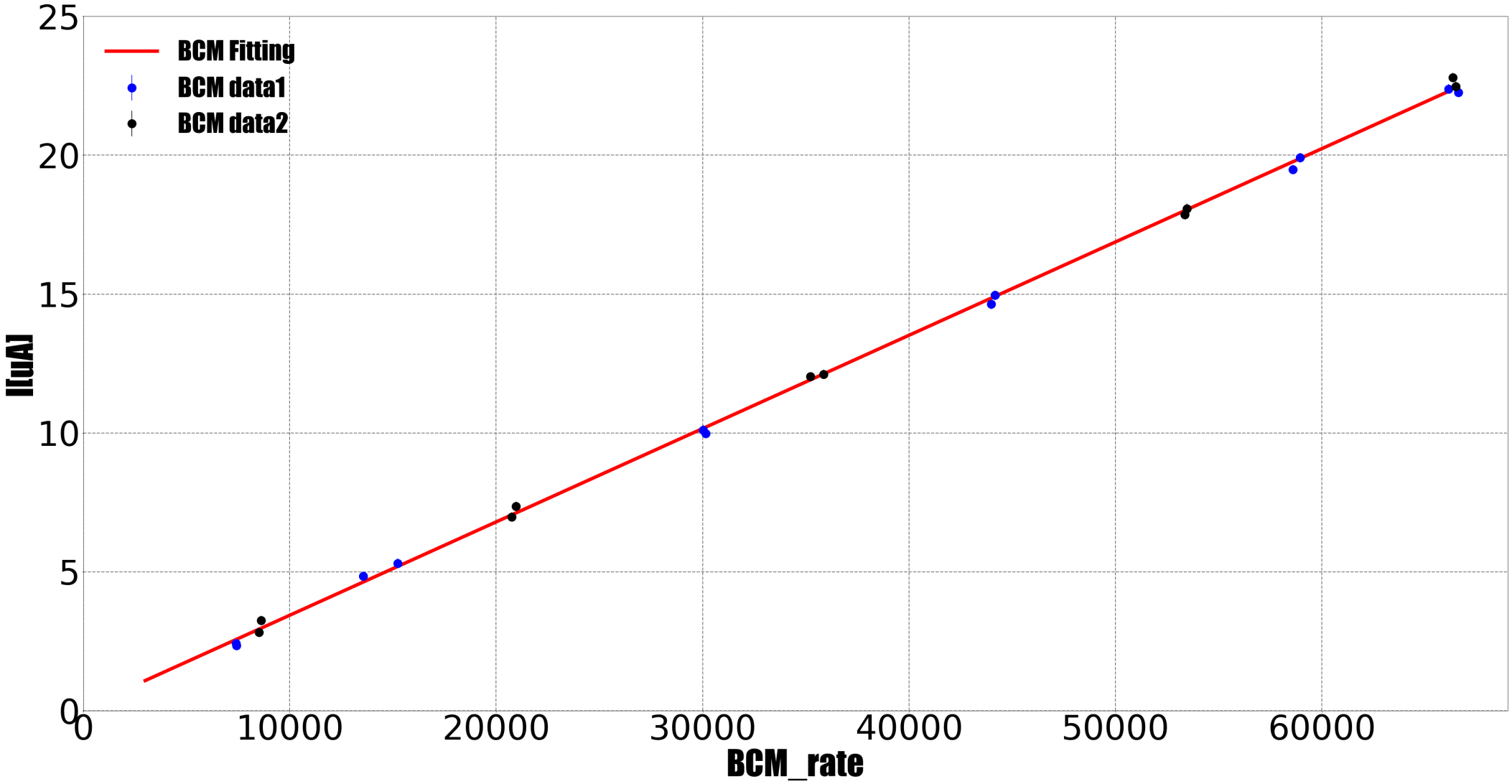
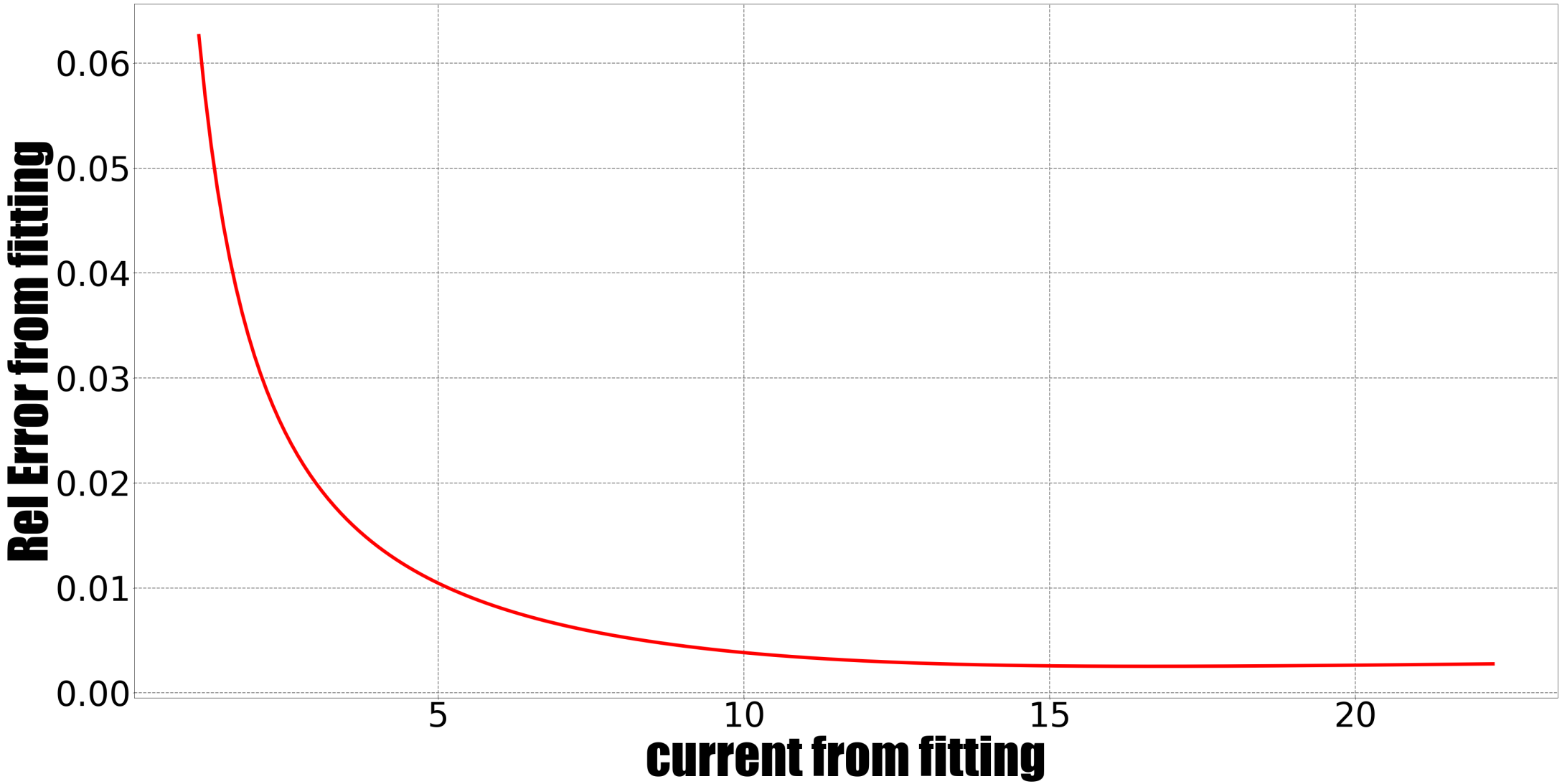
Some Update and Questions

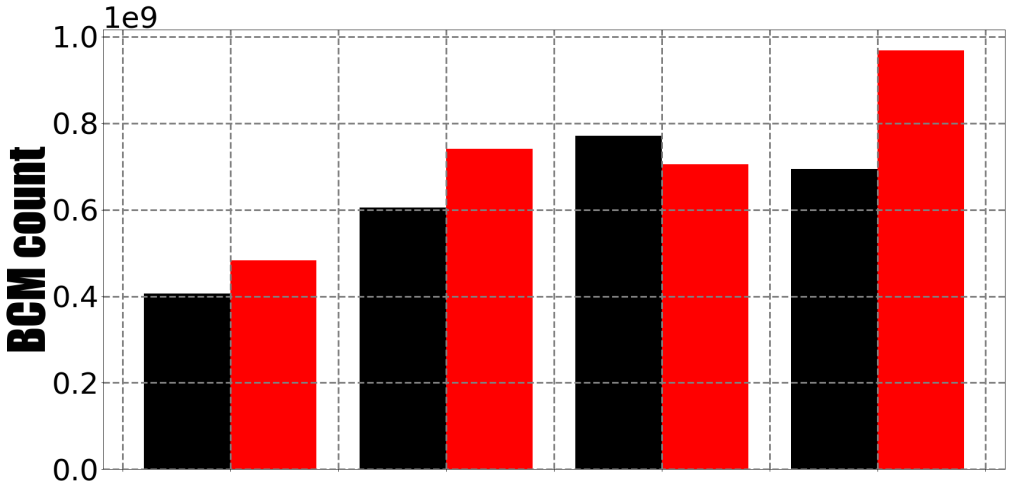
Tong Su

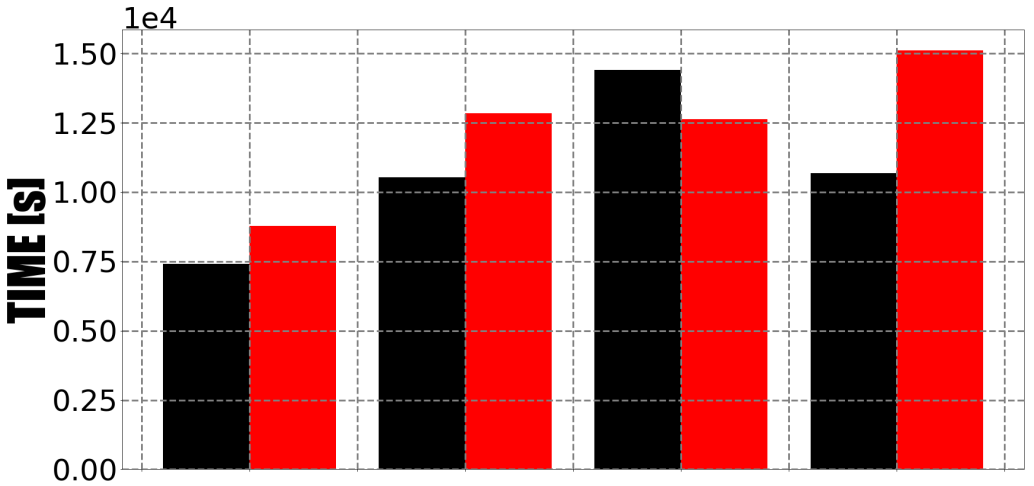
2018/08/30

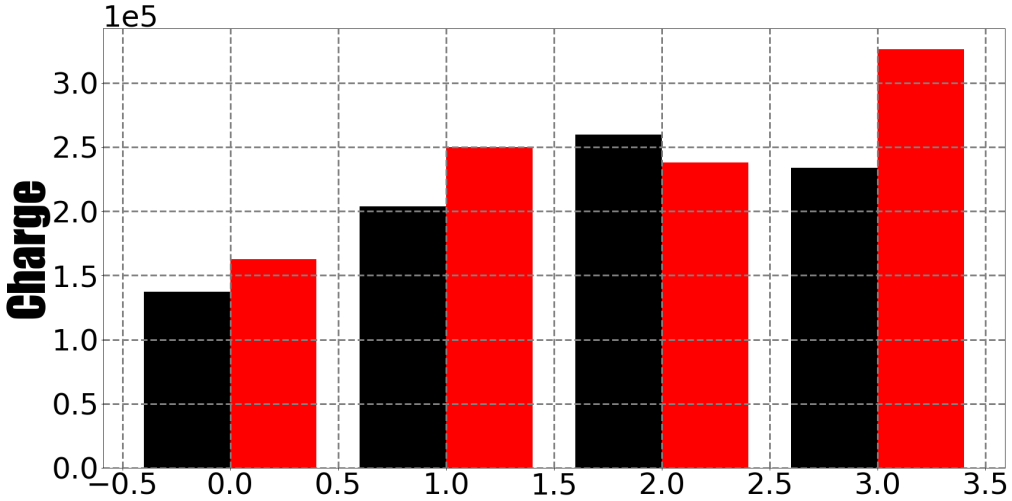
2 Set of BCM Calibration Data form Mike

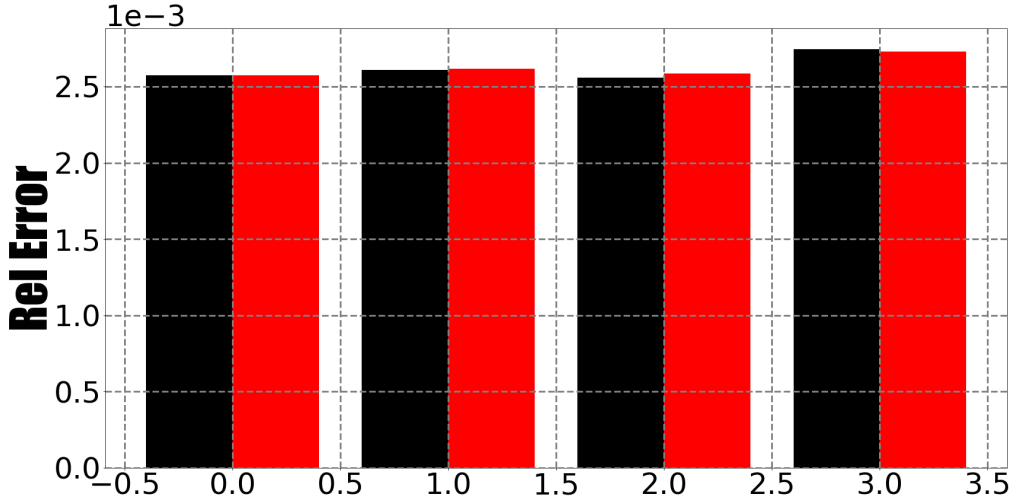



Rel Error from fitting
0.06
0.05
0.04
0.03
0.02
0.01
0.00
5
10
15
20
current from fitting

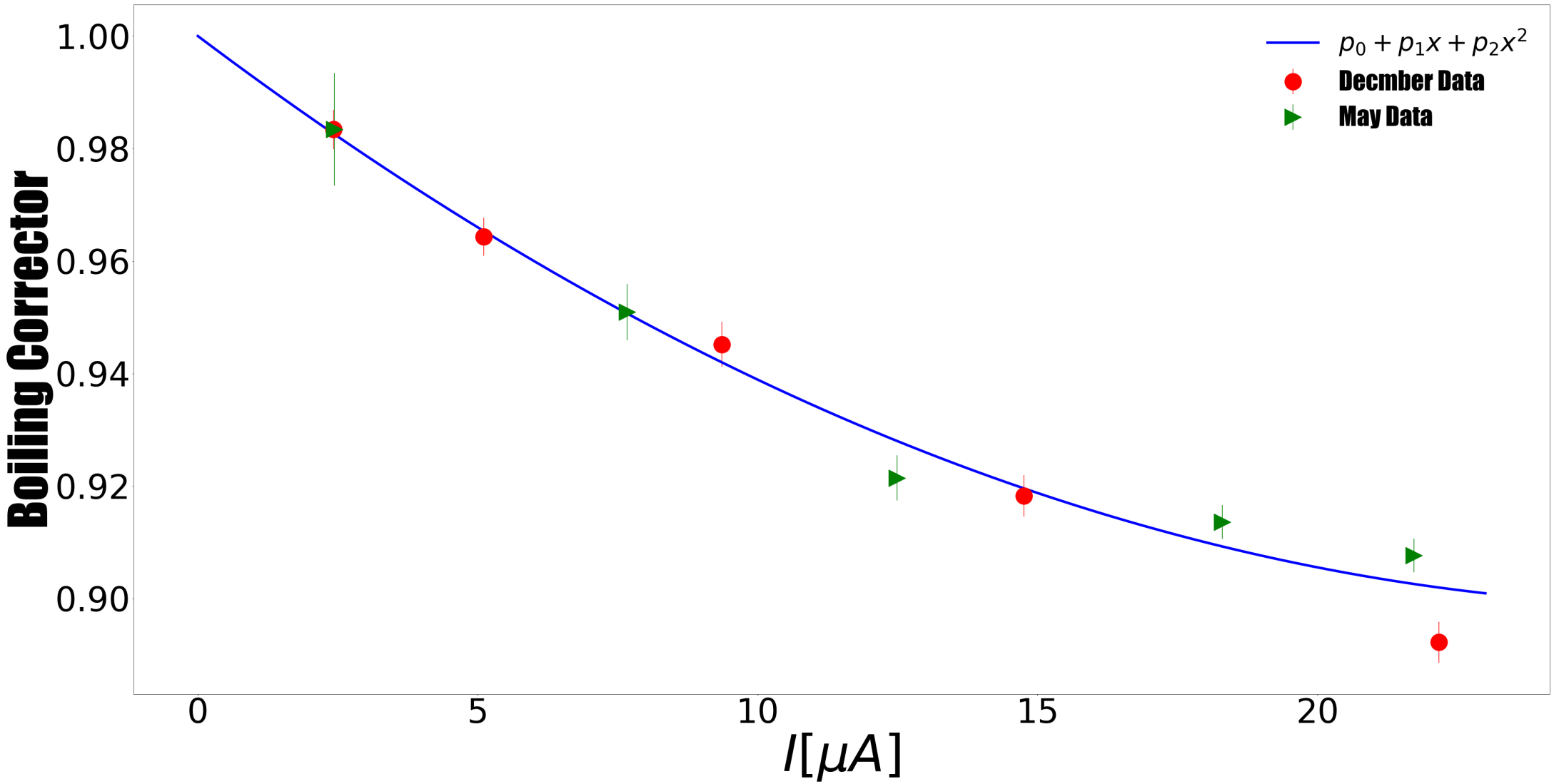

1e9
BCM count
1.0
0.8
0.6
0.4
0.2
0.0


1e4
TIME [s]
1.50
1.25
1.00
0.75
0.50
0.25
0.00

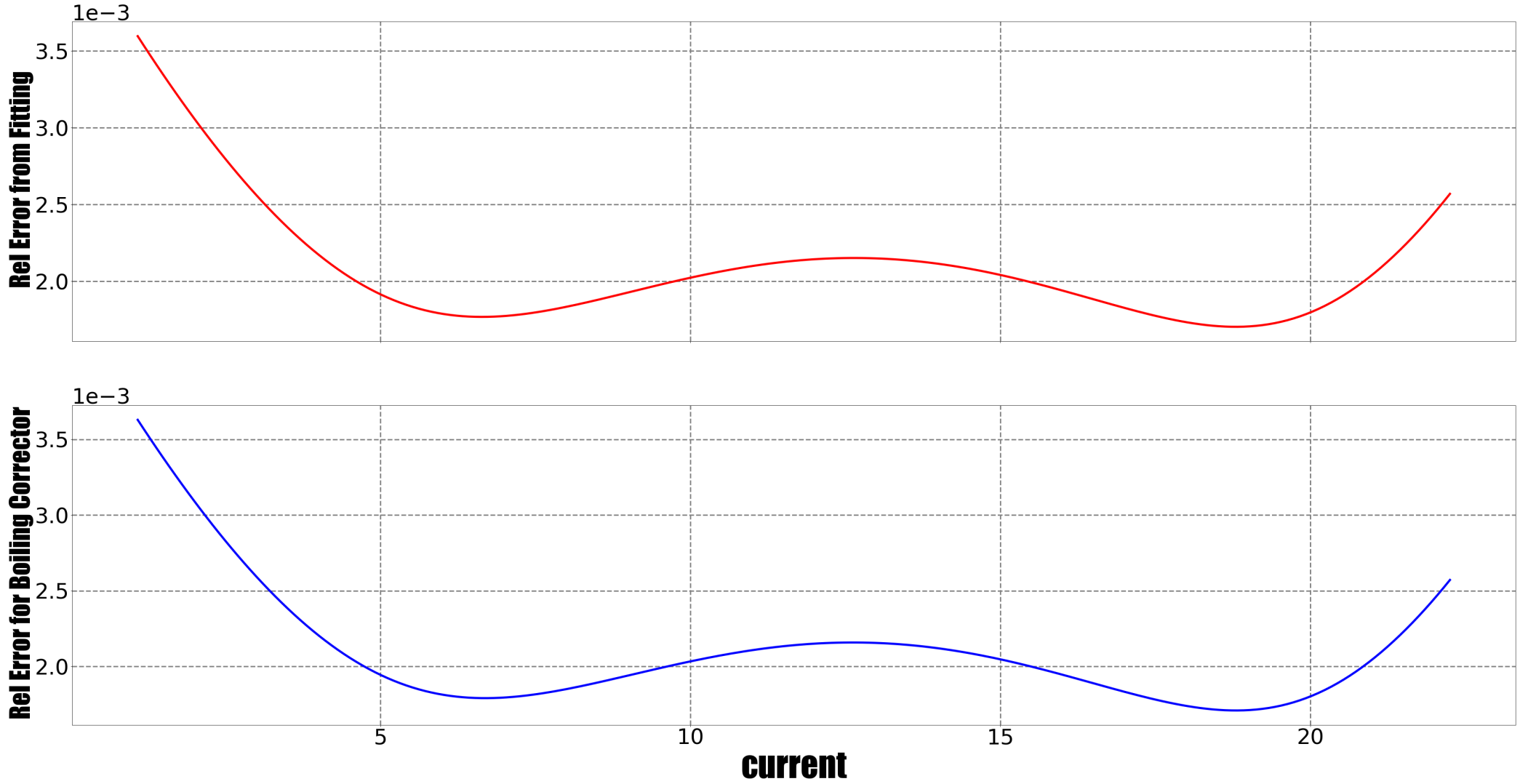

1e5
Charge
3.0
2.5
2.0
1.5
1.0
0.5
0.0
−0.5
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3.5


1e−3
Rel Error
2.5
2.0
1.5
1.0
0.5
0.0
−0.5
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3.5

KIN

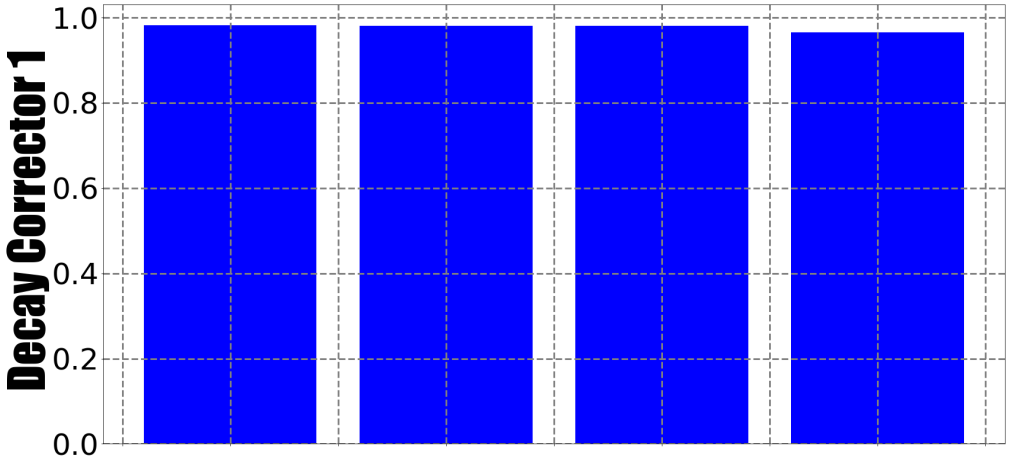

Boiling Corrector
1.00
0.98
0.96
0.94
0.92
0.90
0
5
10
15
20
$I[\mu A]$
$p_0 + p_1 x + p_2 x^2$
Decmber Data
May Data

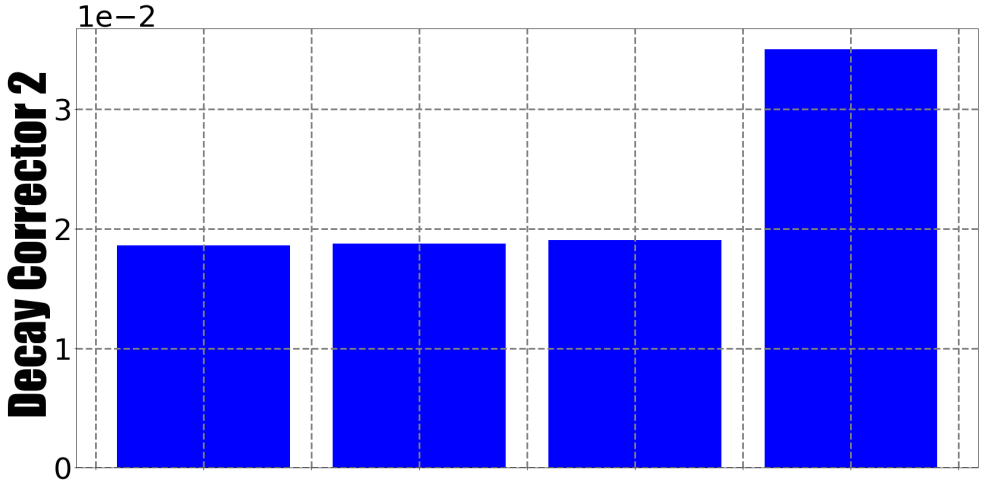
All the study are very very Preliminary Will Check with Nathaly's result later

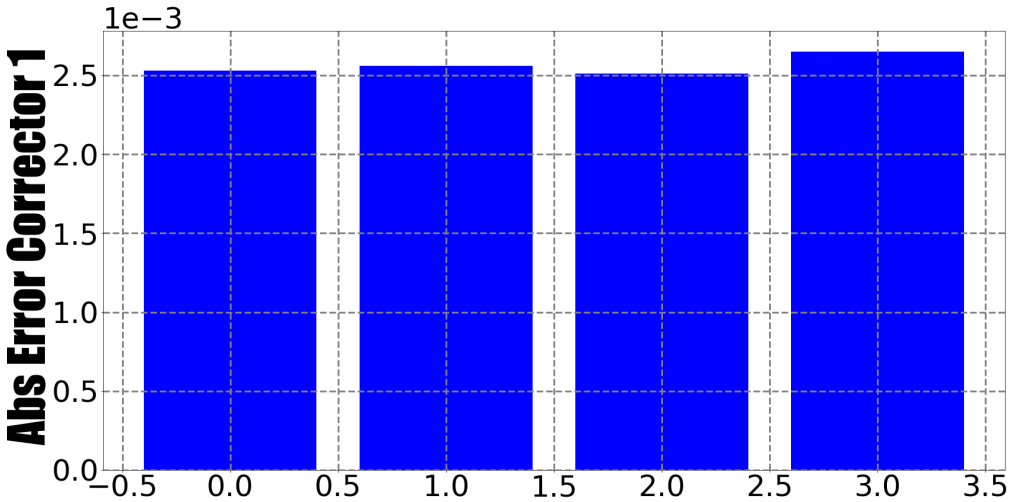


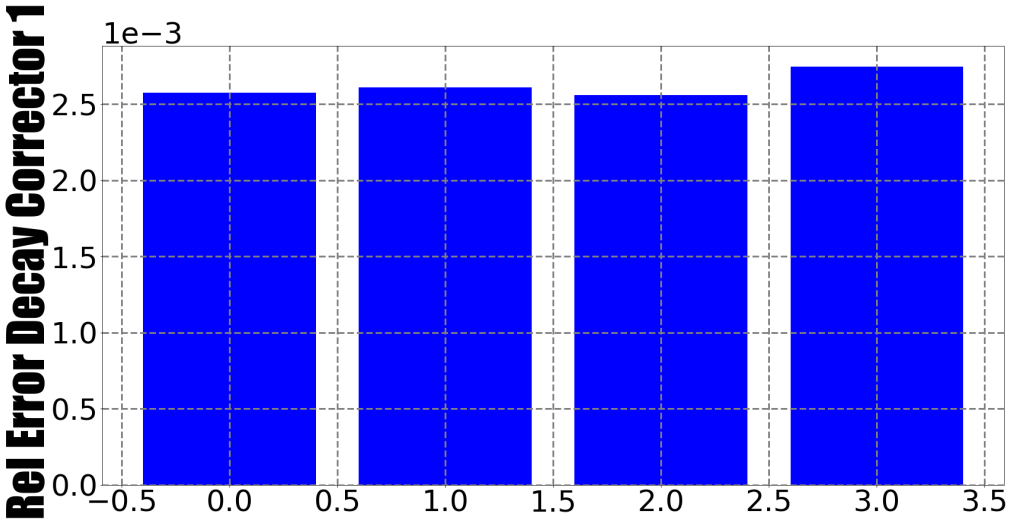
According to Tyler Kutz Study

- $\frac{Y_{H3-target}}{Y_{He3}} = \frac{Y_{H3}}{Y_{He3}} * \frac{\sum charge*\beta}{CHARGE} + \frac{\sum(1-\beta)*charge}{CHARGE}$
- $corr1 = \frac{\sum charge*\beta}{CHARGE}$ $\quad$ $corr2 = \frac{\sum(1-\beta)*charge}{CHARGE}$
- **Error from c/beta is around 10^-4**


Decay Corrector 1
1.0
0.8
0.6
0.4
0.2
0.0


1e−2
Decay Corrector 2
3
2
1
0

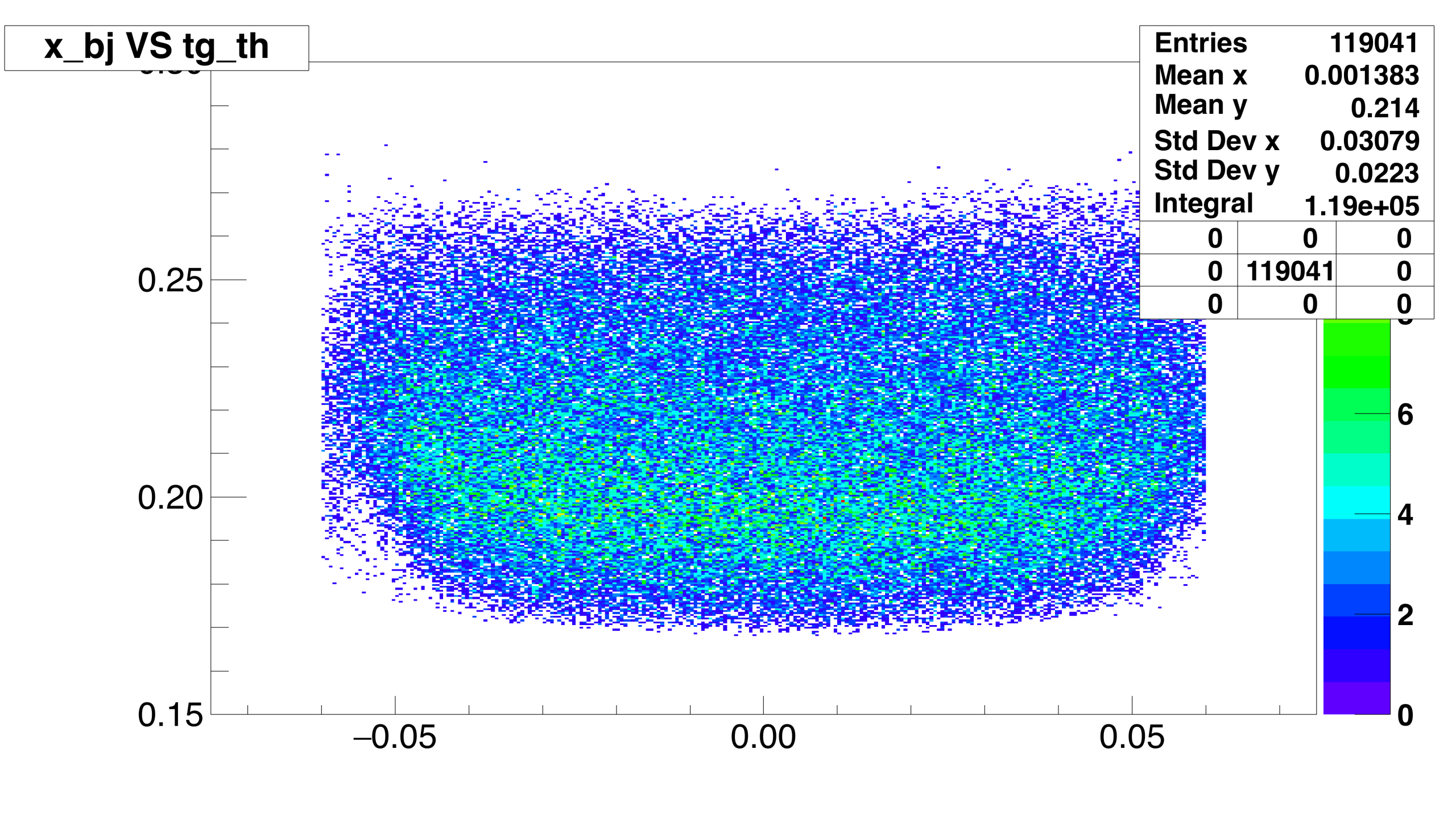

1e−3
Abs Error Corrector 1
2.5
2.0
1.5
1.0
0.5
0.0
−0.5
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3.5

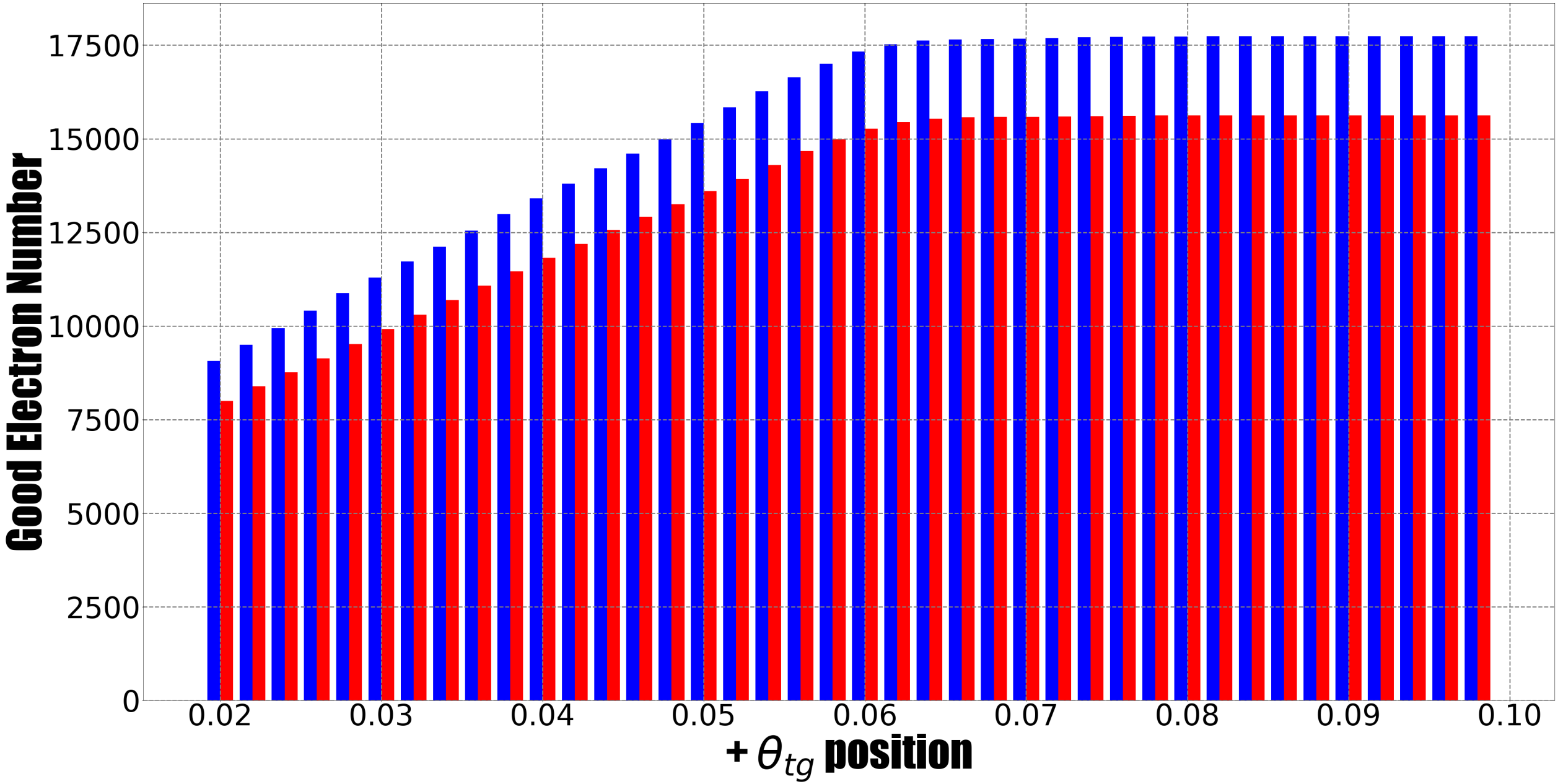

1e−3
Rel Error Decay Corrector 1
2.5
2.0
1.5
1.0
0.5
0.0
−0.5
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3.5

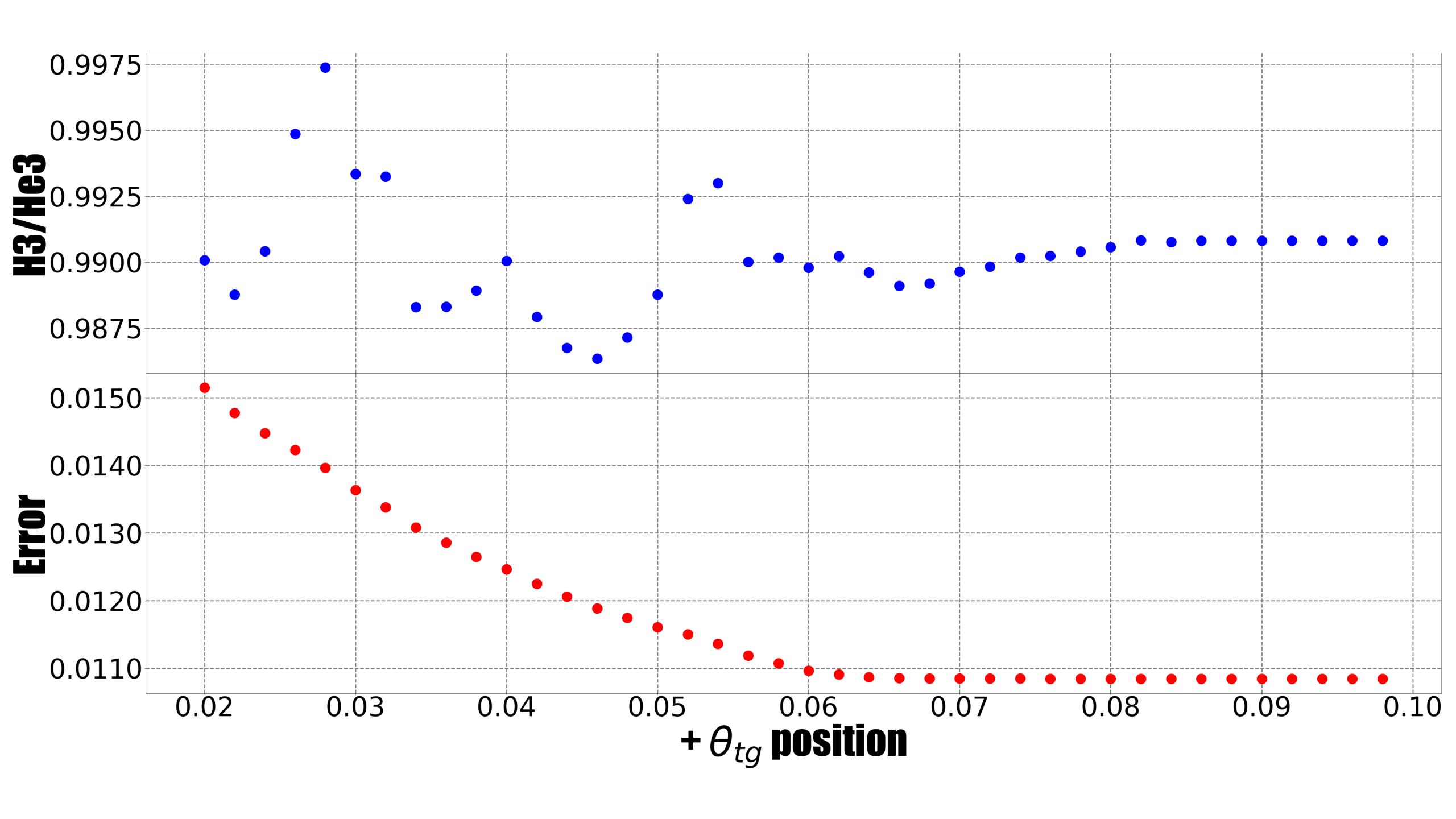
KIN

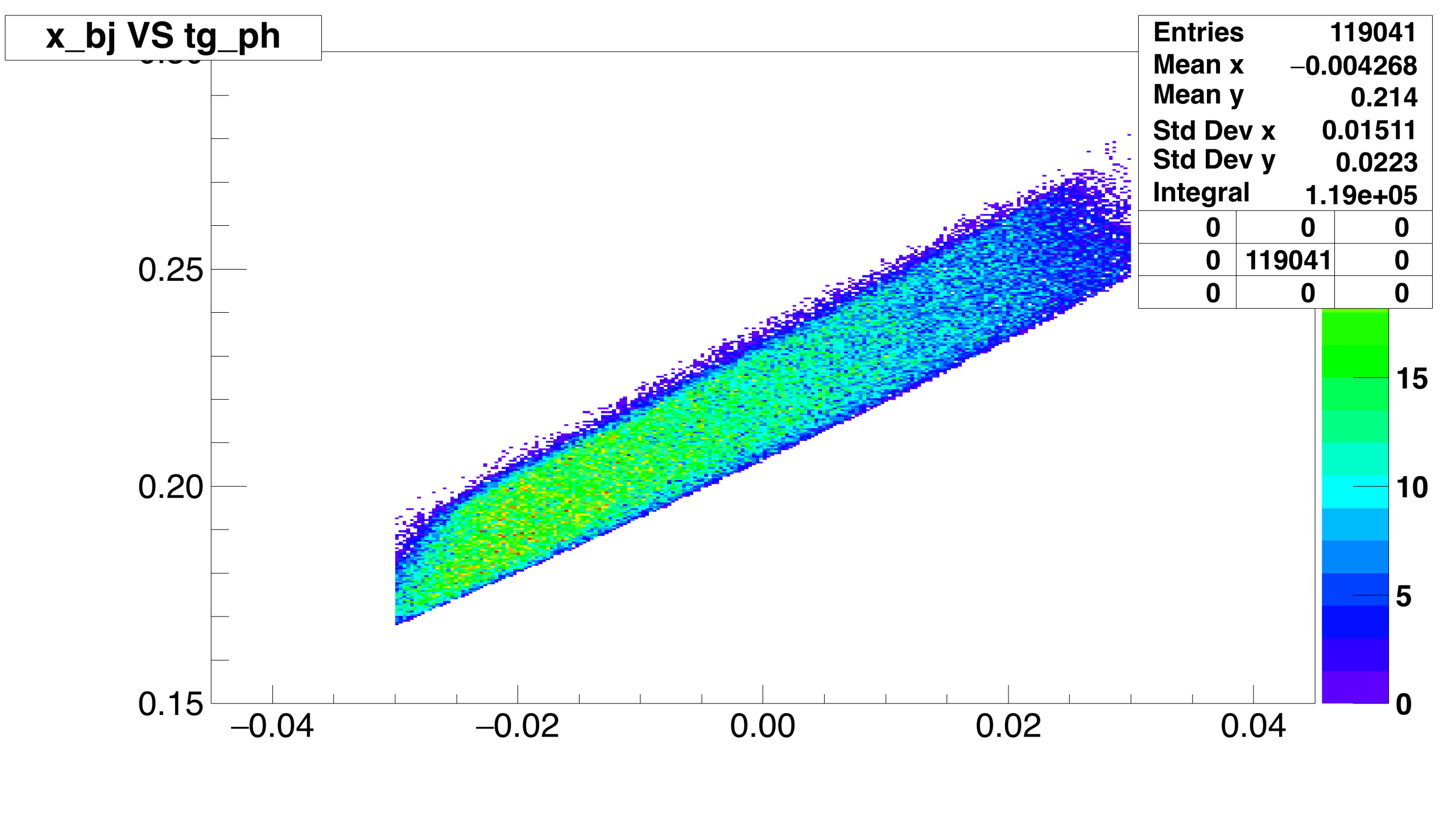
Some Acceptance study

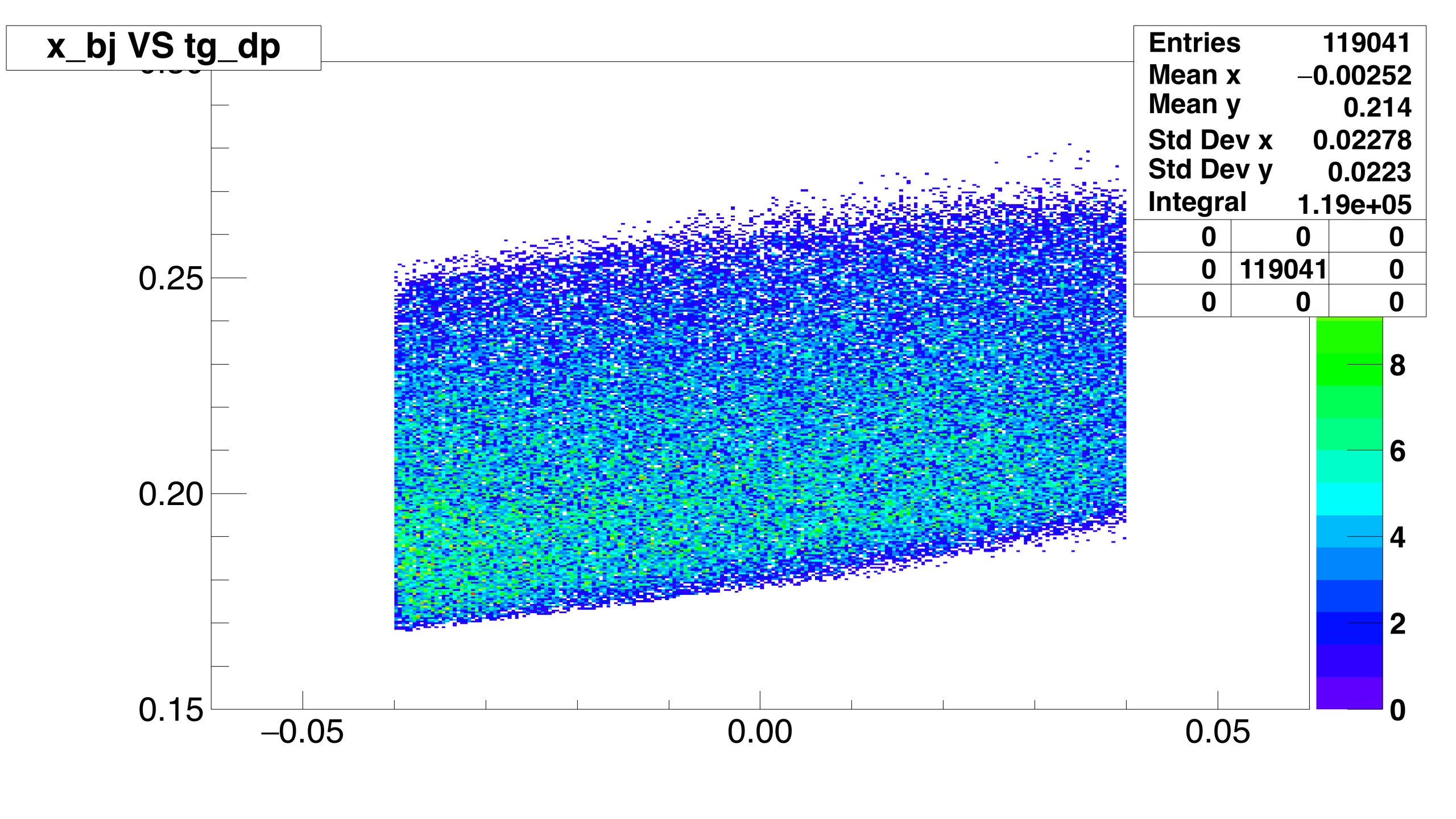
- **Zhihong Ye** Provide a great idea
- start with a tight acceptance cut
- Scan one side of acceptance cut step by step
- Check the H3/He3 ratio


x_bj VS tg_th
Entries 119041
Mean x 0.001383
Mean y 0.214
Std Dev x 0.03079
Std Dev y 0.0223
Integral 1.19e+05
0 0 0
0 119041 0
0 0 0
0.25
0.20
0.15
−0.05
0.00
0.05
6
4
2
0


Good Electron Number
17500
15000
12500
10000
7500
5000
2500
0
0.02
0.03
0.04
0.05
0.06
0.07
0.08
0.09
0.10
+ θ_{tg} position


H3/He3
0.9975
0.9950
0.9925
0.9900
0.9875
Error
0.0150
0.0140
0.0130
0.0120
0.0110
0.02
0.03
0.04
0.05
0.06
0.07
0.08
0.09
0.10
+ θ_{tg} position


x_bj VS tg_ph
Entries 119041
Mean x −0.004268
Mean y 0.214
Std Dev x 0.01511
Std Dev y 0.0223
Integral 1.19e+05
0 0 0
0 119041 0
0 0 0
0.25
0.20
0.15
−0.04
−0.02
0.00
0.02
0.04
15
10
5
0


x_bj VS tg_dp
Entries 119041
Mean x −0.00252
Mean y 0.214
Std Dev x 0.02278
Std Dev y 0.0223
Integral 1.19e+05
0 0 0
0 119041 0
0 0 0
0.25
0.20
0.15
−0.05
0.00
0.05
8
6
4
2
0