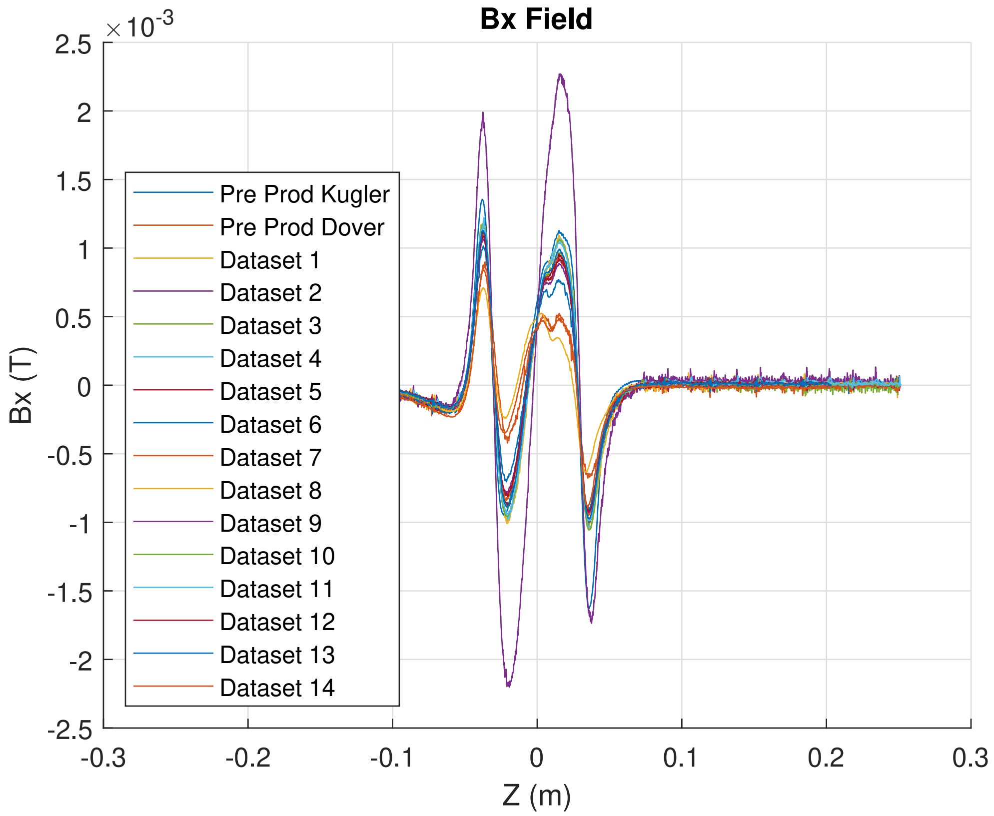
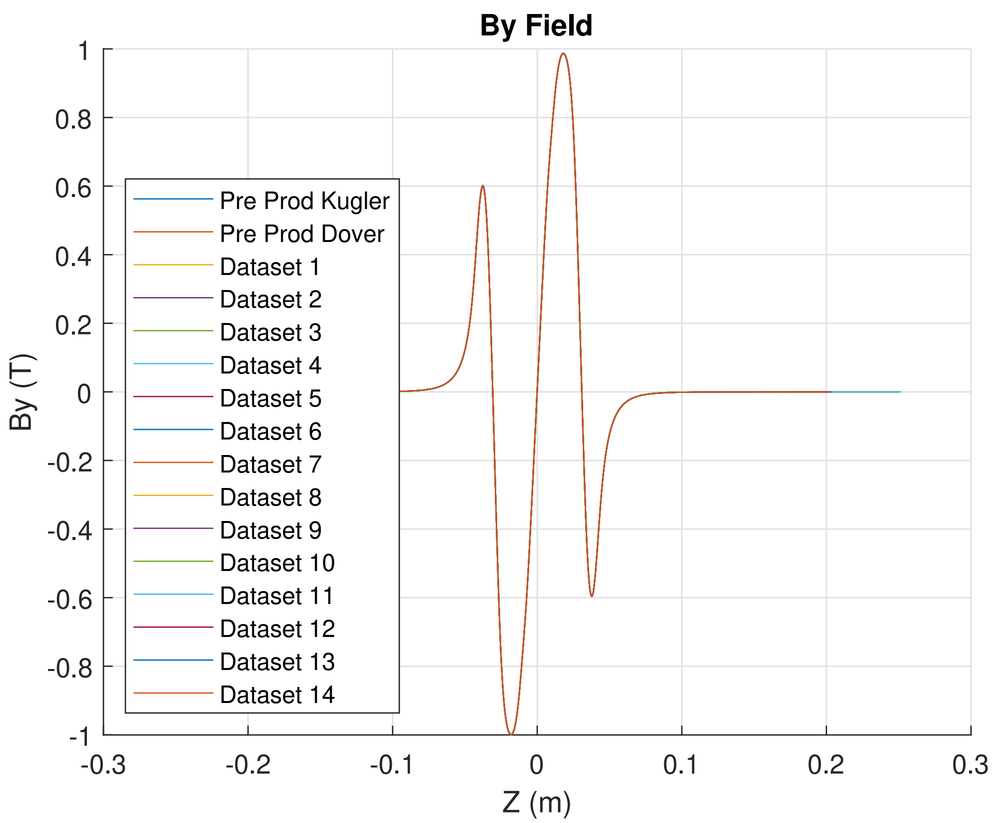
SLAC Magnetic Measurements
Phase Shifter Analysis Comparison

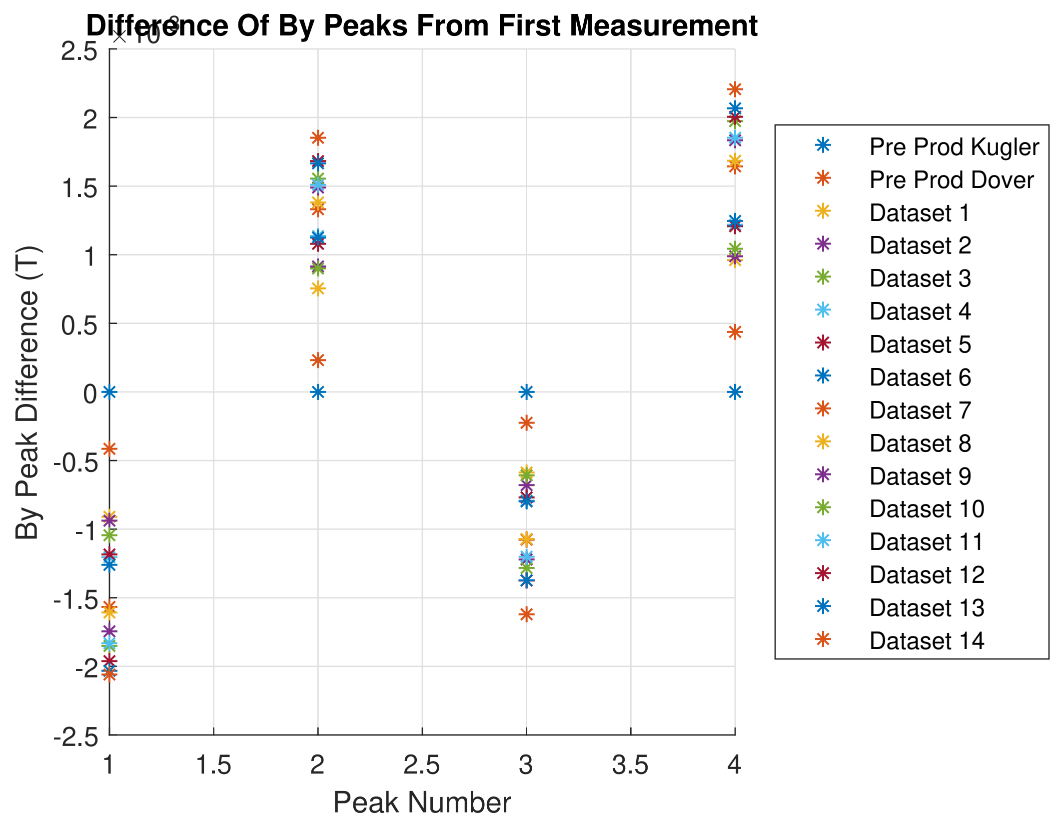
Title:
SXPS-16337 Reference Phase Shifter, Gap = 10 mm

Input Files:
1) S:\magdata\LCLS-II\Phase Shifter - Preproduction\SXR_16337\DATASET0001\Kugler Bench Measurements\Run 001\phase_shifter_anal.mat
2) S:\magdata\LCLS-II\Phase Shifter - Preproduction\SXR_16337\DATASET0001\Final Results\Z Scans\On Axis\001gap010.000x+00.00y+00.00\phase_shifter_anal.mat
3) S:\magdata\LCLS-II\Phase Shifter\SXPS_16337\DATASET0001\Final Results\Z Scans\On Axis_Dataset1\001gap010.000x+00.00y+00.00\phase_shifter_anal.mat
4) S:\magdata\LCLS-II\Phase Shifter\SXPS_16337\DATASET0002\Final Results\Z Scans\On Axis\001gap010.000x+00.00y+00.00\phase_shifter_anal.mat
5) S:\magdata\LCLS-II\Phase Shifter\SXPS_16337\DATASET0003\Final Results\Z Scans\On Axis\001gap010.000x+00.00y+00.00\phase_shifter_anal.mat
6) S:\magdata\LCLS-II\Phase Shifter\SXPS_16337\DATASET0004\Final Results\Z Scans\On Axis\001gap010.000x+00.00y+00.00\phase_shifter_anal.mat
7) S:\magdata\LCLS-II\Phase Shifter\SXPS_16337\DATASET0005\Final Results\Z Scans\On Axis\001gap010.000x+00.00y+00.00\phase_shifter_anal.mat
8) S:\magdata\LCLS-II\Phase Shifter\SXPS_16337\DATASET0006\Final Results\Z Scans\On Axis\001gap010.000x+00.00y+00.00\phase_shifter_anal.mat
9) S:\magdata\LCLS-II\Phase Shifter\SXPS_16337\DATASET0007\Final Results\Z Scans\On Axis\001gap010.000x+00.00y+00.00\phase_shifter_anal.mat
10) S:\magdata\LCLS-II\Phase Shifter\SXPS_16337\DATASET0008\Final Results\Z Scans\On Axis\001gap010.000x+00.00y+00.00\phase_shifter_anal.mat
11) S:\magdata\LCLS-II\Phase Shifter\SXPS_16337\DATASET0009\Final Results\Z Scans\On Axis\001gap010.000x+00.00y+00.00\phase_shifter_anal.mat
12) S:\magdata\LCLS-II\Phase Shifter\SXPS_16337\DATASET0010\Final Results\Z Scans\On Axis\001gap010.000x+00.00y+00.00\phase_shifter_anal.mat
13) S:\magdata\LCLS-II\Phase Shifter\SXPS_16337\DATASET0011\Final Results\Z Scans\On Axis\001gap010.000x+00.00y+00.00\phase_shifter_anal.mat
14) S:\magdata\LCLS-II\Phase Shifter\SXPS_16337\DATASET0012\Final Results\Z Scans\On Axis\001gap010.000x+00.00y+00.00\phase_shifter_anal.mat
15) S:\magdata\LCLS-II\Phase Shifter\SXPS_16337\DATASET0013\Final Results\Z Scans\On Axis\001gap010.000x+00.00y+00.00\phase_shifter_anal.mat
16) S:\magdata\LCLS-II\Phase Shifter\SXPS_16337\DATASET0014 - Kugler\Kugler Measurement Summary\001gap010.000x+00.00y+00.00\phase_shifter_anal.mat

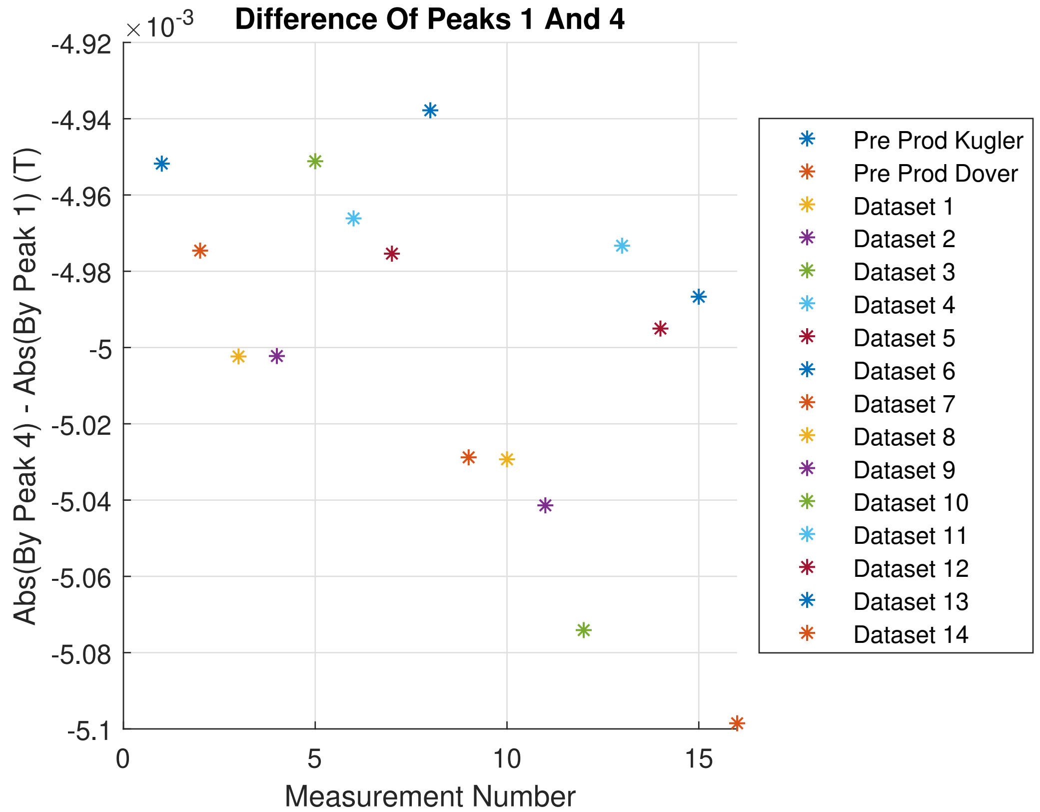


Bx Field
×10^-3
2.5
2
1.5
1
0.5
0
-0.5
-1
-1.5
-2
-2.5
Bx (T)
-0.3
-0.2
-0.1
0
0.1
0.2
0.3
Z (m)
Pre Prod Kugler
Pre Prod Dover
Dataset 1
Dataset 2
Dataset 3
Dataset 4
Dataset 5
Dataset 6
Dataset 7
Dataset 8
Dataset 9
Dataset 10
Dataset 11
Dataset 12
Dataset 13
Dataset 14

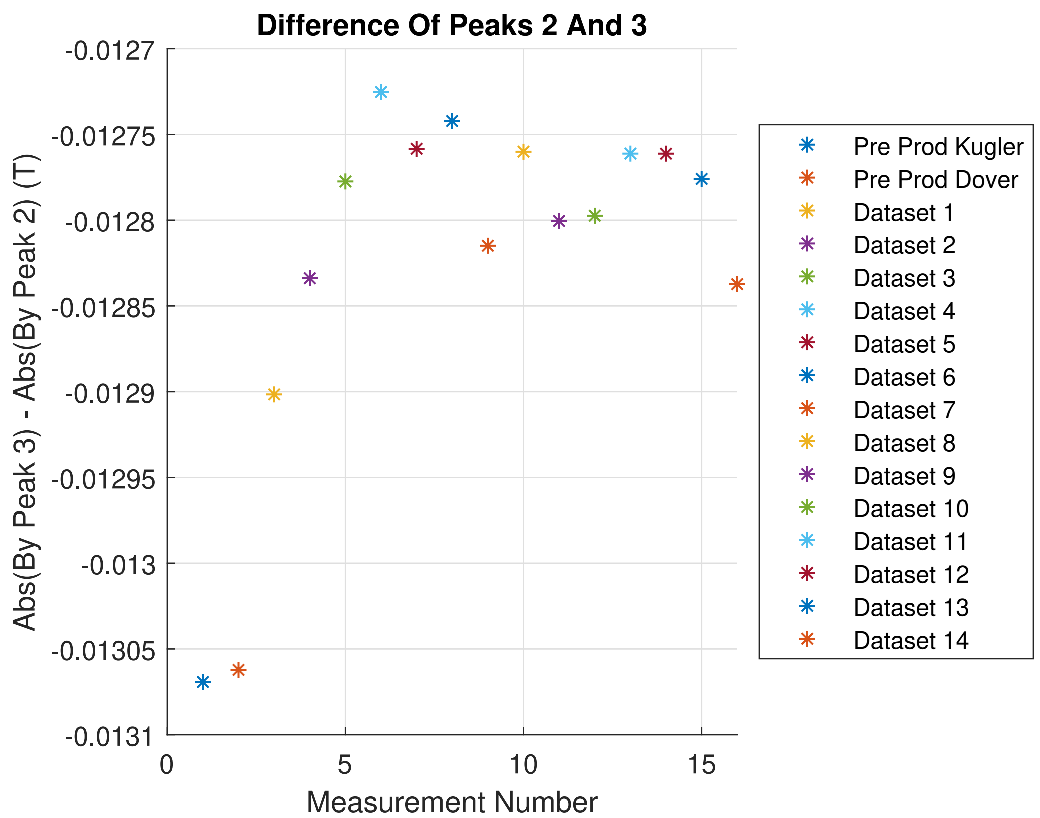

By Field
By (T)
Z (m)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-0.3
-0.2
-0.1
0
0.1
0.2
0.3
Pre Prod Kugler
Pre Prod Dover
Dataset 1
Dataset 2
Dataset 3
Dataset 4
Dataset 5
Dataset 6
Dataset 7
Dataset 8
Dataset 9
Dataset 10
Dataset 11
Dataset 12
Dataset 13
Dataset 14

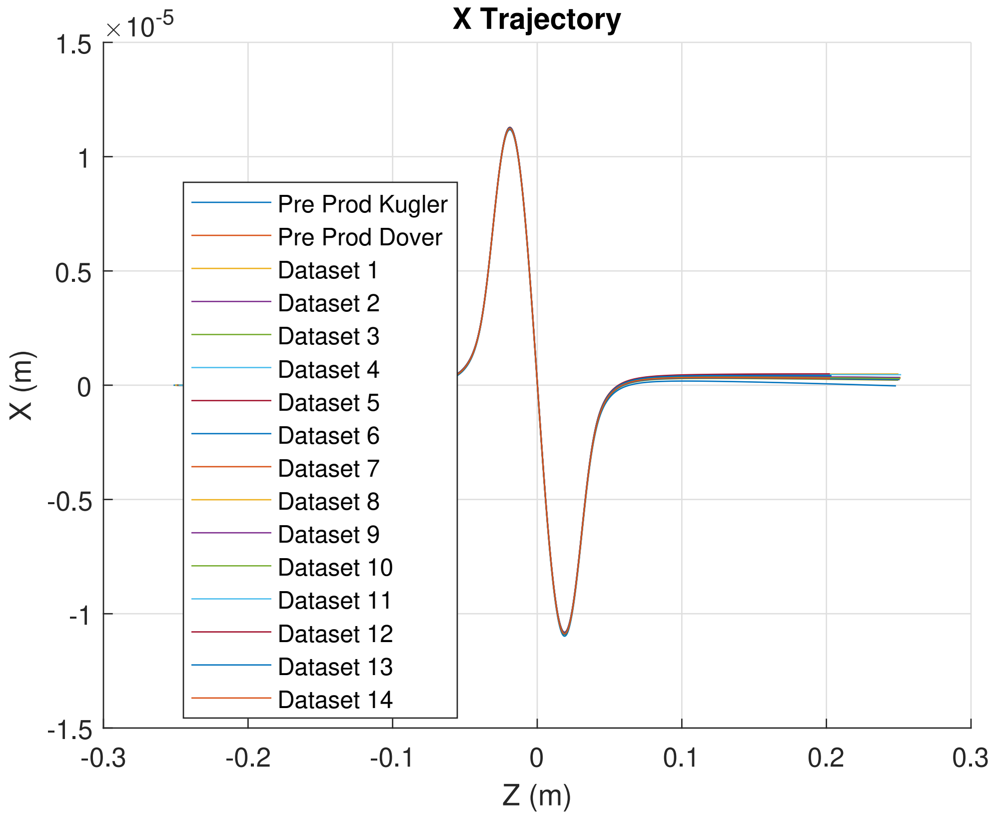


Difference Of By Peaks From First Measurement
By Peak Difference (T)
Peak Number
2.5
2
1.5
1
0.5
0
-0.5
-1
-1.5
-2
-2.5
1
1.5
2
2.5
3
3.5
4
Pre Prod Kugler
Pre Prod Dover
Dataset 1
Dataset 2
Dataset 3
Dataset 4
Dataset 5
Dataset 6
Dataset 7
Dataset 8
Dataset 9
Dataset 10
Dataset 11
Dataset 12
Dataset 13
Dataset 14

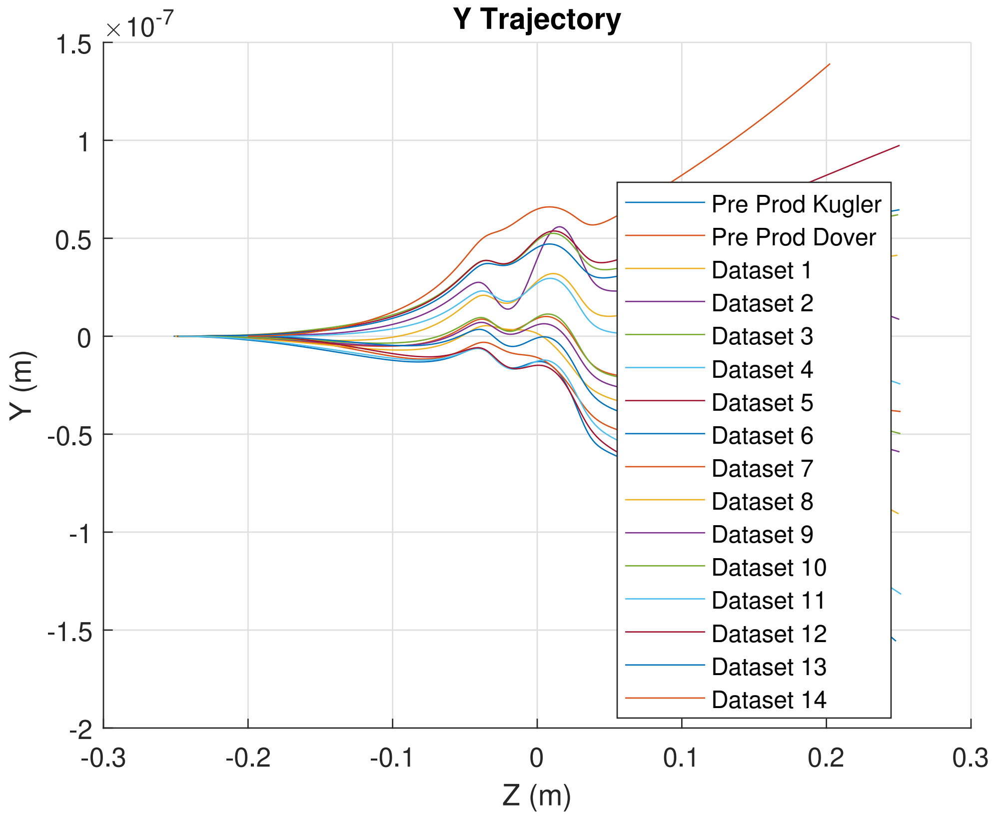


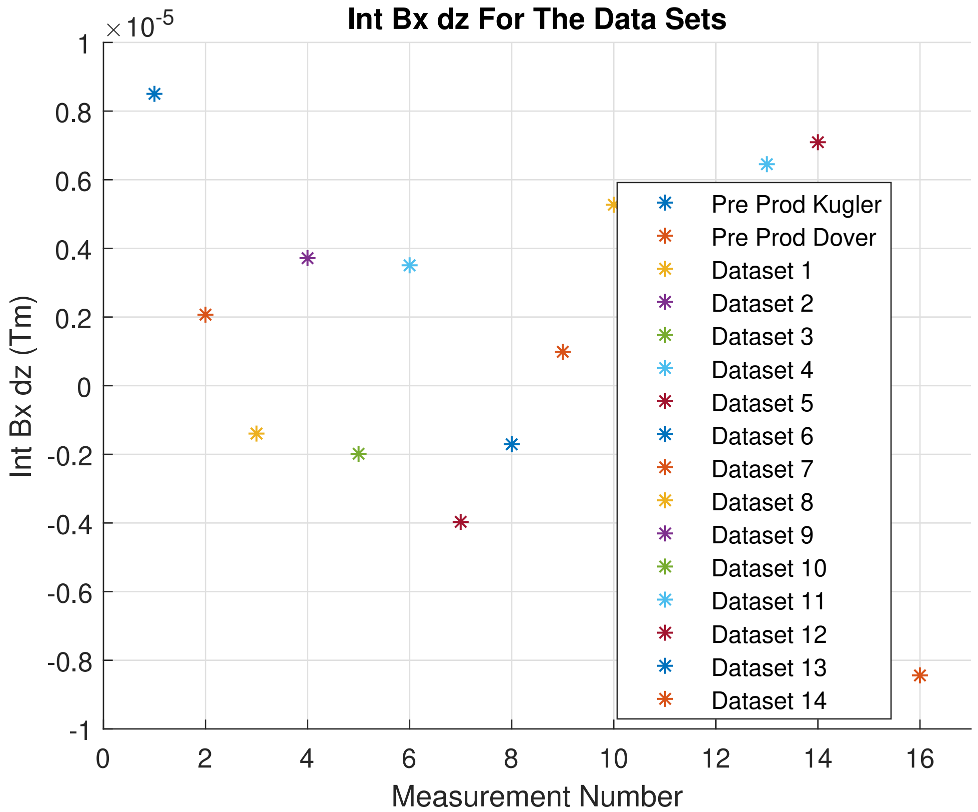
Difference Of Peaks 1 And 4
×10^-3
-4.92
-4.94
-4.96
-4.98
-5
-5.02
-5.04
-5.06
-5.08
-5.1
Abs(By Peak 4) - Abs(By Peak 1) (T)
0
5
10
15
Measurement Number
Pre Prod Kugler
Pre Prod Dover
Dataset 1
Dataset 2
Dataset 3
Dataset 4
Dataset 5
Dataset 6
Dataset 7
Dataset 8
Dataset 9
Dataset 10
Dataset 11
Dataset 12
Dataset 13
Dataset 14

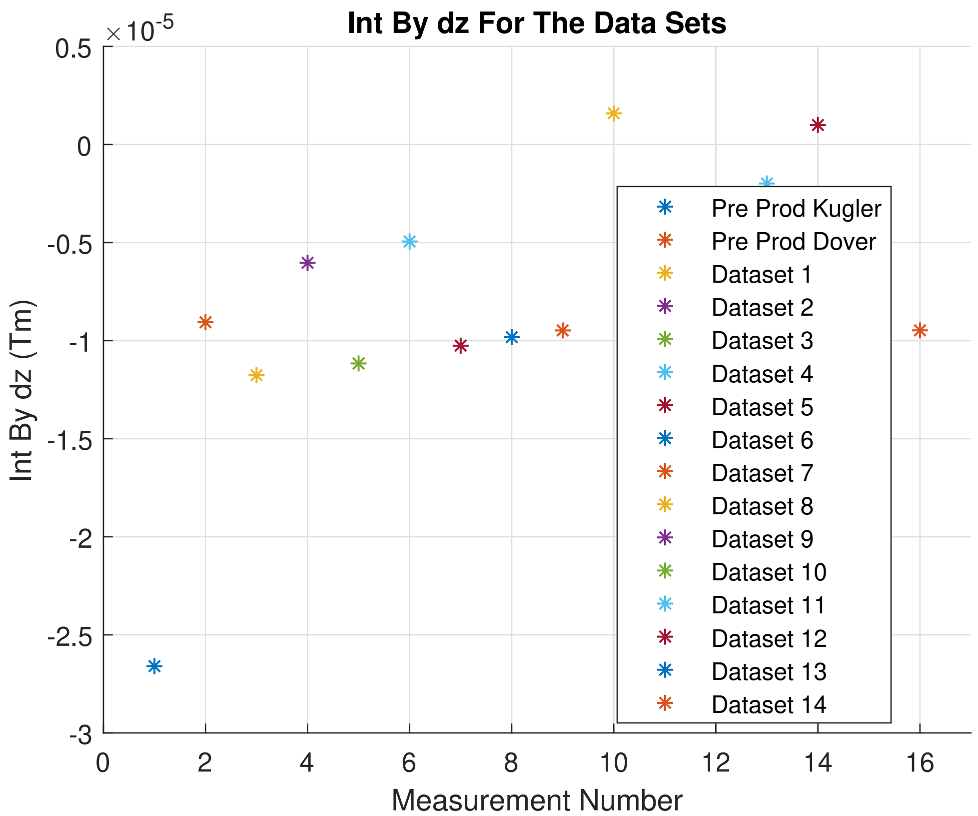

Difference Of Peaks 2 And 3
Abs(By Peak 3) - Abs(By Peak 2) (T)
-0.0127
-0.01275
-0.0128
-0.01285
-0.0129
-0.01295
-0.013
-0.01305
-0.0131
0
5
10
15
Measurement Number
Pre Prod Kugler
Pre Prod Dover
Dataset 1
Dataset 2
Dataset 3
Dataset 4
Dataset 5
Dataset 6
Dataset 7
Dataset 8
Dataset 9
Dataset 10
Dataset 11
Dataset 12
Dataset 13
Dataset 14

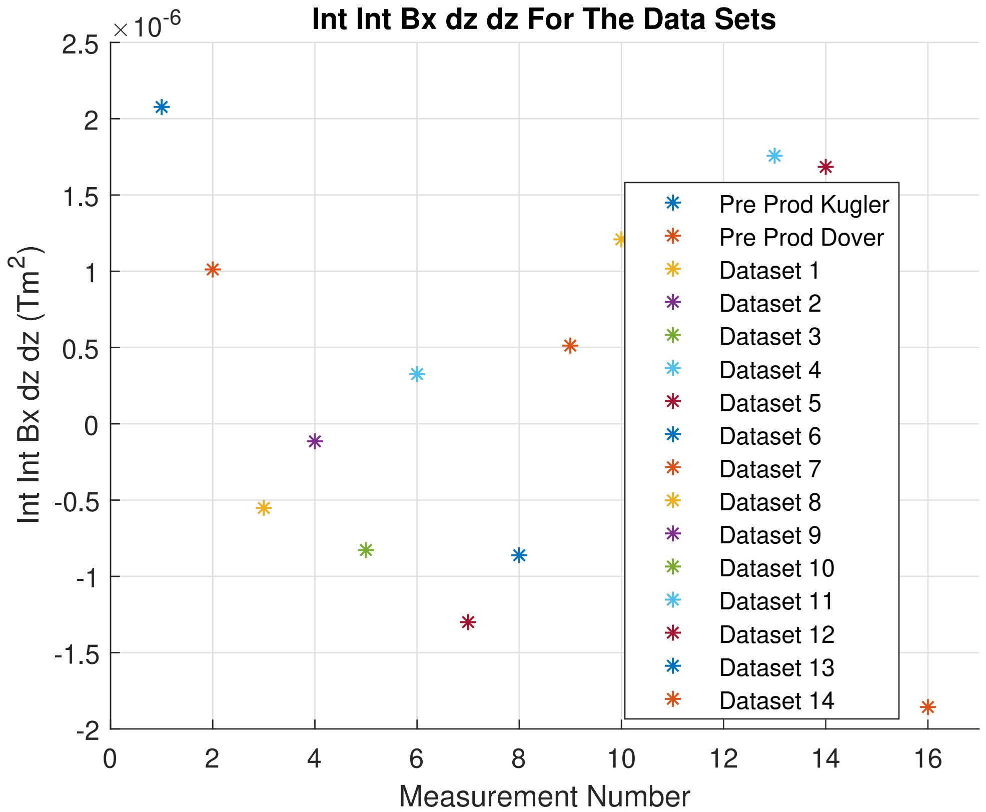


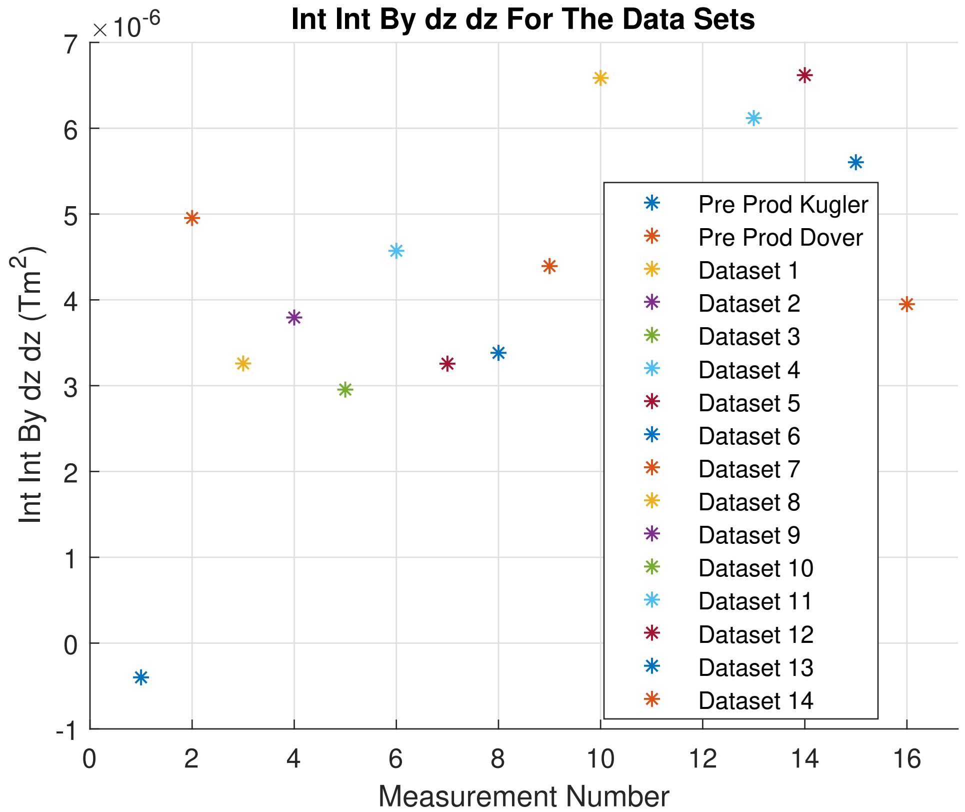
X Trajectory
×10^-5
1.5
1
0.5
0
-0.5
-1
-1.5
X (m)
-0.3
-0.2
-0.1
0
0.1
0.2
0.3
Z (m)
Pre Prod Kugler
Pre Prod Dover
Dataset 1
Dataset 2
Dataset 3
Dataset 4
Dataset 5
Dataset 6
Dataset 7
Dataset 8
Dataset 9
Dataset 10
Dataset 11
Dataset 12
Dataset 13
Dataset 14


Y Trajectory
×10^-7
1.5
1
0.5
0
-0.5
-1
-1.5
-2
Y (m)
-0.3
-0.2
-0.1
0
0.1
0.2
0.3
Z (m)
Pre Prod Kugler
Pre Prod Dover
Dataset 1
Dataset 2
Dataset 3
Dataset 4
Dataset 5
Dataset 6
Dataset 7
Dataset 8
Dataset 9
Dataset 10
Dataset 11
Dataset 12
Dataset 13
Dataset 14

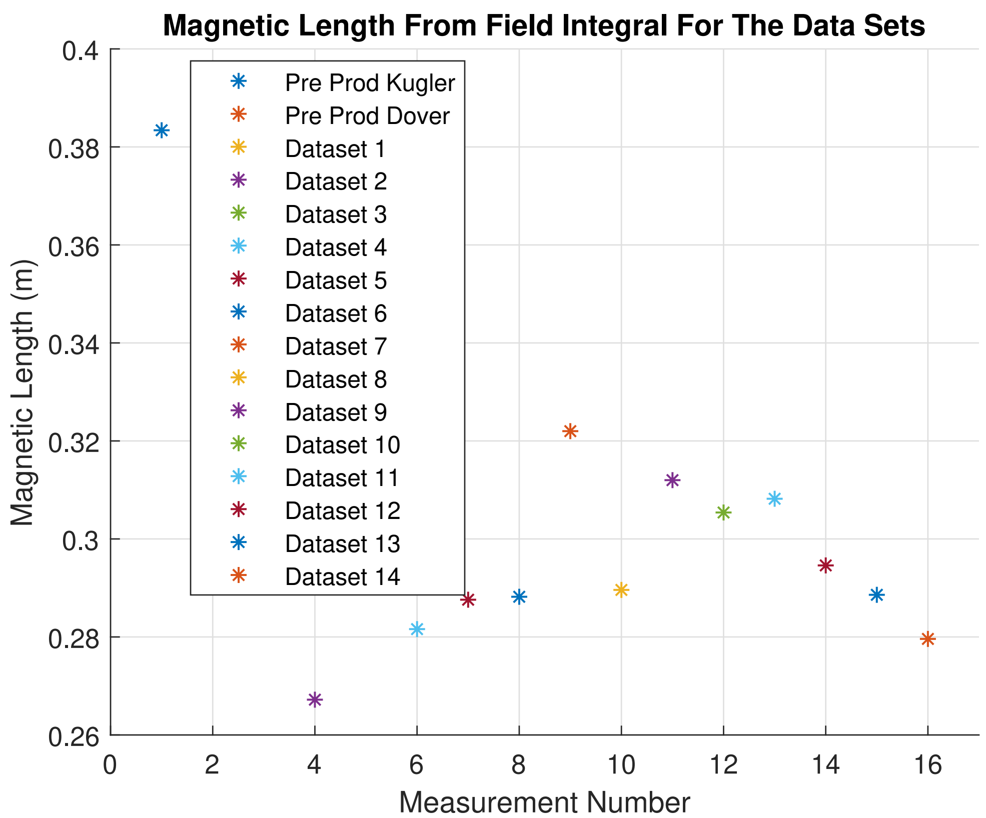

Int Bx dz For The Data Sets
×10^-5
Int Bx dz (Tm)
Measurement Number
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
0
2
4
6
8
10
12
14
16
Pre Prod Kugler
Pre Prod Dover
Dataset 1
Dataset 2
Dataset 3
Dataset 4
Dataset 5
Dataset 6
Dataset 7
Dataset 8
Dataset 9
Dataset 10
Dataset 11
Dataset 12
Dataset 13
Dataset 14

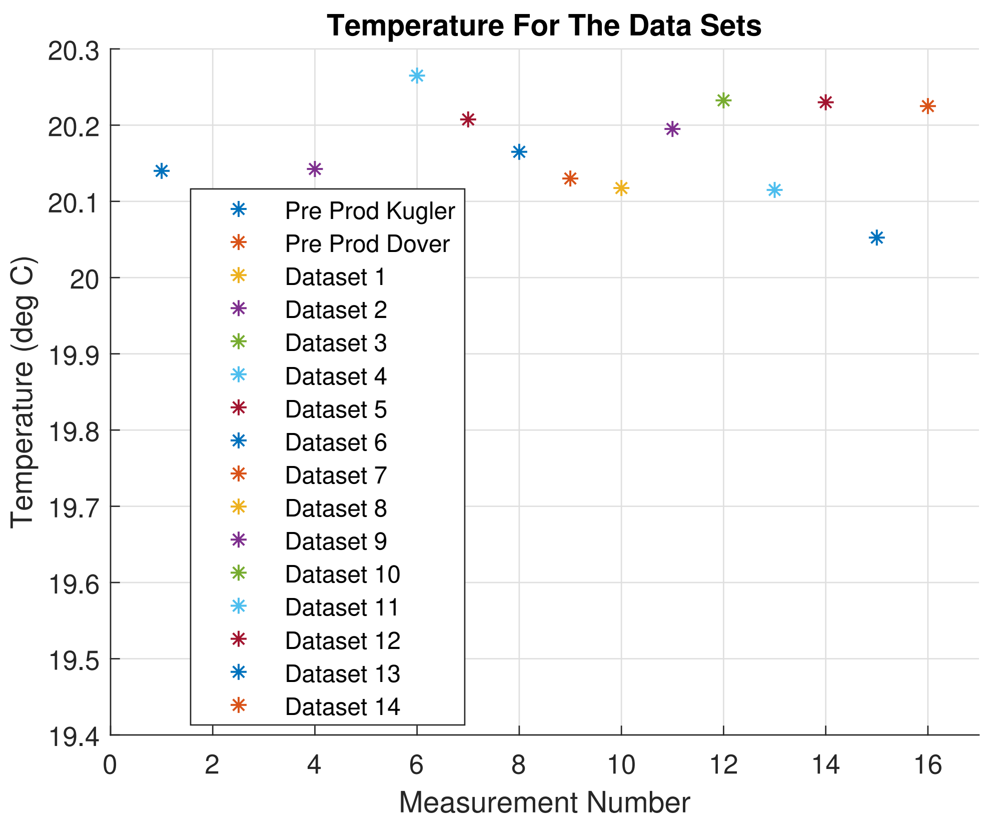

Int By dz For The Data Sets
×10^-5
0.5
0
-0.5
-1
-1.5
-2
-2.5
-3
Int By dz (Tm)
0
2
4
6
8
10
12
14
16
Measurement Number
Pre Prod Kugler
Pre Prod Dover
Dataset 1
Dataset 2
Dataset 3
Dataset 4
Dataset 5
Dataset 6
Dataset 7
Dataset 8
Dataset 9
Dataset 10
Dataset 11
Dataset 12
Dataset 13
Dataset 14


Int Int Bx dz dz For The Data Sets
×10^-6
2.5
2
1.5
1
0.5
0
-0.5
-1
-1.5
-2
Int Int Bx dz dz (Tm^2)
0
2
4
6
8
10
12
14
16
Measurement Number
Pre Prod Kugler
Pre Prod Dover
Dataset 1
Dataset 2
Dataset 3
Dataset 4
Dataset 5
Dataset 6
Dataset 7
Dataset 8
Dataset 9
Dataset 10
Dataset 11
Dataset 12
Dataset 13
Dataset 14

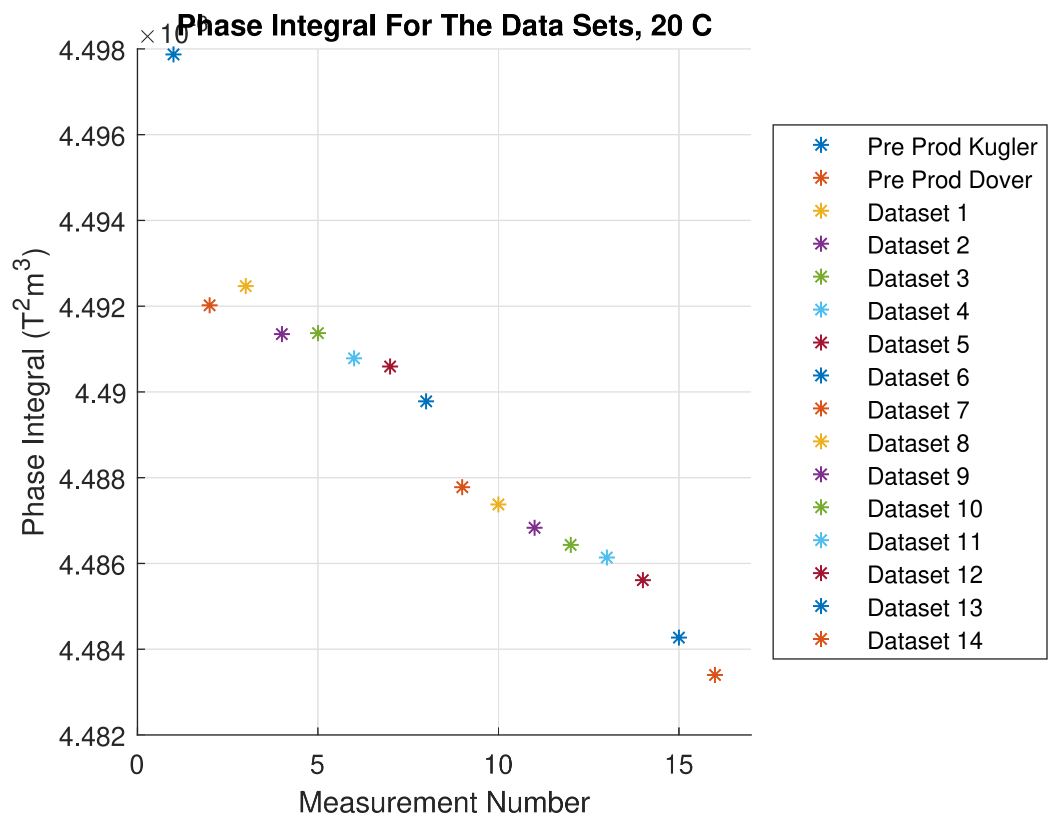


Int Int By dz dz For The Data Sets
×10-6
7
6
5
4
3
2
1
0
-1
Int Int By dz dz (Tm2)
0
2
4
6
8
10
12
14
16
Measurement Number
Pre Prod Kugler
Pre Prod Dover
Dataset 1
Dataset 2
Dataset 3
Dataset 4
Dataset 5
Dataset 6
Dataset 7
Dataset 8
Dataset 9
Dataset 10
Dataset 11
Dataset 12
Dataset 13
Dataset 14


Magnetic Length From Field Integral For The Data Sets
Magnetic Length (m)
Measurement Number
0.4
0.38
0.36
0.34
0.32
0.3
0.28
0.26
0
2
4
6
8
10
12
14
16
Pre Prod Kugler
Pre Prod Dover
Dataset 1
Dataset 2
Dataset 3
Dataset 4
Dataset 5
Dataset 6
Dataset 7
Dataset 8
Dataset 9
Dataset 10
Dataset 11
Dataset 12
Dataset 13
Dataset 14



Temperature For The Data Sets
Temperature (deg C)
20.3
20.2
20.1
20
19.9
19.8
19.7
19.6
19.5
19.4
0
2
4
6
8
10
12
14
16
Measurement Number
Pre Prod Kugler
Pre Prod Dover
Dataset 1
Dataset 2
Dataset 3
Dataset 4
Dataset 5
Dataset 6
Dataset 7
Dataset 8
Dataset 9
Dataset 10
Dataset 11
Dataset 12
Dataset 13
Dataset 14



Phase Integral For The Data Sets, 20 C
Phase Integral (T²m³)
Measurement Number
4.498
4.496
4.494
4.492
4.49
4.488
4.486
4.484
4.482
0
5
10
15
Pre Prod Kugler
Pre Prod Dover
Dataset 1
Dataset 2
Dataset 3
Dataset 4
Dataset 5
Dataset 6
Dataset 7
Dataset 8
Dataset 9
Dataset 10
Dataset 11
Dataset 12
Dataset 13
Dataset 14