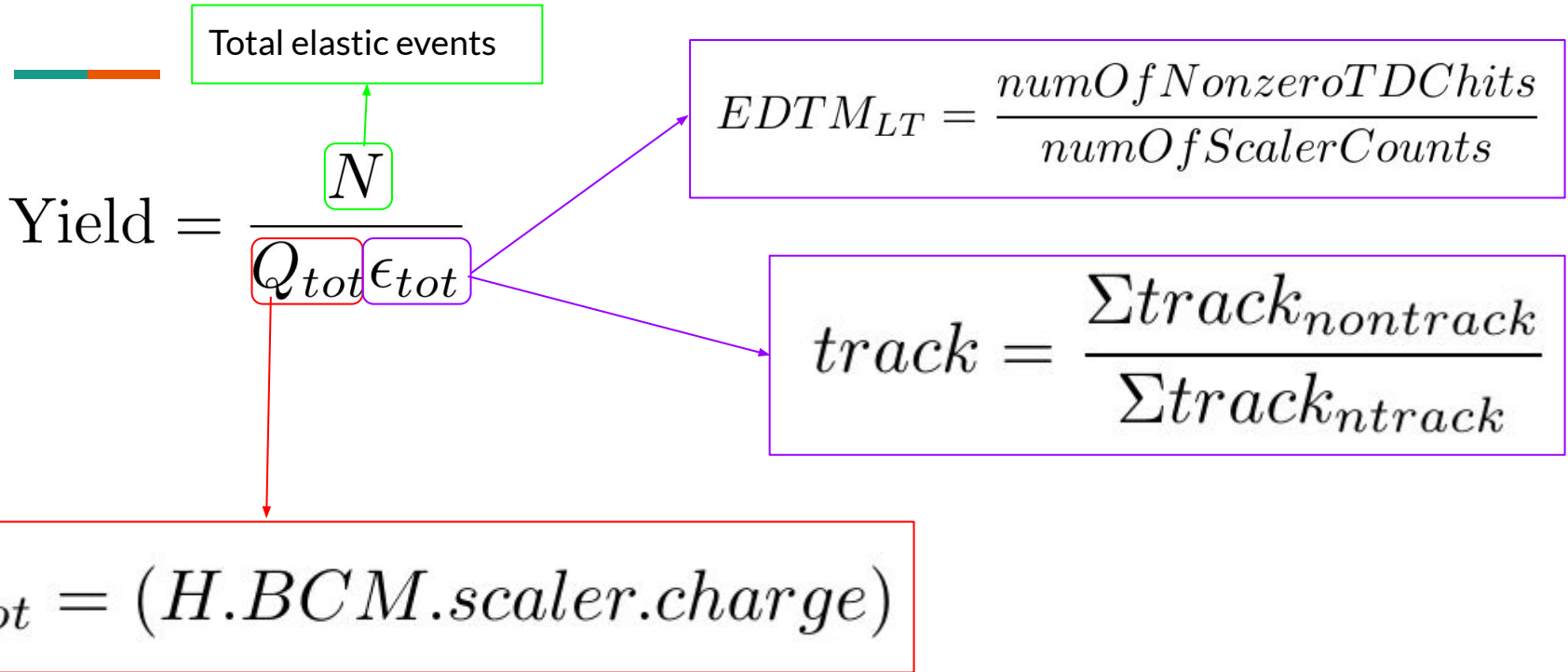
Scaler Yield Calculation

$$N_{scaler} = \Sigma(trigscaler) - EDTM_{scaler}$$

$$Y_{scaler} = \frac{N_{scaler}}{Q_{tot}}$$

$$Q_{tot} = (H.BCM.scaler.charge)$$

Yield Calculation



Lumi Cuts



- tdcTimeRaw cuts on pTrigs and EDTM
- Evttype cuts (HMS Evttype==2, SHMS Evttype==1)
- $\text{abs}(\text{current} - \text{setcurrent}) < 2.5$

SHMS (pion)

- $P_{\text{hgcer_npeSum}} > 1.5$
- $P_{\text{aero_npeSum}} > 1.5$
- $P_{\text{cal_etottracknorm}} < 0.3$

SHMS (electron)

- $P_{\text{hgcer_npeSum}} > 0.5$
- $P_{\text{aero_npeSum}} > 2.0$
- $P_{\text{cal_etotnorm}} > 0.8$

HMS (electron)

- $H_{\text{cer_npeSum}} > 6.0$
- $H_{\text{cal_etottracknorm}} > 0.6$

Track Lumi Cuts



- tdcTimeRaw cuts on pTrigs and EDTM
- Evttype cuts (HMS Evttype==2, SHMS Evttype==1)
- $\text{abs}(\text{current}-\text{setcurrent}) < 2.5$
- $(P)H_{\text{goodscinhits}} == 1$
- $\text{abs}(P_{\text{gtr_beta}}-1) > 0.3$

SHMS (pion)

- $P_{\text{hgcer_npeSum}} > 1.5$
- $P_{\text{aero_npeSum}} > 1.5$
- $P_{\text{cal_etottracknorm}} < 0.3$

SHMS (electron)

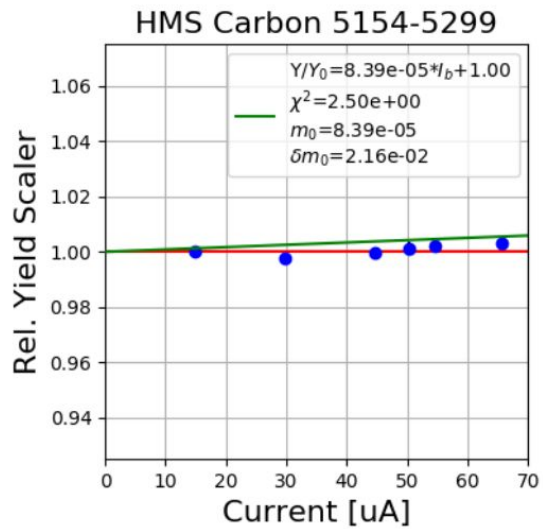
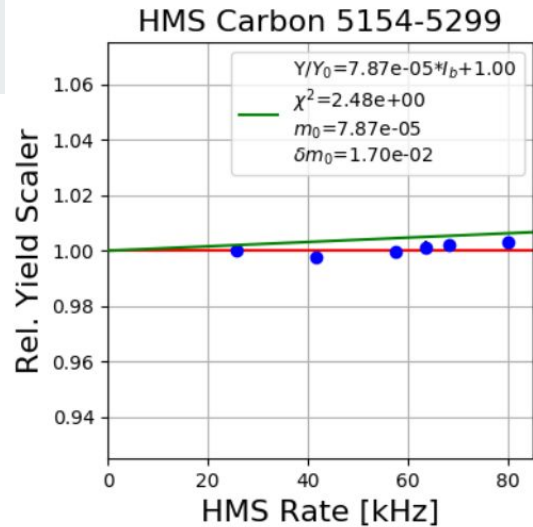
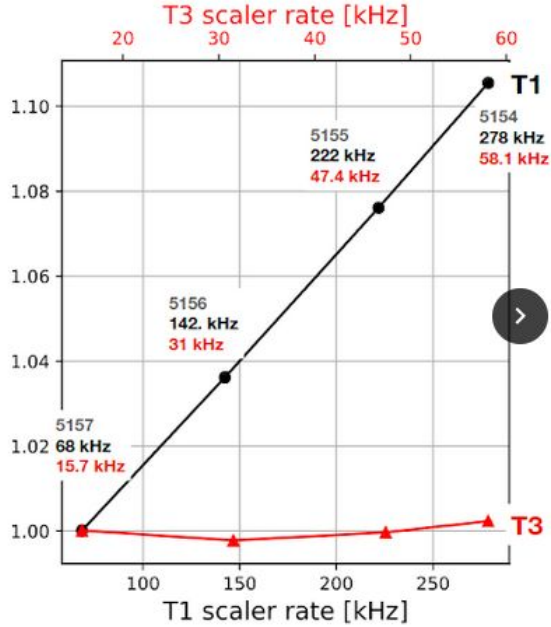
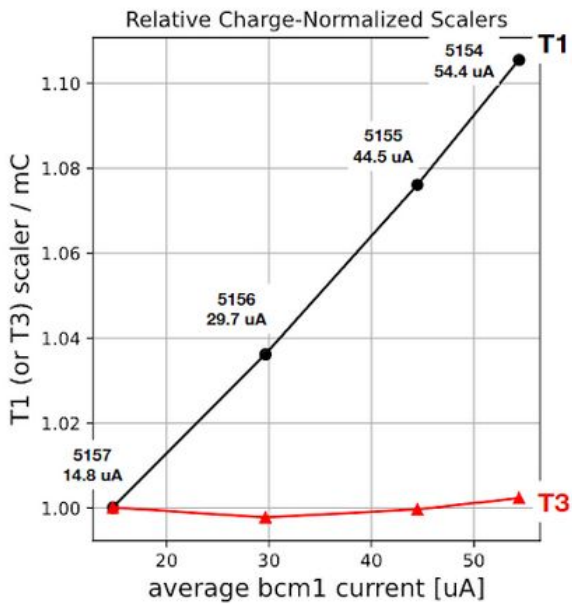
- $P_{\text{hgcer_npeSum}} > 0.5$
- $P_{\text{aero_npeSum}} > 2.0$
- $P_{\text{cal_etotnorm}} > 0.8$

HMS (electron)

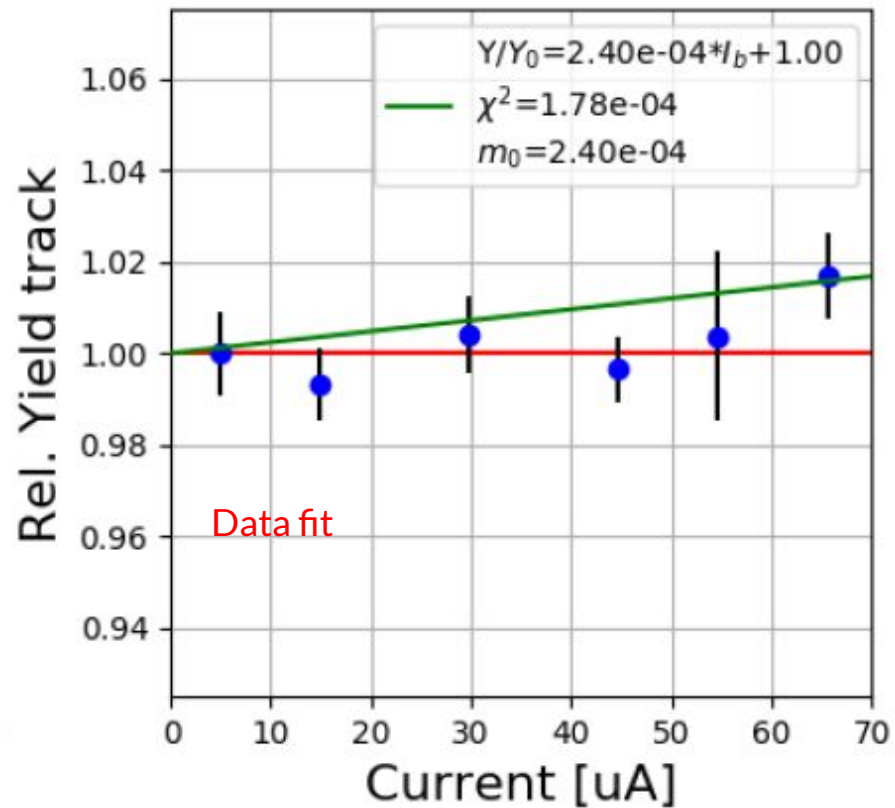
- $H_{\text{cer_npeSum}} > 6.0$
- $H_{\text{cal_etottracknorm}} > 0.6$

10.6 Lumi Run #1

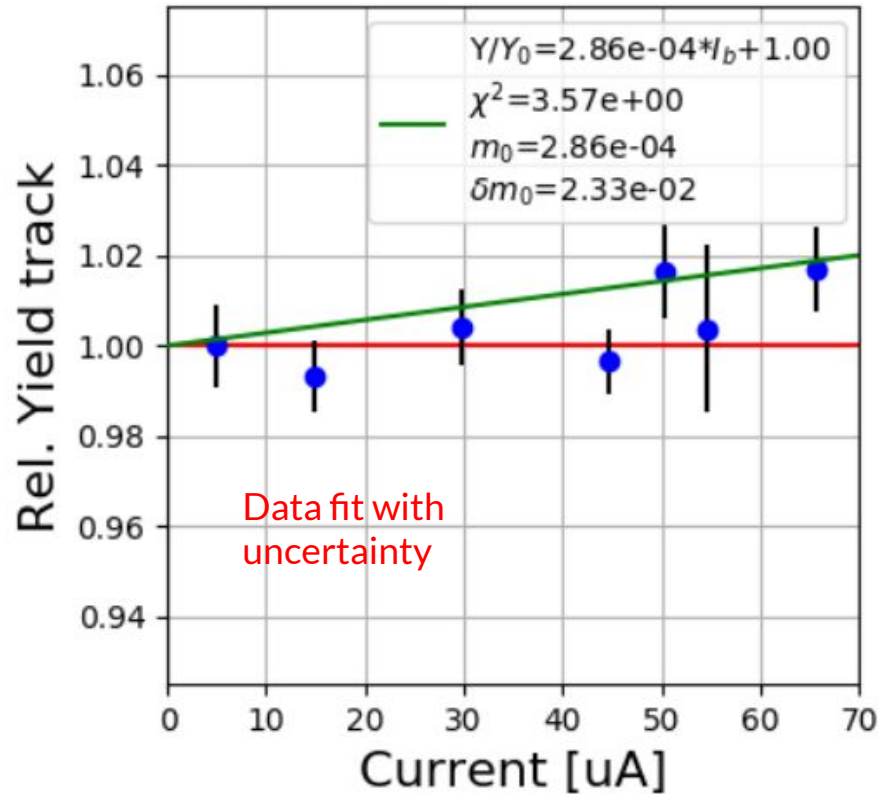
- $P_{SHMS} = +6.842$, $\Theta_{SHMS} = 6.495$
- $P_{HMS} = -3.266$, $\Theta_{HMS} = 12.530$



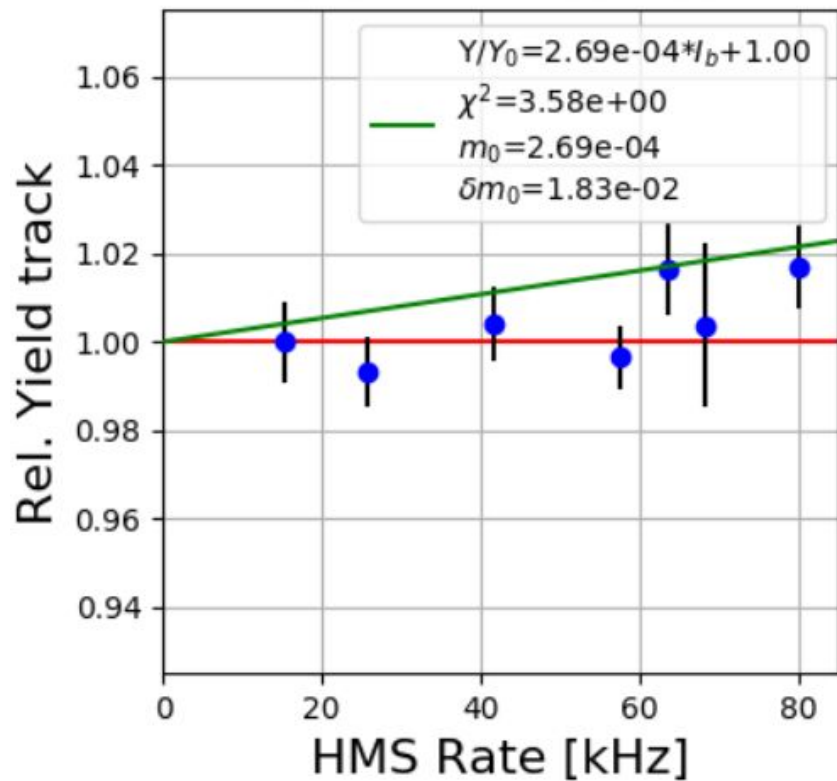
HMS Carbon 5154-5298



HMS Carbon 5154-5299



HMS Carbon 5154-5299

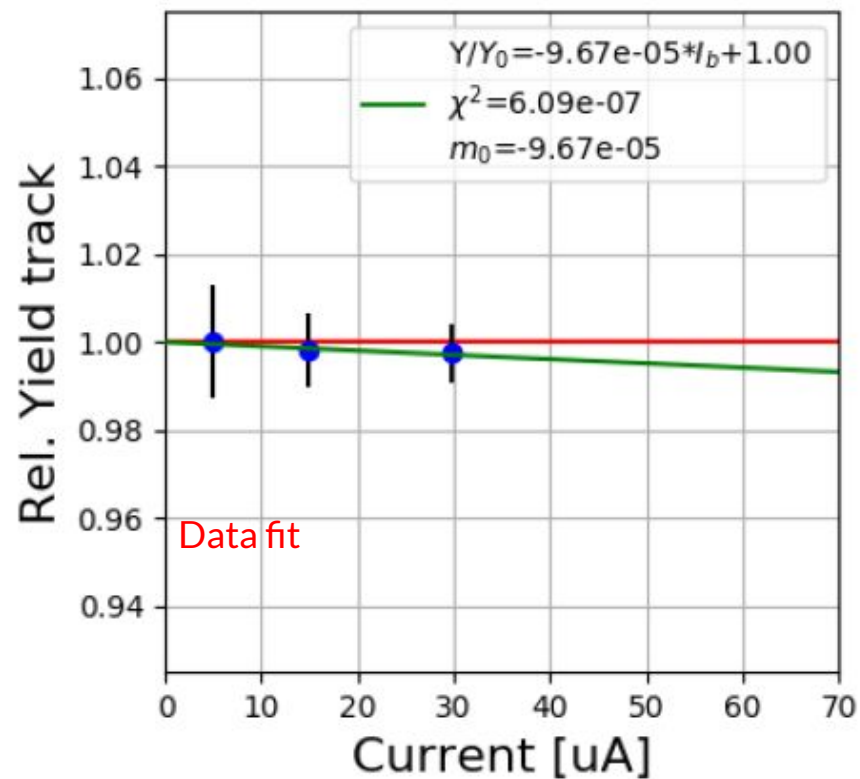


10.6 Lumi Run #2

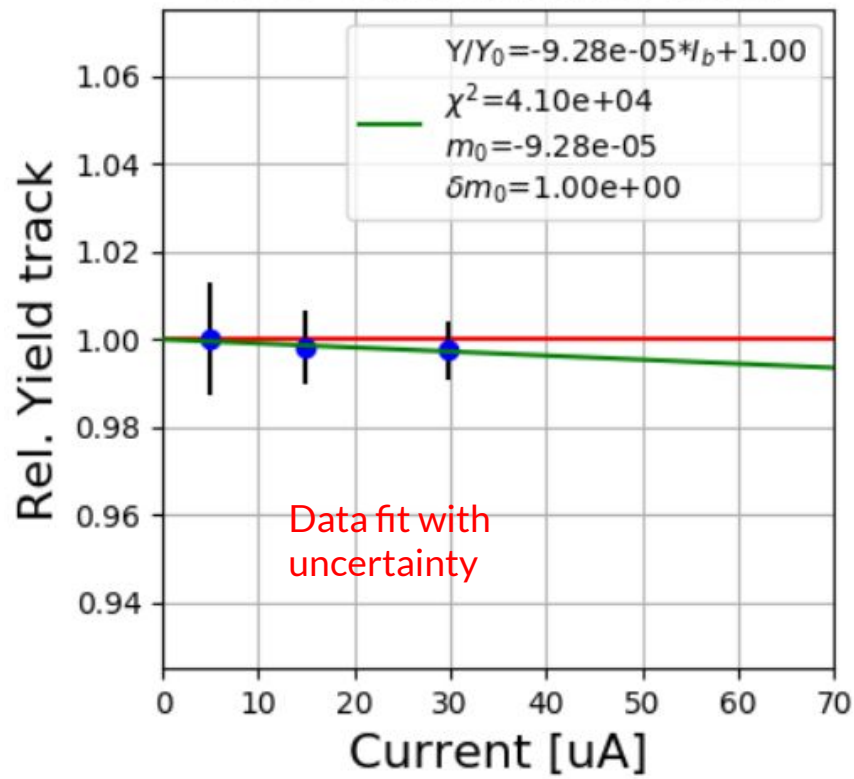


- $P_{SHMS} = +6.053$, $\Theta_{SHMS} = 6.495$
- $P_{HMS} = -4.204$, $\Theta_{HMS} = 14.930$

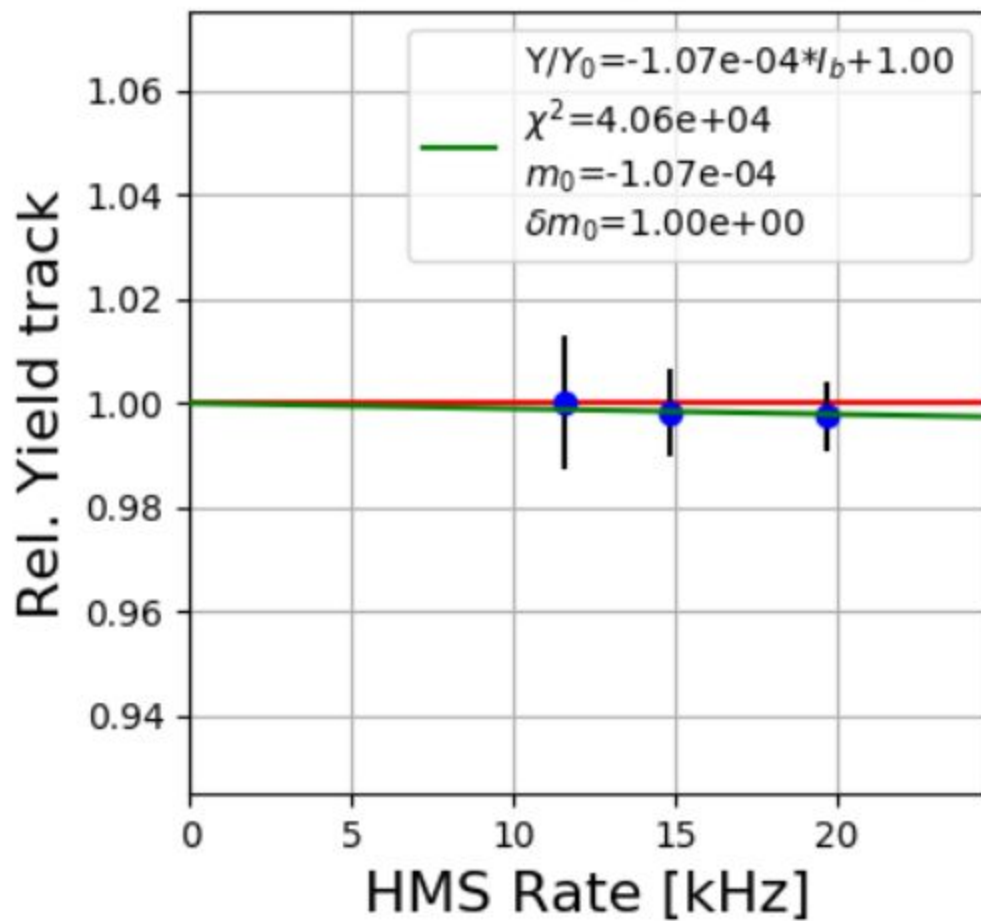
HMS Carbon 5178-5181



HMS Carbon 5178-5181



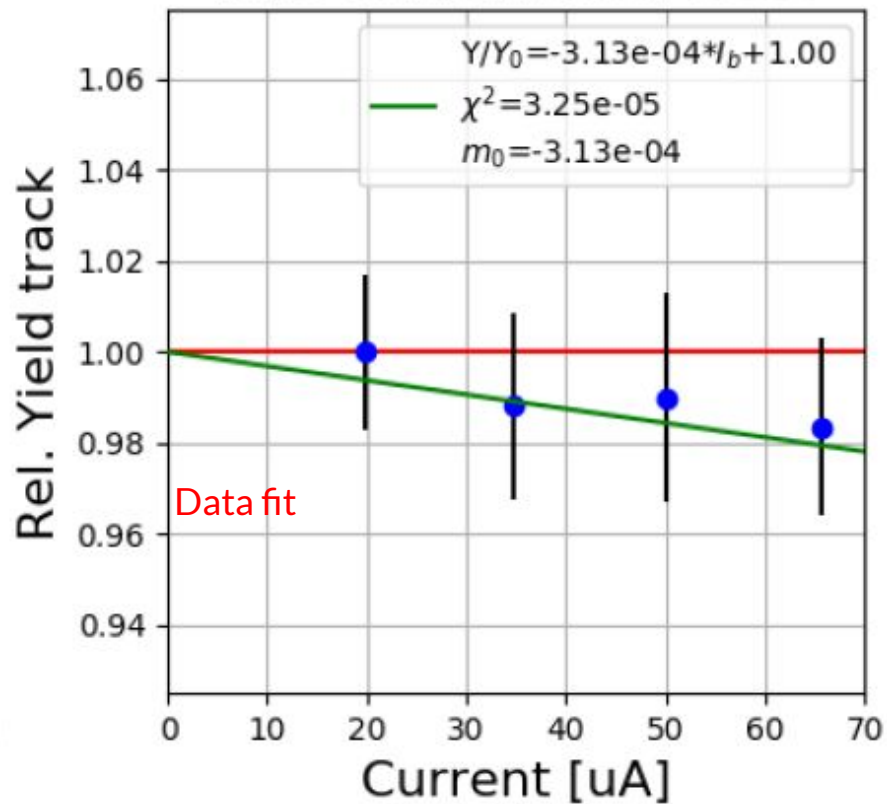
HMS Carbon 5178-5181



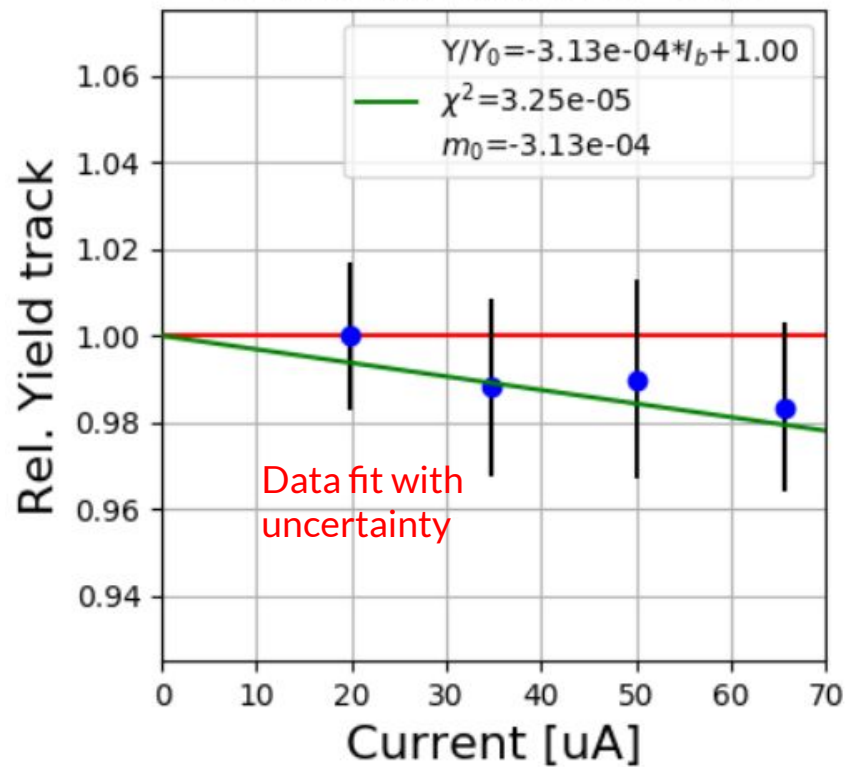
10.6 Lumi Run #3

- $P_{SHMS} = -6.269$, $\Theta_{SHMS} = 13.500$
- $P_{HMS} = -3.09$, $\Theta_{SHMS} = 35.010$

HMS Carbon 5351-5358



HMS Carbon 5351-5358



HMS Carbon 5351-5358

