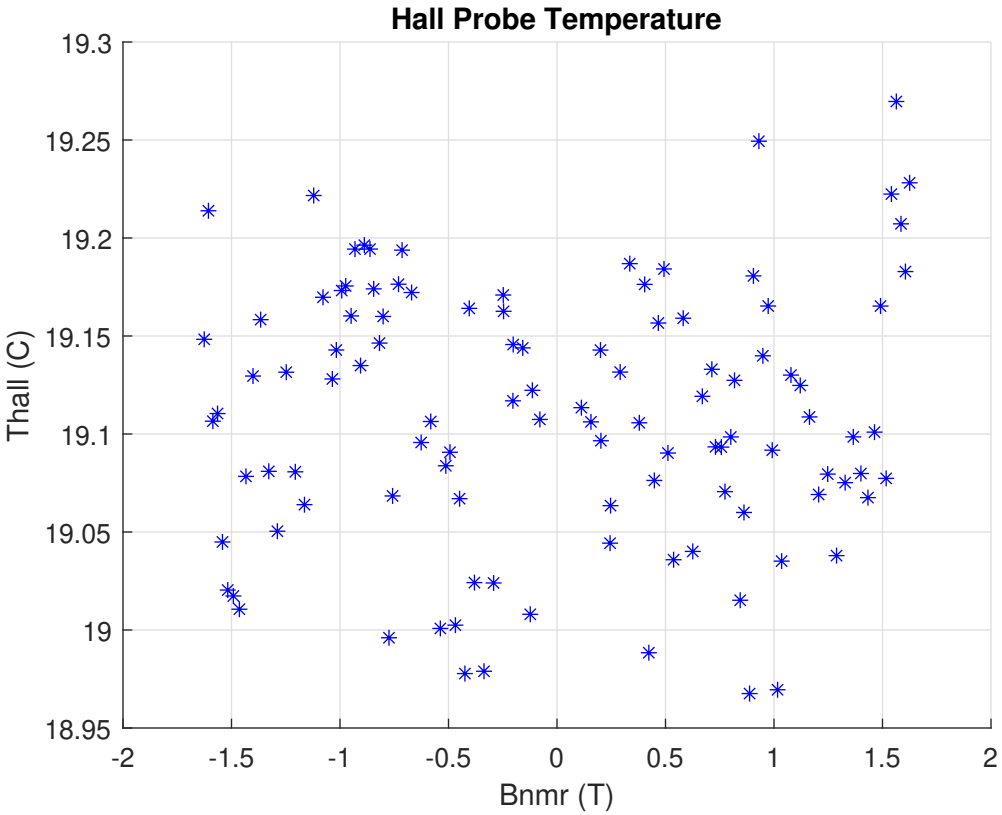
SLAC Magnetic Measurements
Hall Probe Calibration

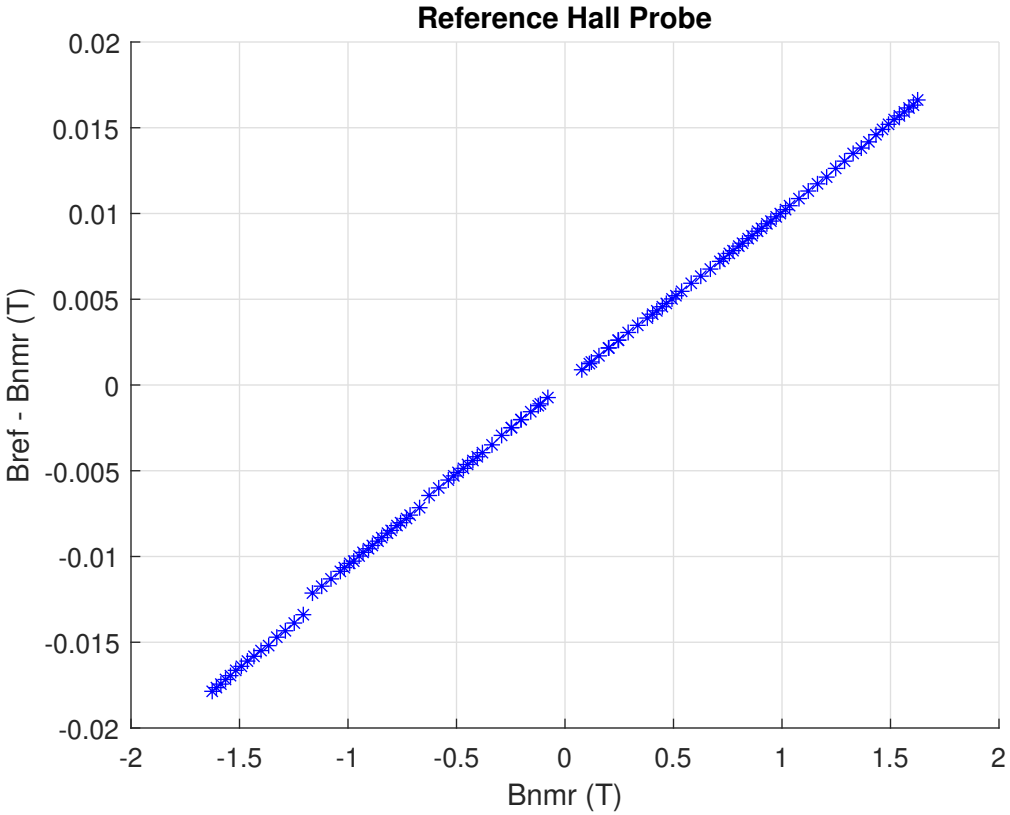
Header:
SLAC Magnetic Measurements
Date: 04-04-2019
Time: 08:25:08

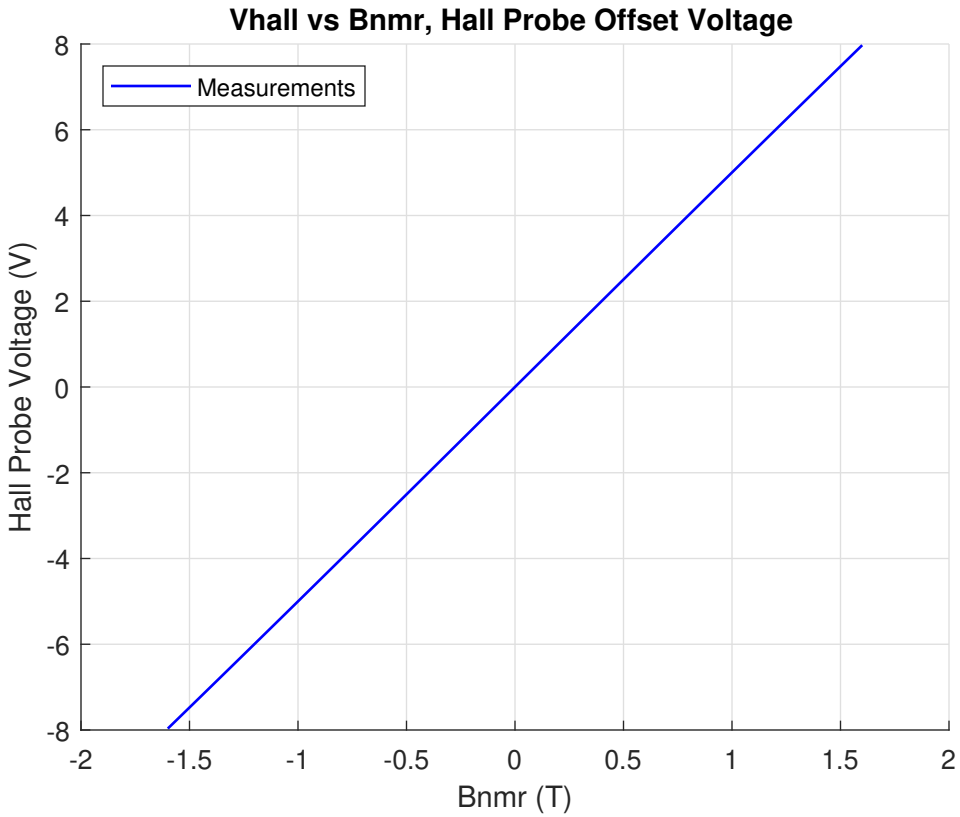
Project: LCLS-II
Device Type: Hall probe
Data Type: Y
Serial Number: SENTRON-463
Run Number: 8
Measurement Type: HPCS
Operator: YL
Comment: PC71024; +6.00004, -6.00004, +1.00001

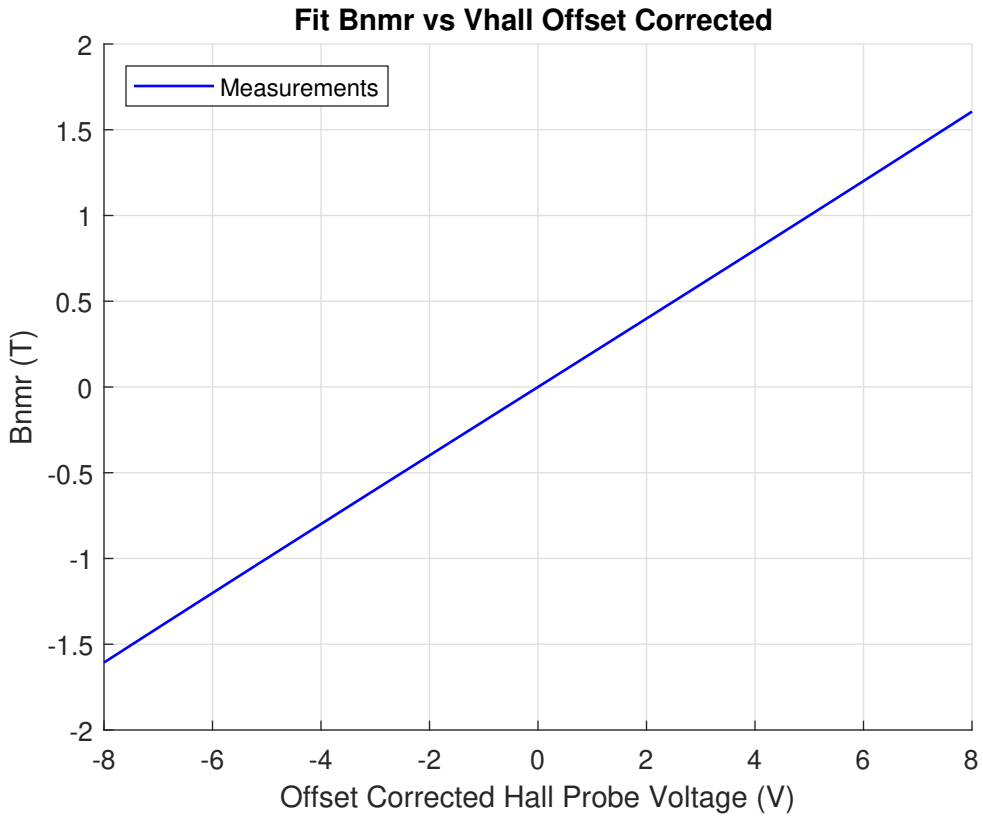
Current(A) T(C) Case T-V Est. Field(T) Voltage Voltage-T-Corr Field

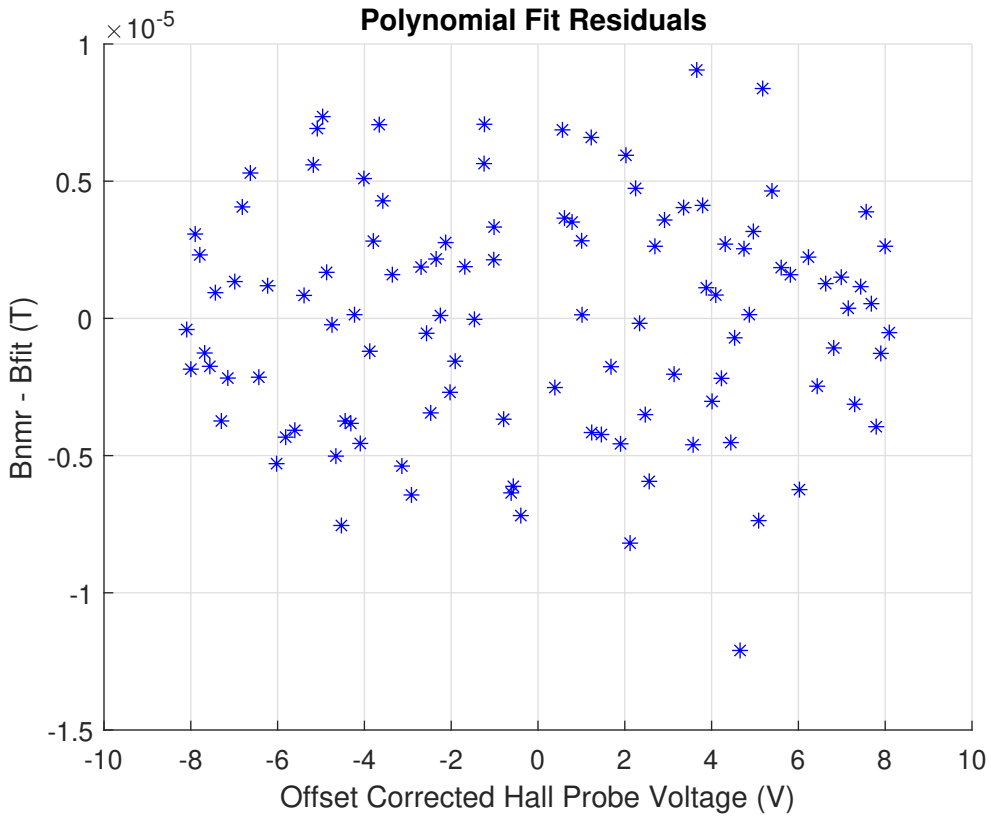
Parameters:
INPUT-FILE-DIR =T:\MagData\LCLS-II\Hall probe\SENTRON-463\HPCS-008\
INPUT-FILE-NAME =hpcs-dat.001
POLY-FIT-ORDER =15
NUM-SIG-OUTLIER =2
NOM-CALIB-CONST =0.2
MAX-B-NMR-FIT =1.6

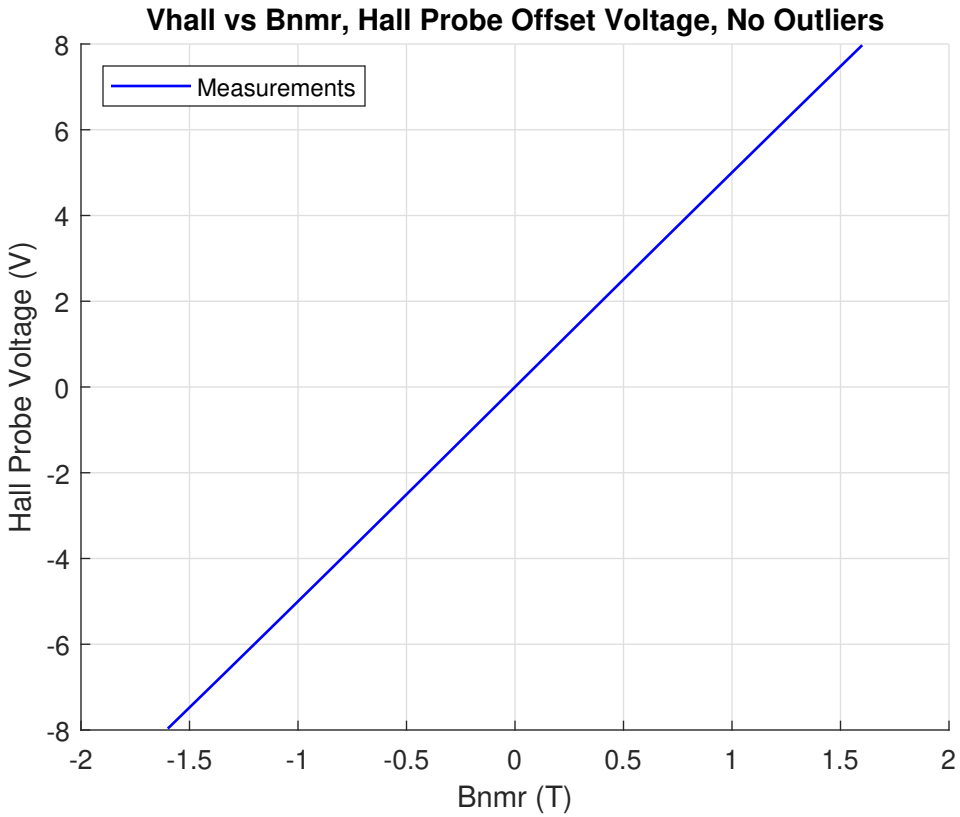

Hall Probe Temperature
Thall (C)
Bnmr (T)
19.3
19.25
19.2
19.15
19.1
19.05
19
18.95
-2
-1.5
-1
-0.5
0
0.5
1
1.5
2

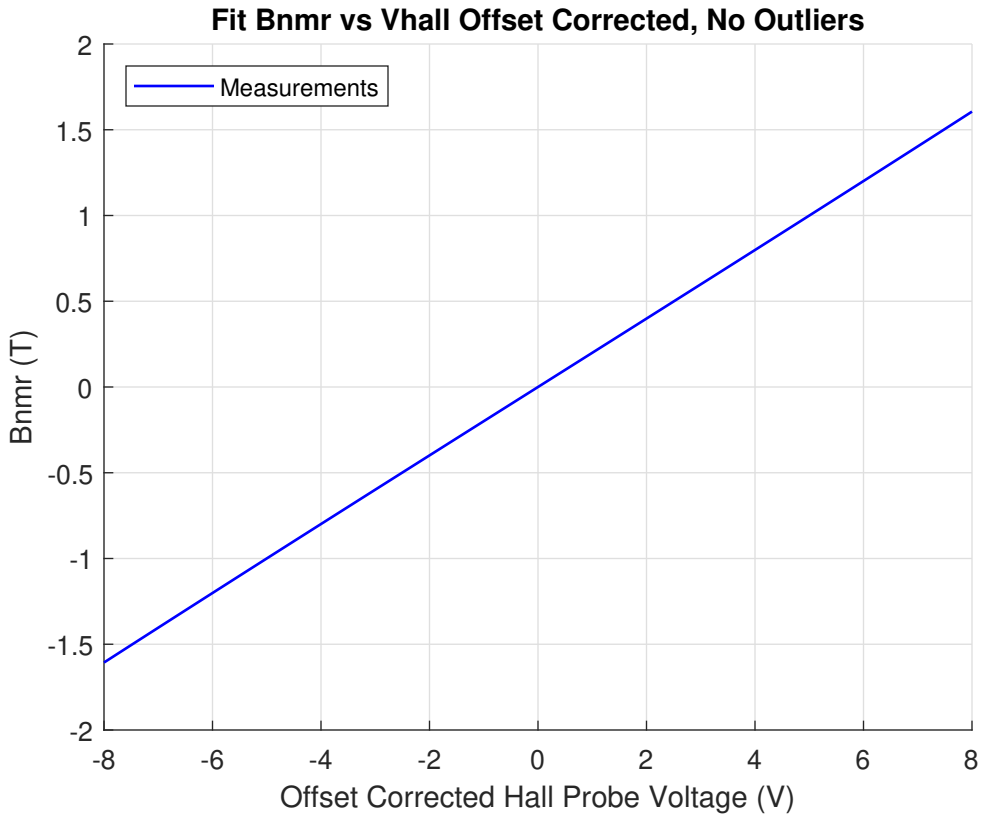

Reference Hall Probe
Bref - Bnmr (T)
Bnmr (T)
0.02
0.015
0.01
0.005
0
-0.005
-0.01
-0.015
-0.02
-2
-1.5
-1
-0.5
0
0.5
1
1.5
2

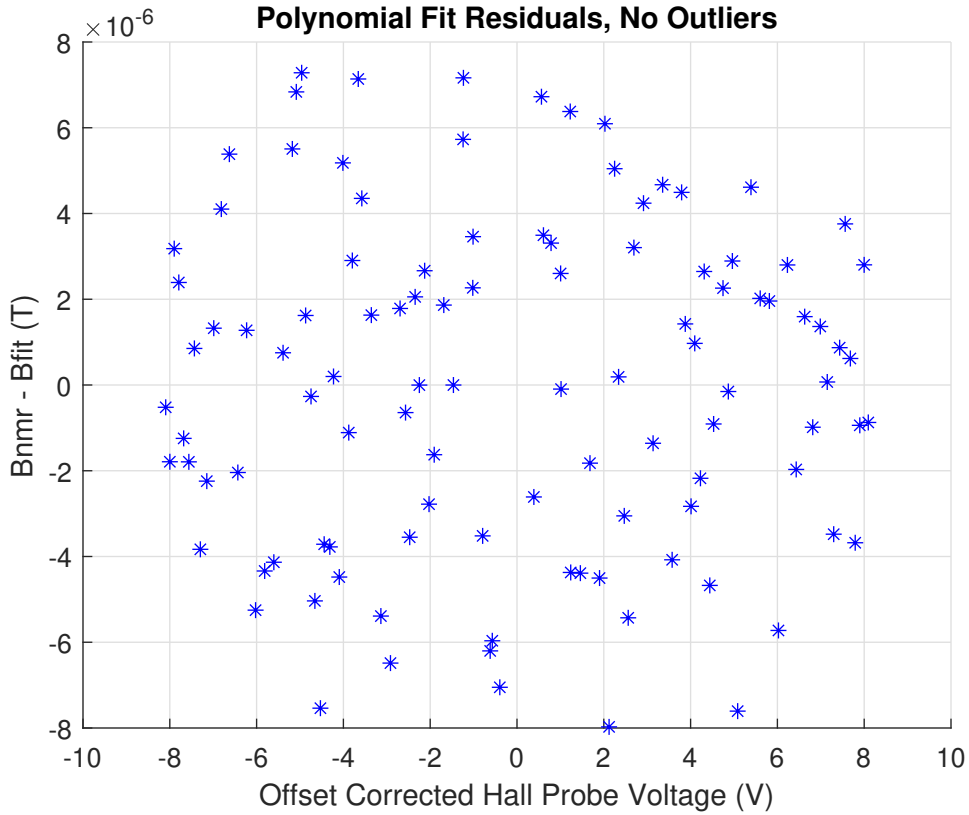

Vhall vs Bnmr, Hall Probe Offset Voltage
Measurements
Hall Probe Voltage (V)
Bnmr (T)
8
6
4
2
0
-2
-4
-6
-8
-2
-1.5
-1
-0.5
0
0.5
1
1.5
2

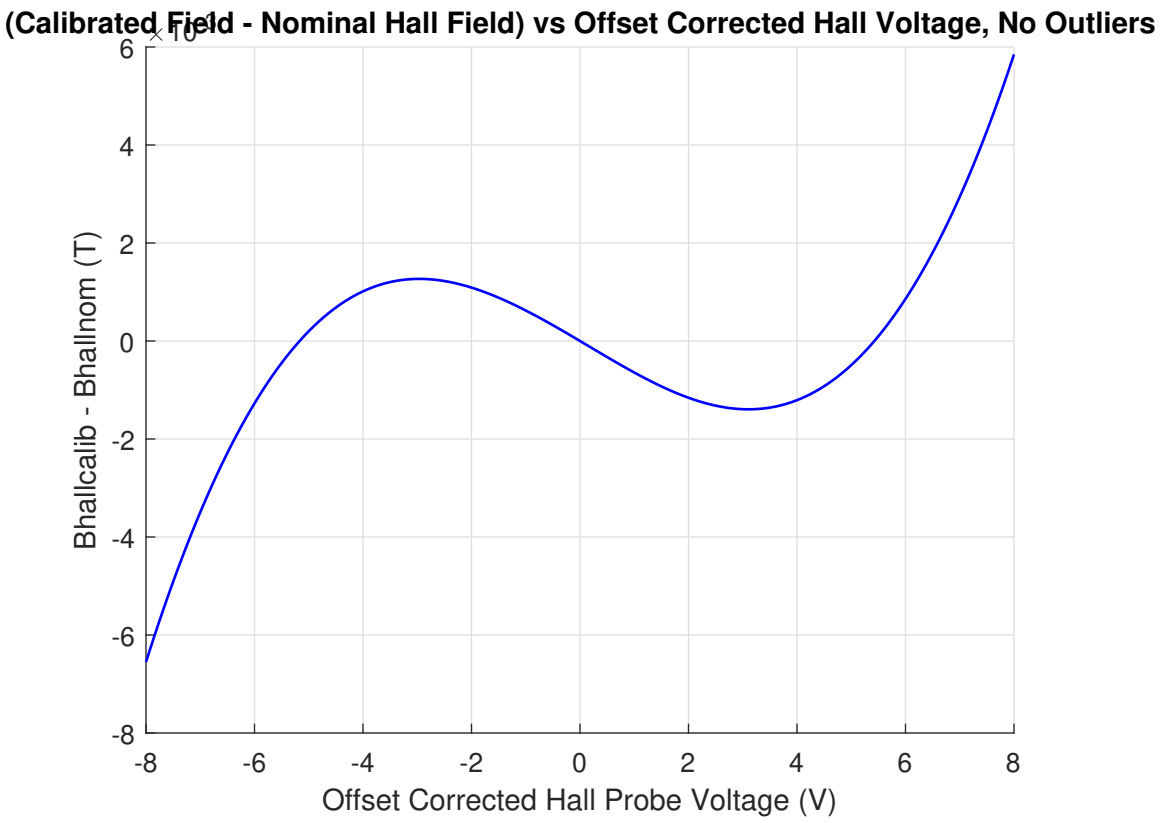

Fit Bnmr vs Vhall Offset Corrected
Measurements
Bnmr (T)
Offset Corrected Hall Probe Voltage (V)
2
1.5
1
0.5
0
-0.5
-1
-1.5
-2
-8
-6
-4
-2
0
2
4
6
8


Polynomial Fit Residuals
×10^-5
1
0.5
0
-0.5
-1
-1.5
Bnmr - Bfit (T)
-10
-8
-6
-4
-2
0
2
4
6
8
10
Offset Corrected Hall Probe Voltage (V)


Vhall vs Bnmr, Hall Probe Offset Voltage, No Outliers
Measurements
Hall Probe Voltage (V)
Bnmr (T)
8
6
4
2
0
-2
-4
-6
-8
-2
-1.5
-1
-0.5
0
0.5
1
1.5
2


Fit Bnmr vs Vhall Offset Corrected, No Outliers
Measurements
Bnmr (T)
Offset Corrected Hall Probe Voltage (V)
2
1.5
1
0.5
0
-0.5
-1
-1.5
-2
-8
-6
-4
-2
0
2
4
6
8


Polynomial Fit Residuals, No Outliers
×10-6
8
6
4
2
0
-2
-4
-6
-8
Bnmr - Bfit (T)
-10
-8
-6
-4
-2
0
2
4
6
8
10
Offset Corrected Hall Probe Voltage (V)


(Calibrated Field - Nominal Hall Field) vs Offset Corrected Hall Voltage, No Outliers
×10^-4
6
4
2
0
-2
-4
-6
-8
Bhallcalib - Bhallnom (T)
-8
-6
-4
-2
0
2
4
6
8
Offset Corrected Hall Probe Voltage (V)