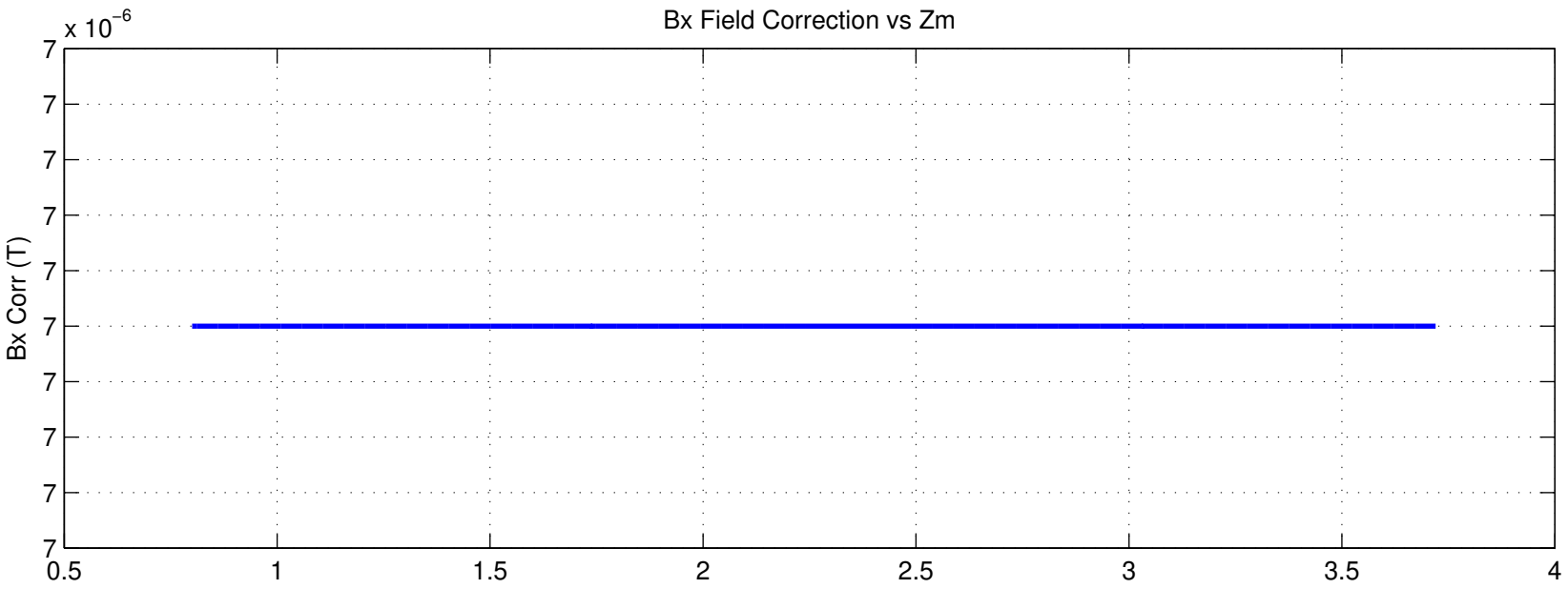
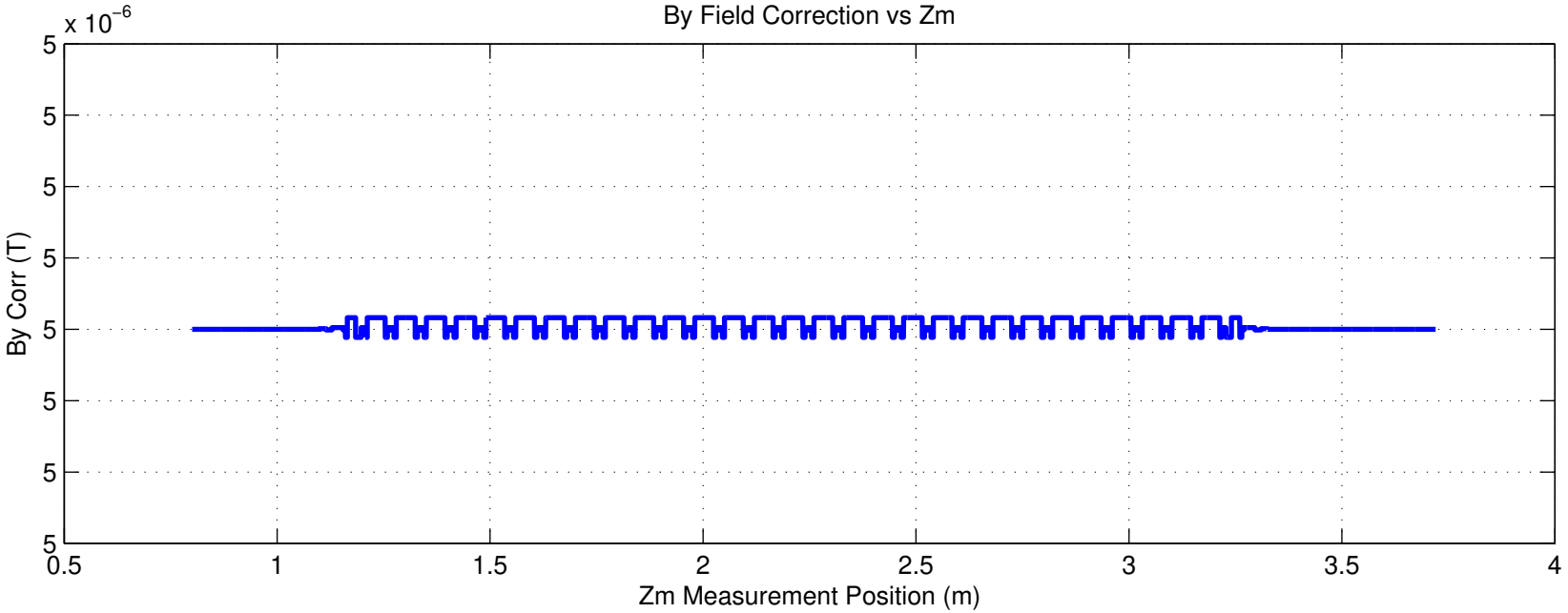
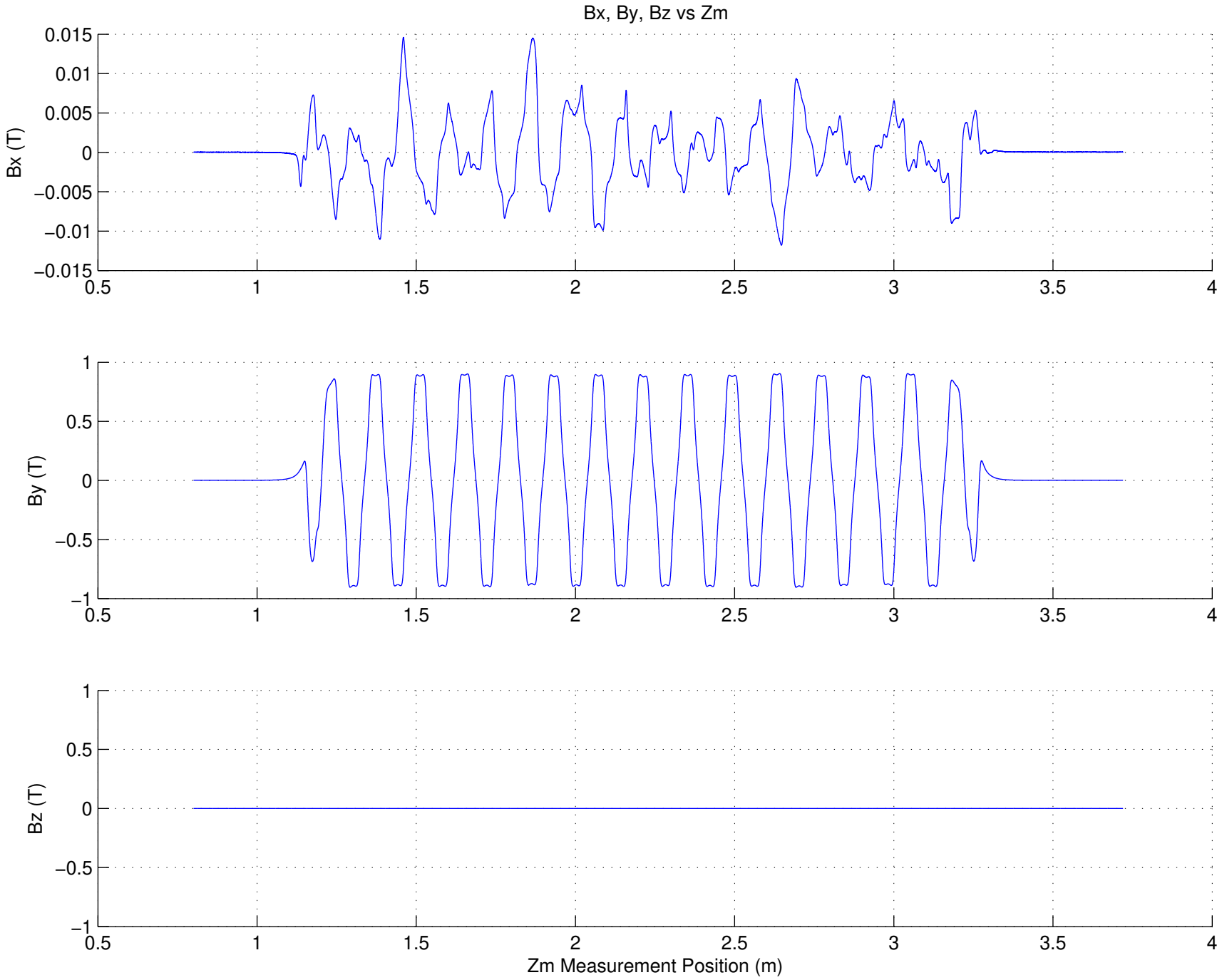
SLAC Magnetic Measurements

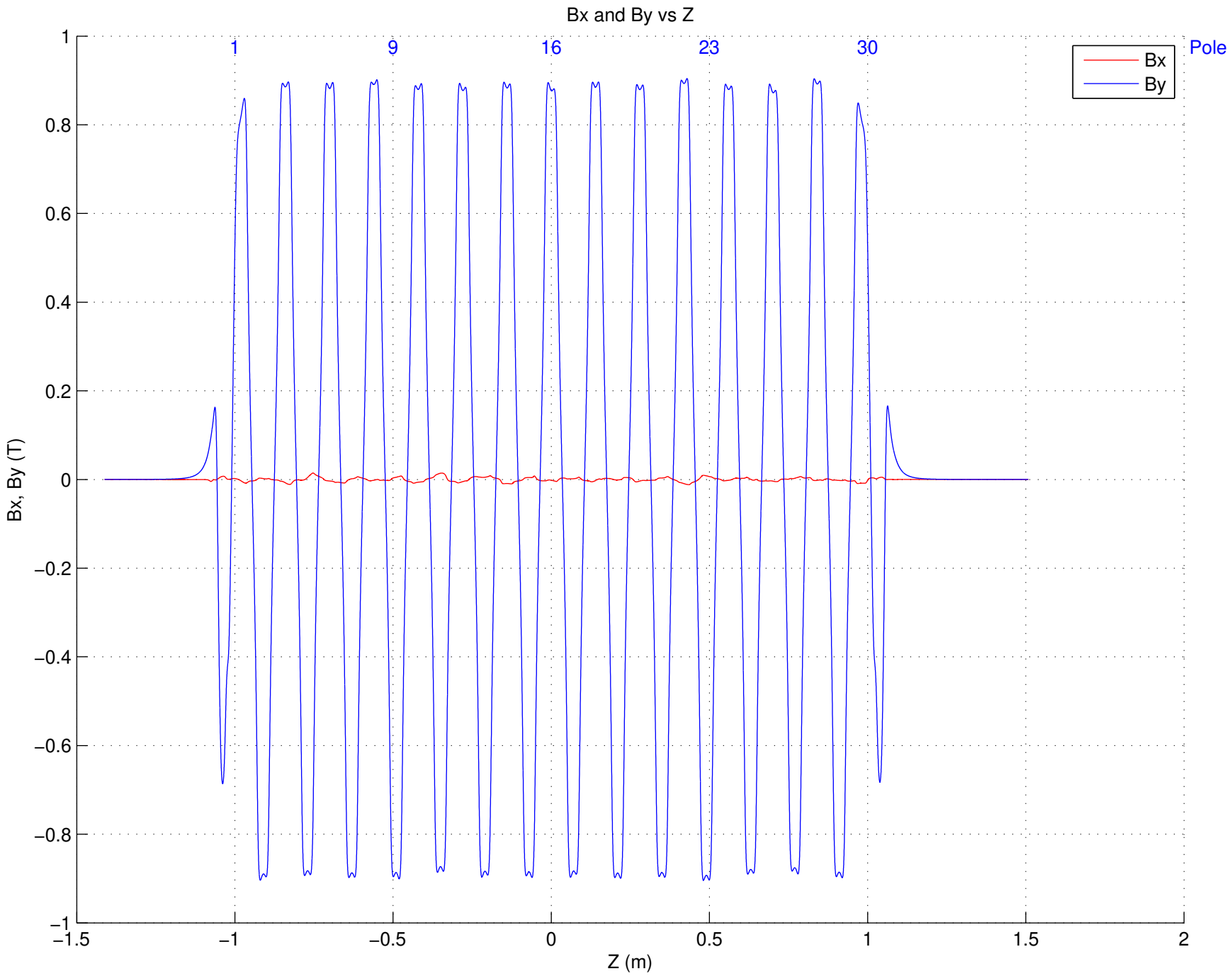
EPU Analysis
−−−−−−−−−−−

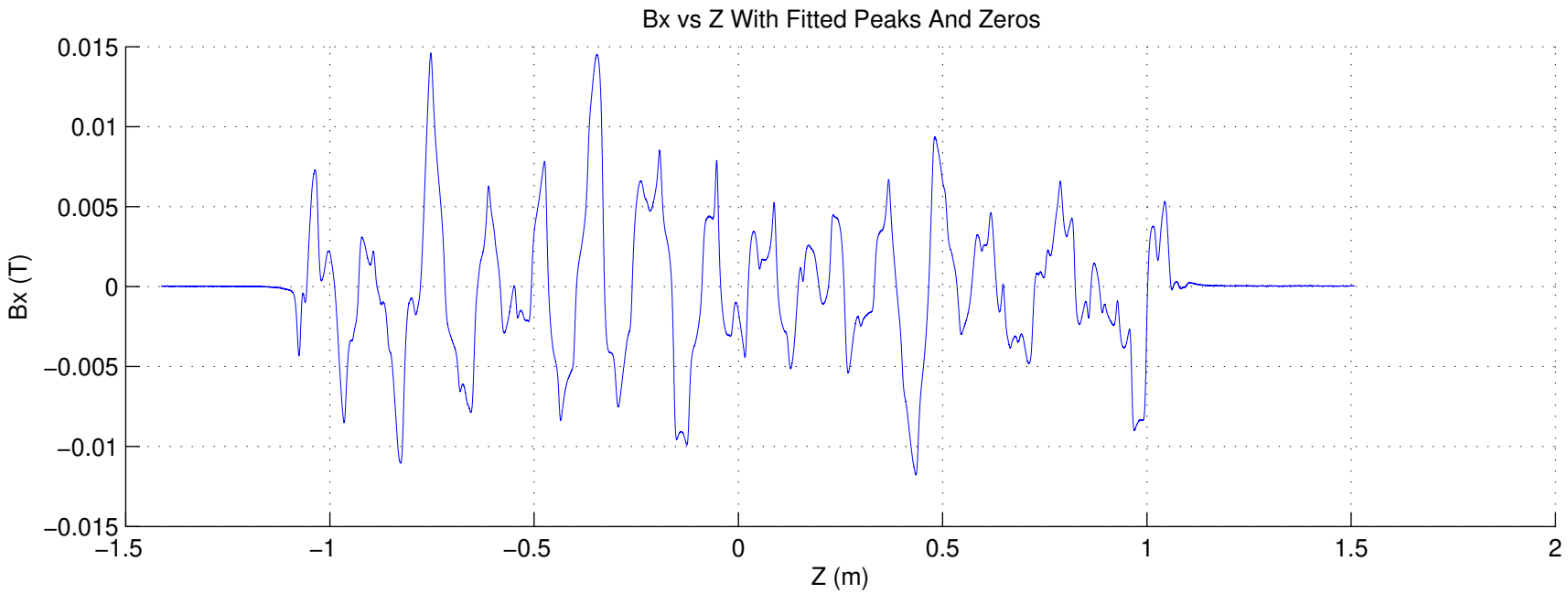
Parameters:
INPUT−FILE−DIR =S:\MagData\LCLS\Undulator\SSRL−BL5−EPU\DATASET0001\Rough Tuning\Z Scans\Run 024\
INPUT−FILE−NAME =x+00000−y+000−bscanz.dat
INPUT−FILE−TYPE =ZVXYBXYH
CORR−REQUIRED =1
GAMMA =5878
NOM−LAMBDA−U =140
NOM−K−VALUE =9
NOM−LAMBDA−R =0
NUM−POLES =31
NUM−END−POLES =4
CELL−LENGTH =3.126

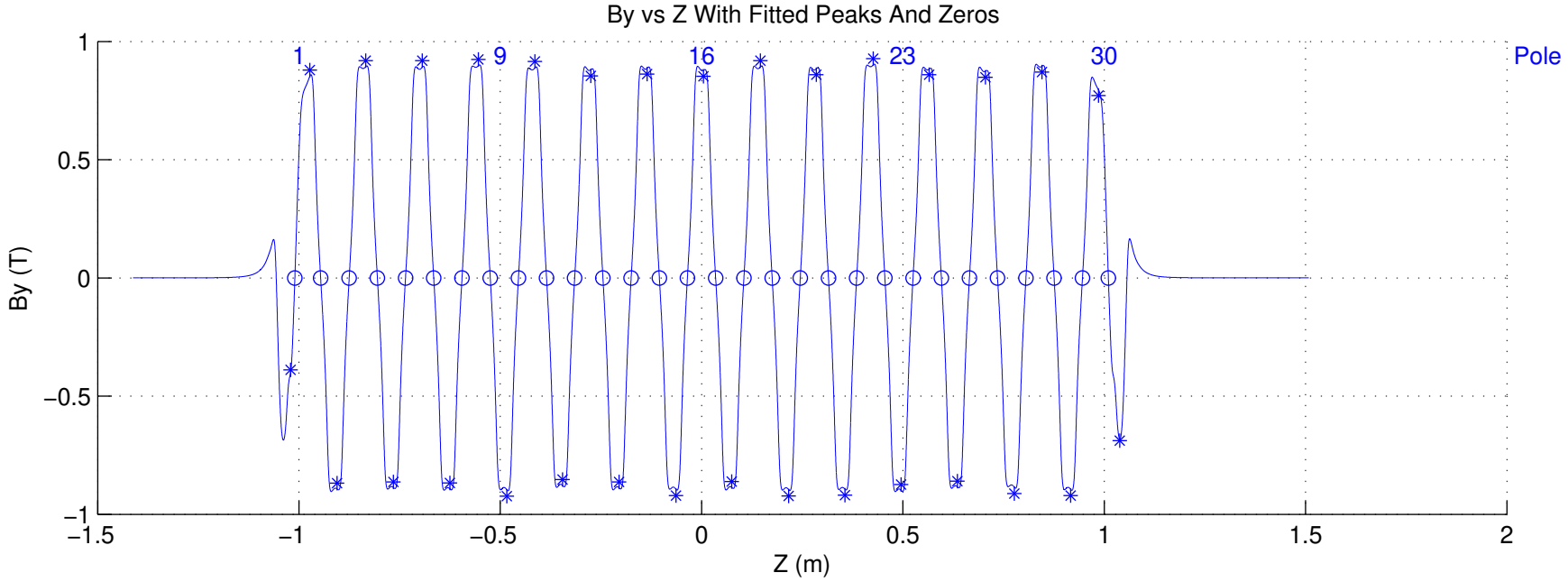

Bx Field Correction vs Zm
x 10^-6
Bx Corr (T)
7
7
7
7
7
7
7
7
7
0.5
1
1.5
2
2.5
3
3.5
4

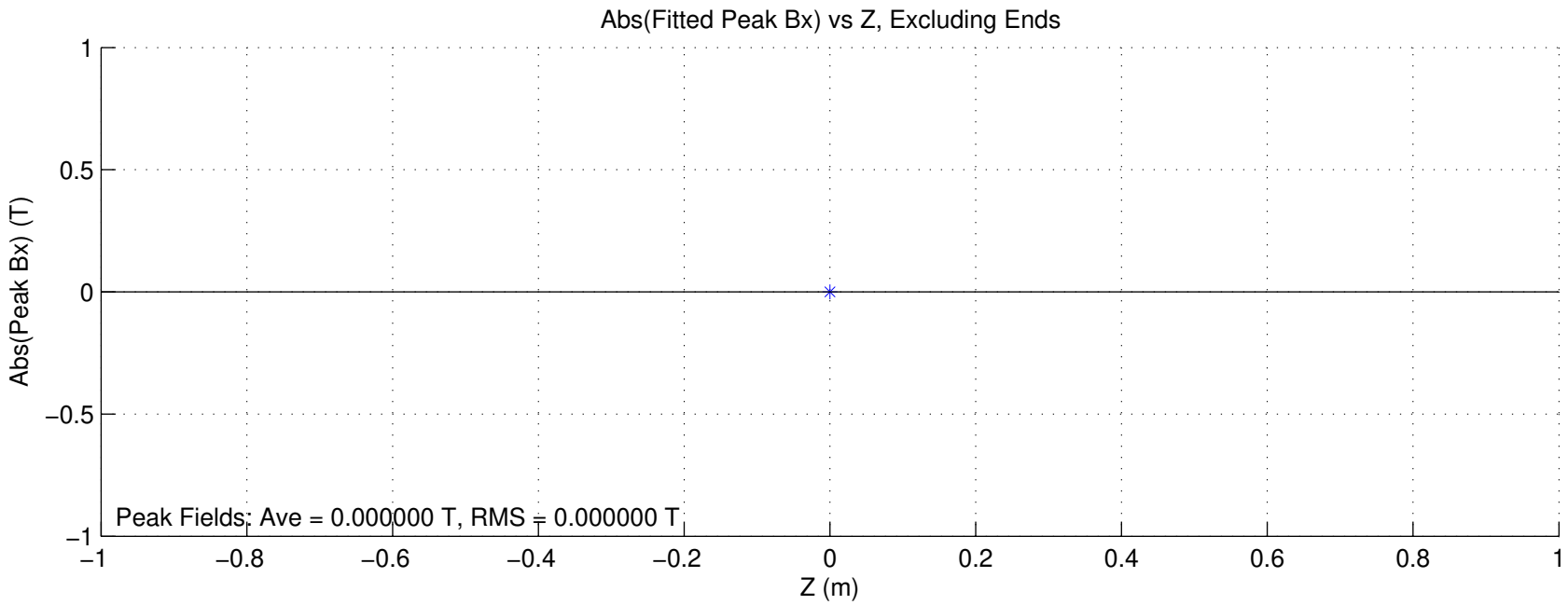

By Field Correction vs Zm
x 10^-6
By Corr (T)
5
5
5
5
5
5
5
5
5
0.5
1
1.5
2
2.5
3
3.5
4
Zm Measurement Position (m)

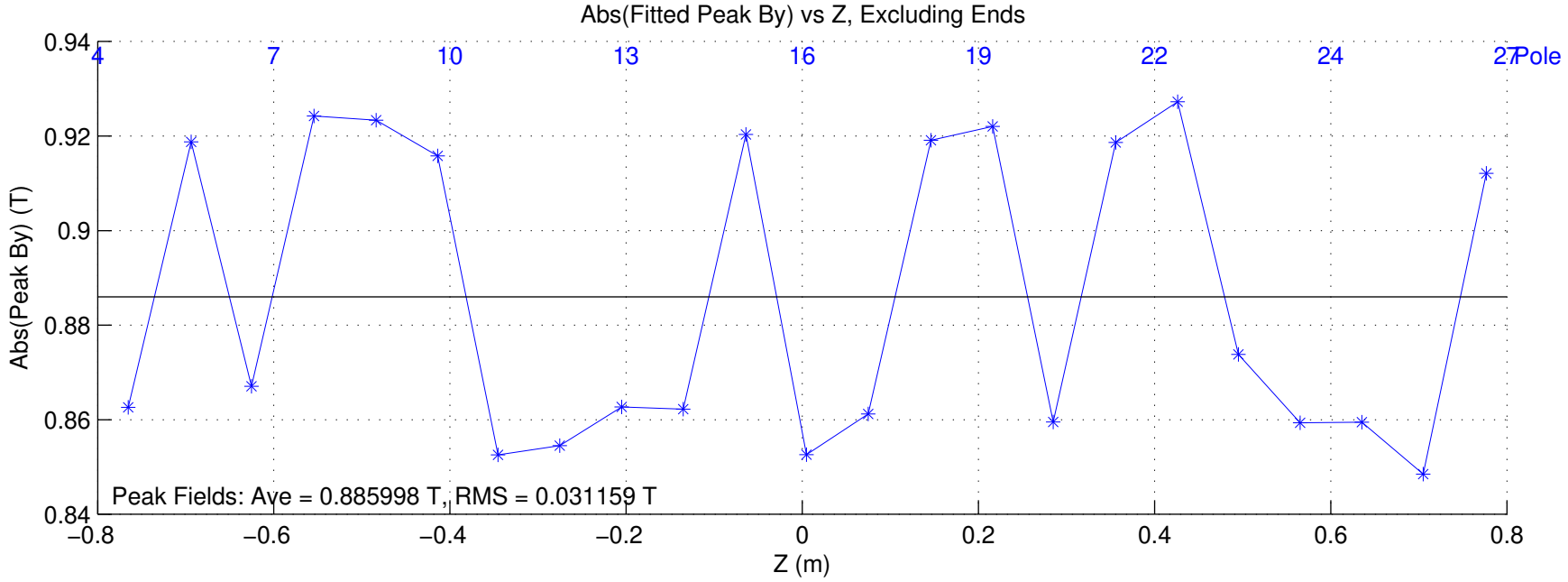

Bx, By, Bz vs Zm
Bx (T)
0.015
0.01
0.005
0
−0.005
−0.01
−0.015
By (T)
1
0.5
0
−0.5
−1
Bz (T)
1
0.5
0
−0.5
−1
0.5
1
1.5
2
2.5
3
3.5
4
Zm Measurement Position (m)

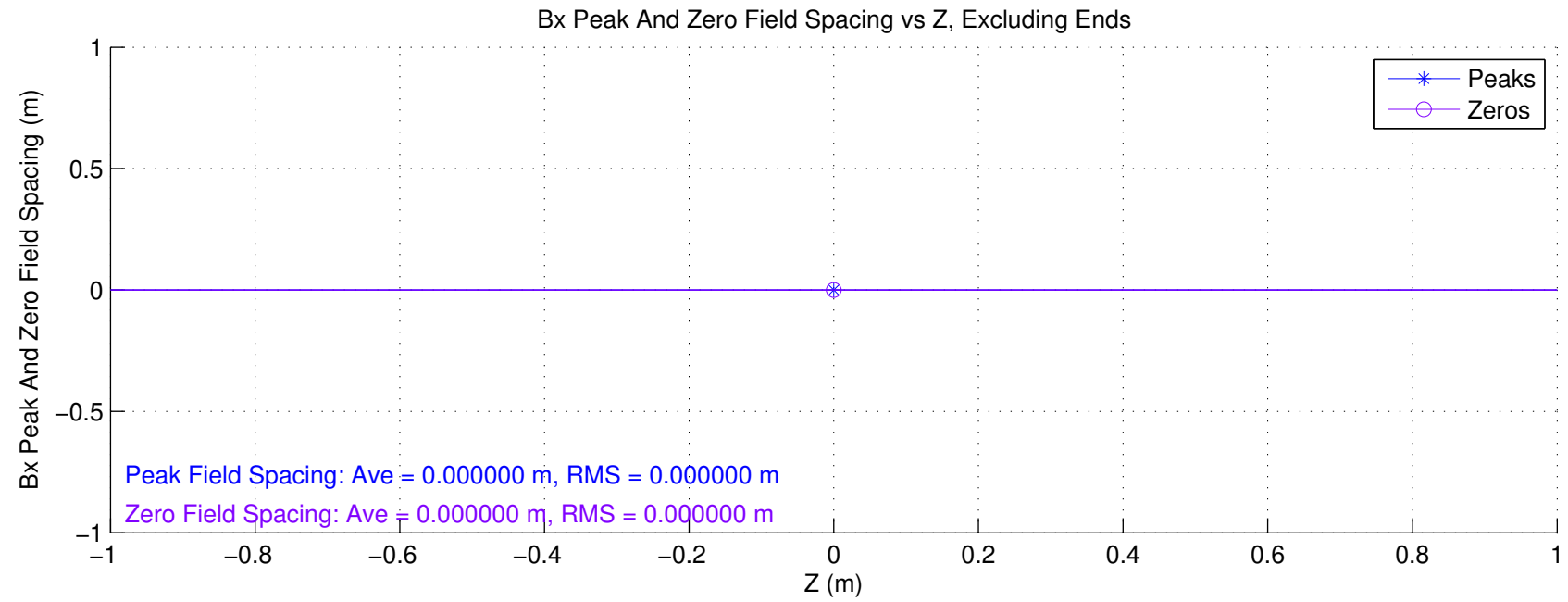

Bx and By vs Z
1
9
16
23
30
Pole
Bx
By
Bx, By (T)
Z (m)
1
0.8
0.6
0.4
0.2
0
−0.2
−0.4
−0.6
−0.8
−1
−1.5
−1
−0.5
0
0.5
1
1.5
2

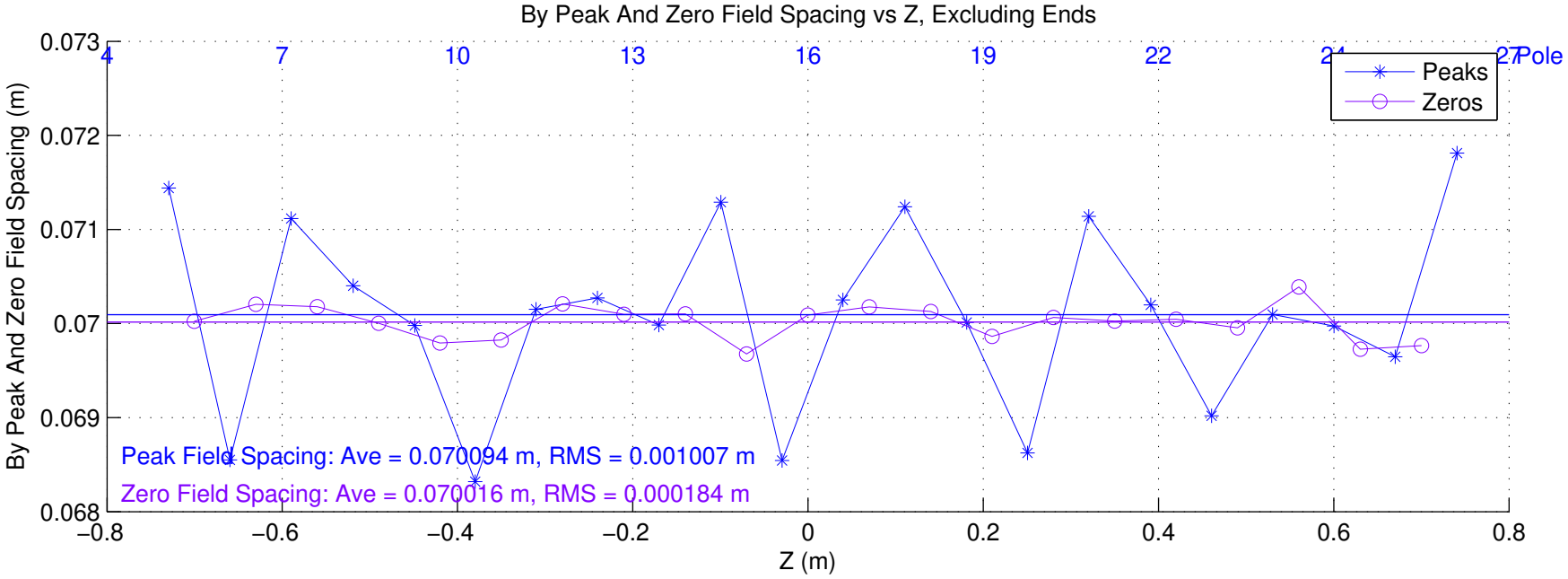

Bx vs Z With Fitted Peaks And Zeros
Bx (T)
Z (m)
0.015
0.01
0.005
0
−0.005
−0.01
−0.015
−1.5
−1
−0.5
0
0.5
1
1.5
2

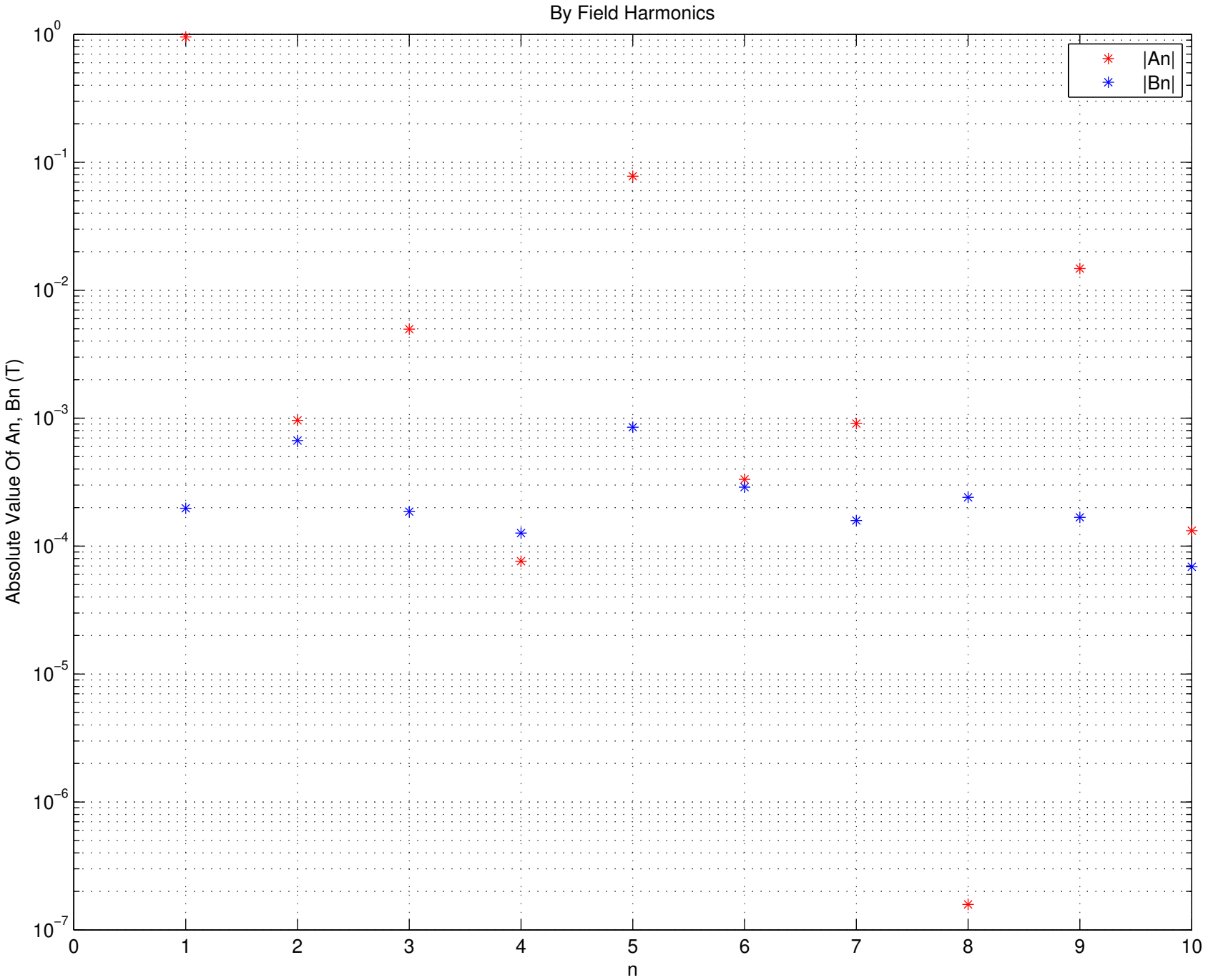

By vs Z With Fitted Peaks And Zeros
By (T)
Z (m)
1
9
16
23
30
Pole
1
0.5
0
−0.5
−1
−1.5
−1
−0.5
0
0.5
1
1.5
2


Abs(Fitted Peak Bx) vs Z, Excluding Ends
Abs(Peak Bx) (T)
Z (m)
Peak Fields: Ave = 0.000000 T, RMS = 0.000000 T
1
0.5
0
−0.5
−1
−1
−0.8
−0.6
−0.4
−0.2
0
0.2
0.4
0.6
0.8
1


Abs(Fitted Peak By) vs Z, Excluding Ends
Abs(Peak By) (T)
Z (m)
Pole
Peak Fields: Ave = 0.885998 T, RMS = 0.031159 T
4
7
10
13
16
19
22
24
27
0.94
0.92
0.9
0.88
0.86
0.84
−0.8
−0.6
−0.4
−0.2
0
0.2
0.4
0.6
0.8


Bx Peak And Zero Field Spacing vs Z, Excluding Ends
Bx Peak And Zero Field Spacing (m)
Z (m)
Peaks
Zeros
Peak Field Spacing: Ave = 0.000000 m, RMS = 0.000000 m
Zero Field Spacing: Ave = 0.000000 m, RMS = 0.000000 m
1
0.5
0
−0.5
−1
−1
−0.8
−0.6
−0.4
−0.2
0
0.2
0.4
0.6
0.8
1


By Peak And Zero Field Spacing vs Z, Excluding Ends
By Peak And Zero Field Spacing (m)
Z (m)
Pole
Peaks
Zeros
Peak Field Spacing: Ave = 0.070094 m, RMS = 0.001007 m
Zero Field Spacing: Ave = 0.070016 m, RMS = 0.000184 m
0.073
0.072
0.071
0.07
0.069
0.068
4
7
10
13
16
19
22
27
−0.8
−0.6
−0.4
−0.2
0
0.2
0.4
0.6
0.8


By Field Harmonics
|An|
|Bn|
Absolute Value Of An, Bn (T)
n
10^{0}
10^{-1}
10^{-2}
10^{-3}
10^{-4}
10^{-5}
10^{-6}
10^{-7}
0
1
2
3
4
5
6
7
8
9
10