



Kaon LT Status Update

March 23rd, 2023

Richard Trotta

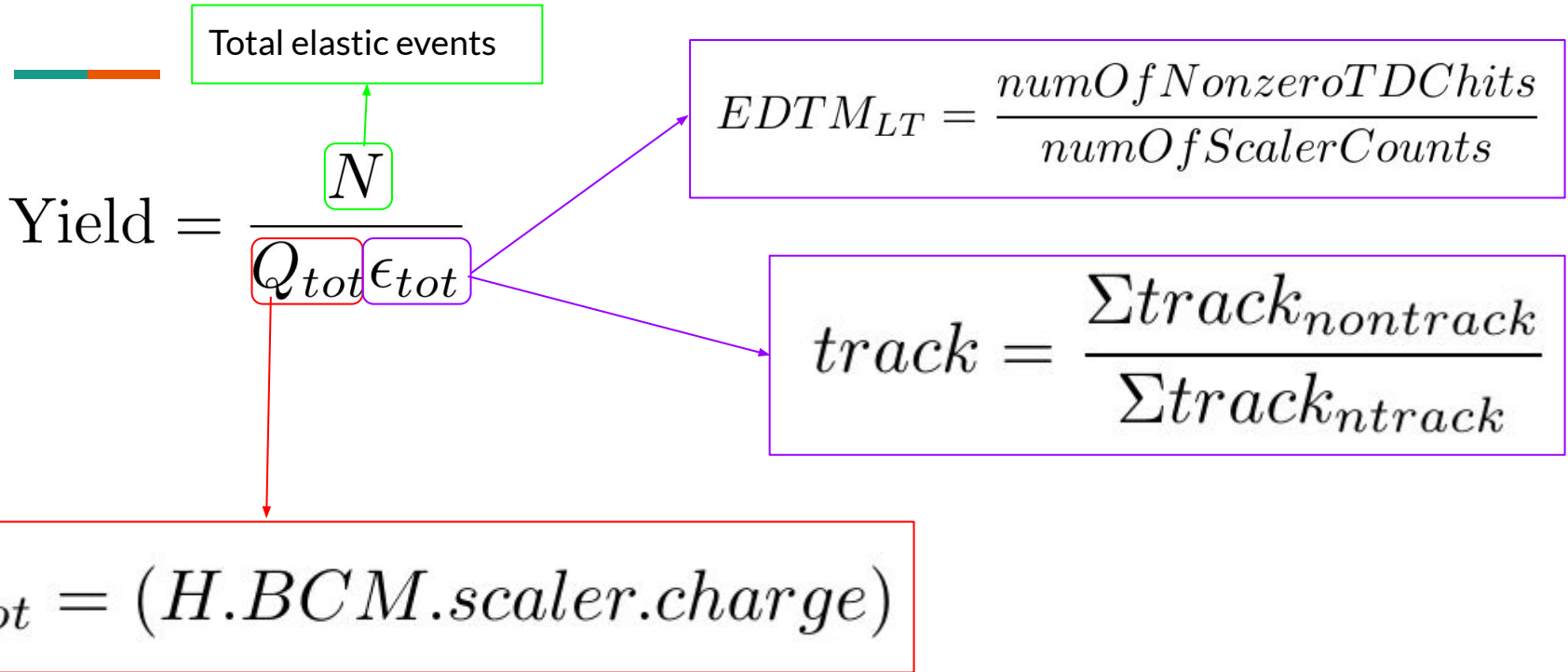
Scaler Yield Calculation

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

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

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

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)

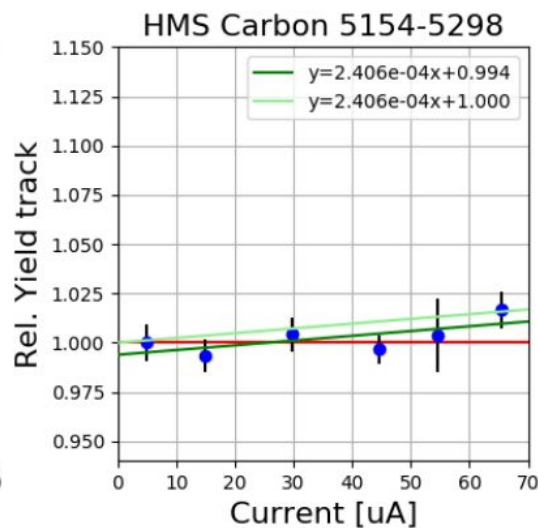
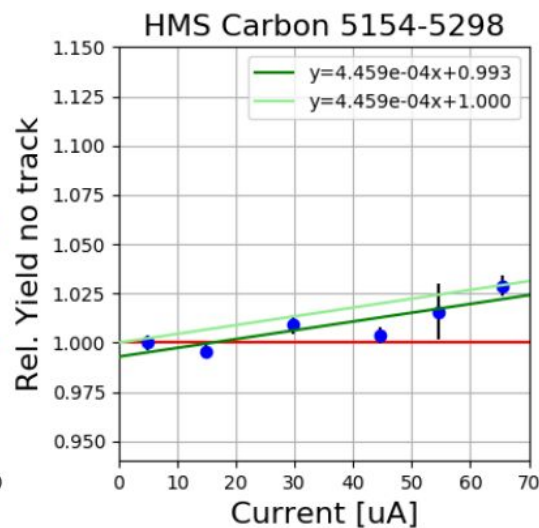
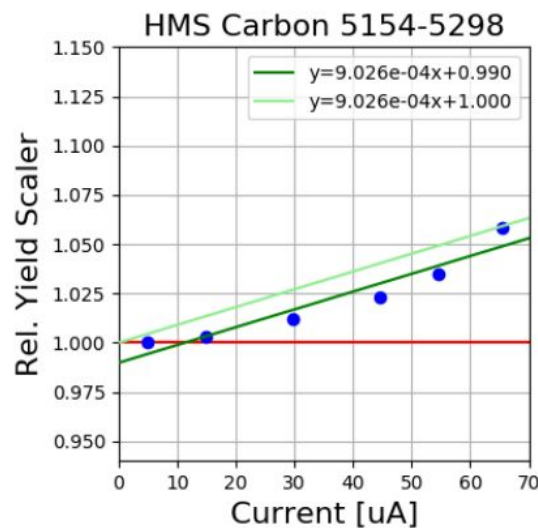
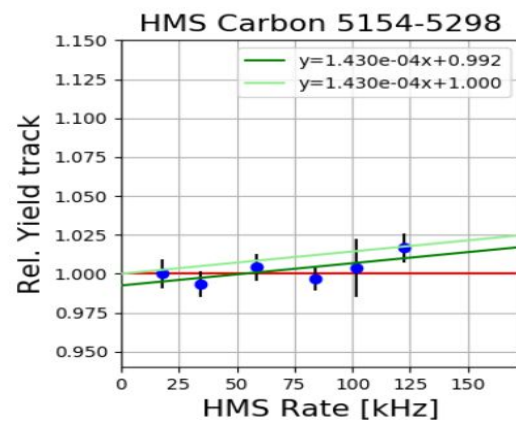
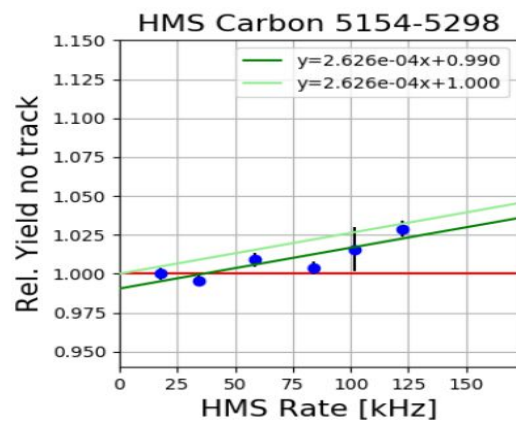
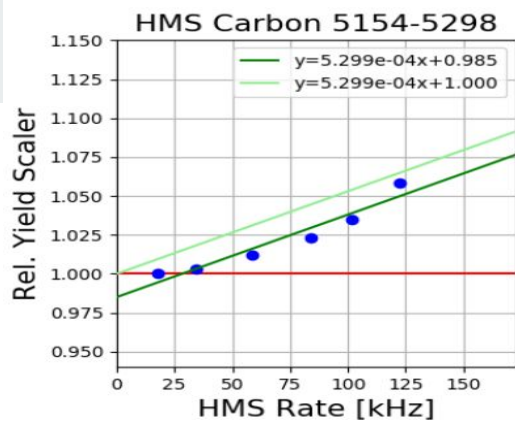
- $P_{\text{hgcer_npeSum}} > 0.5$
- $P_{\text{aero_npeSum}} > 2.0$
- $P_{\text{cal_etotnorm}} > 0.8$

HMS (electron)

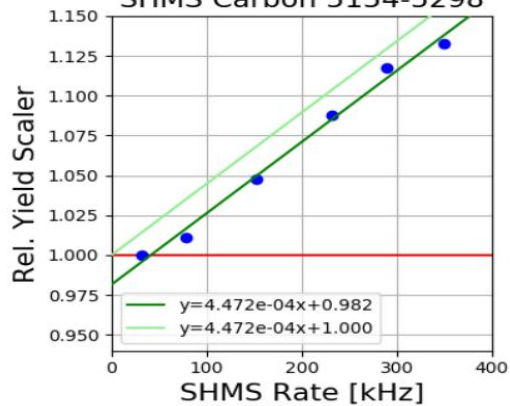
- $H_{\text{cer_npeSum}} > 6.0$
- $H_{\text{cal_etottracknorm}} > 0.6$

10.6 Lumi Run #1

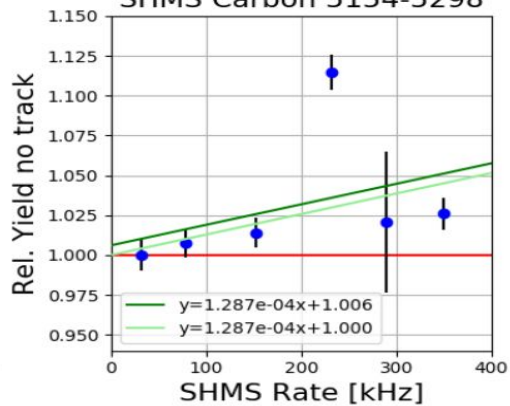
- Run Numbers: 5154, 5155, 5156, 5157, 5158, 5298, 5299
- Current: 50, 45, 30, 15, 5, 65, 50
- P_SHMS = +6.842, Theta_SHMS = 6.495
- P_HMS = -3.266, Theta_HMS = 12.530



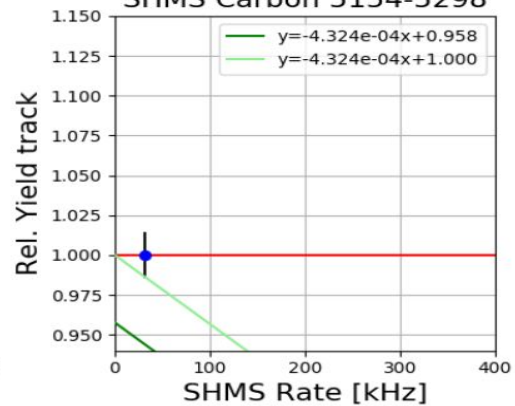
SHMS Carbon 5154-5298



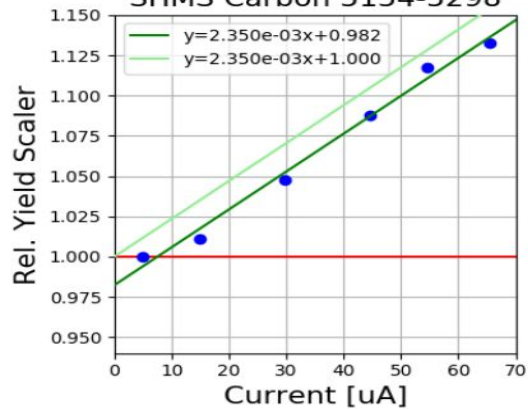
SHMS Carbon 5154-5298



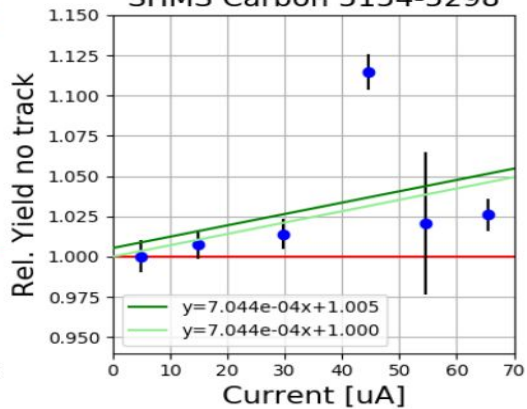
SHMS Carbon 5154-5298



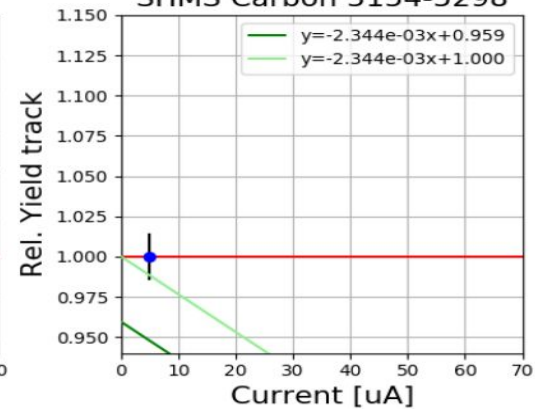
SHMS Carbon 5154-5298



SHMS Carbon 5154-5298



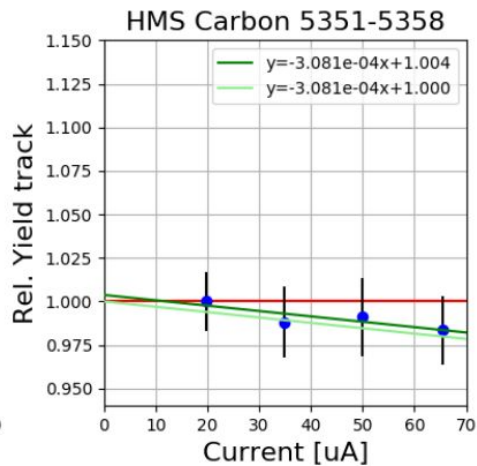
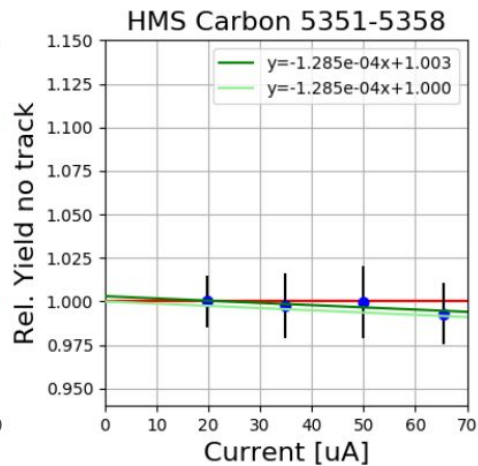
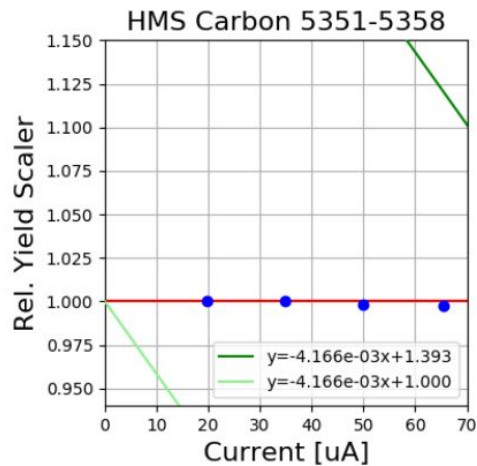
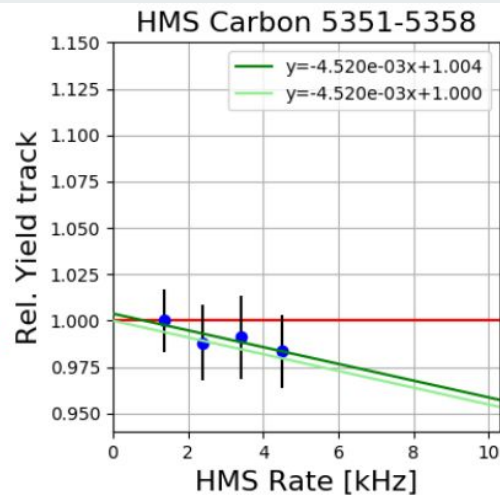
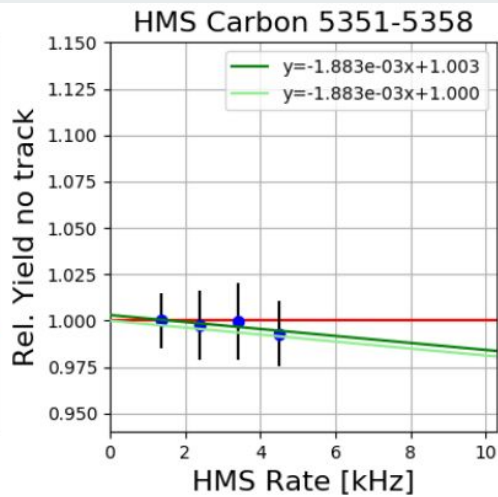
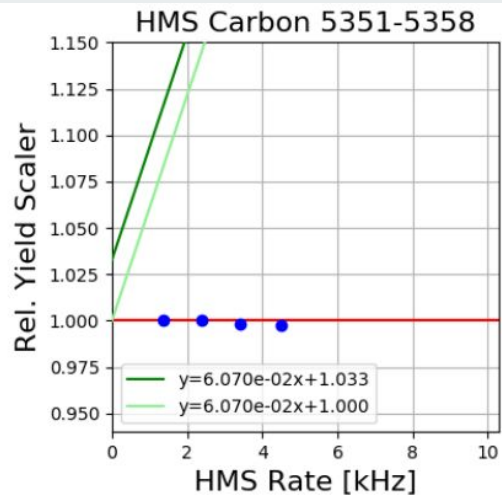
SHMS Carbon 5154-5298

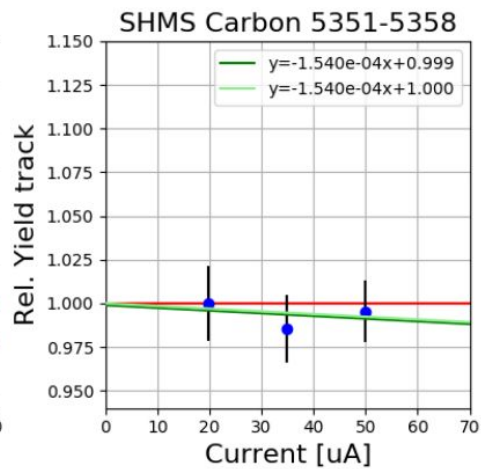
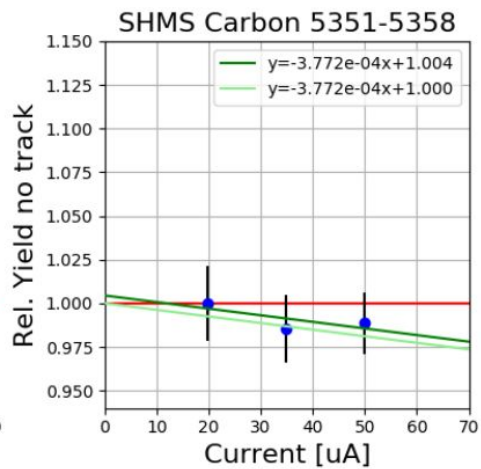
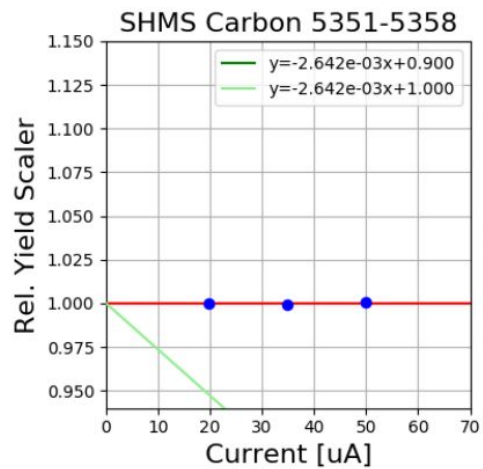
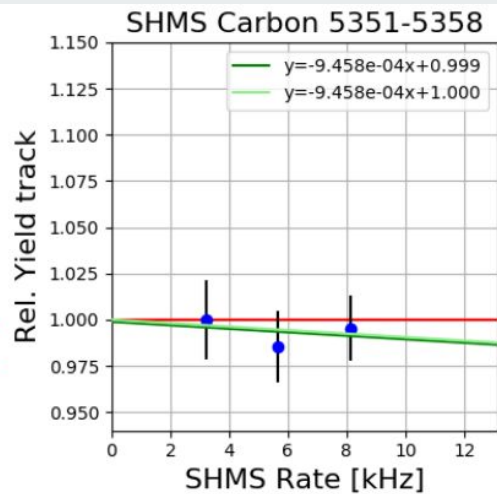
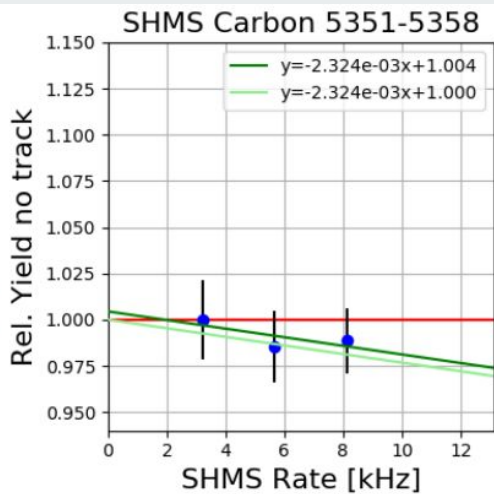
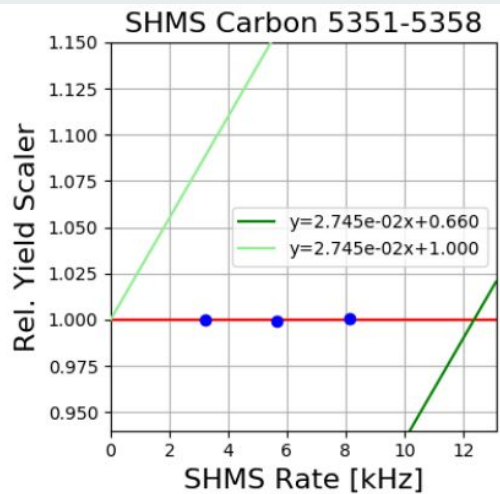


10.6 Lumi Run #3



- Run Numbers: 5351, 5352, 5353, 5355, 5356, 5357, 5358
- Current: 20, 35, 50, 65, 50, 35, 20
- P_SHMS = -6.269, Theta_SHMS = 13.500
- P_HMS = -3.09, Theta_SHMS = 35.010





extra



10.6 Lumi Run #2



- Run Numbers: 5175, 5176, 5178, 5179, 5181, 5300, 5301
- Current: 55, 45, 30, 15, 5, 50, 65
- $P_SHMS = +6.053$, $\Theta_SHMS = 6.495$
- $P_HMS = -4.204$, $\Theta_SHMS = 14.930$

