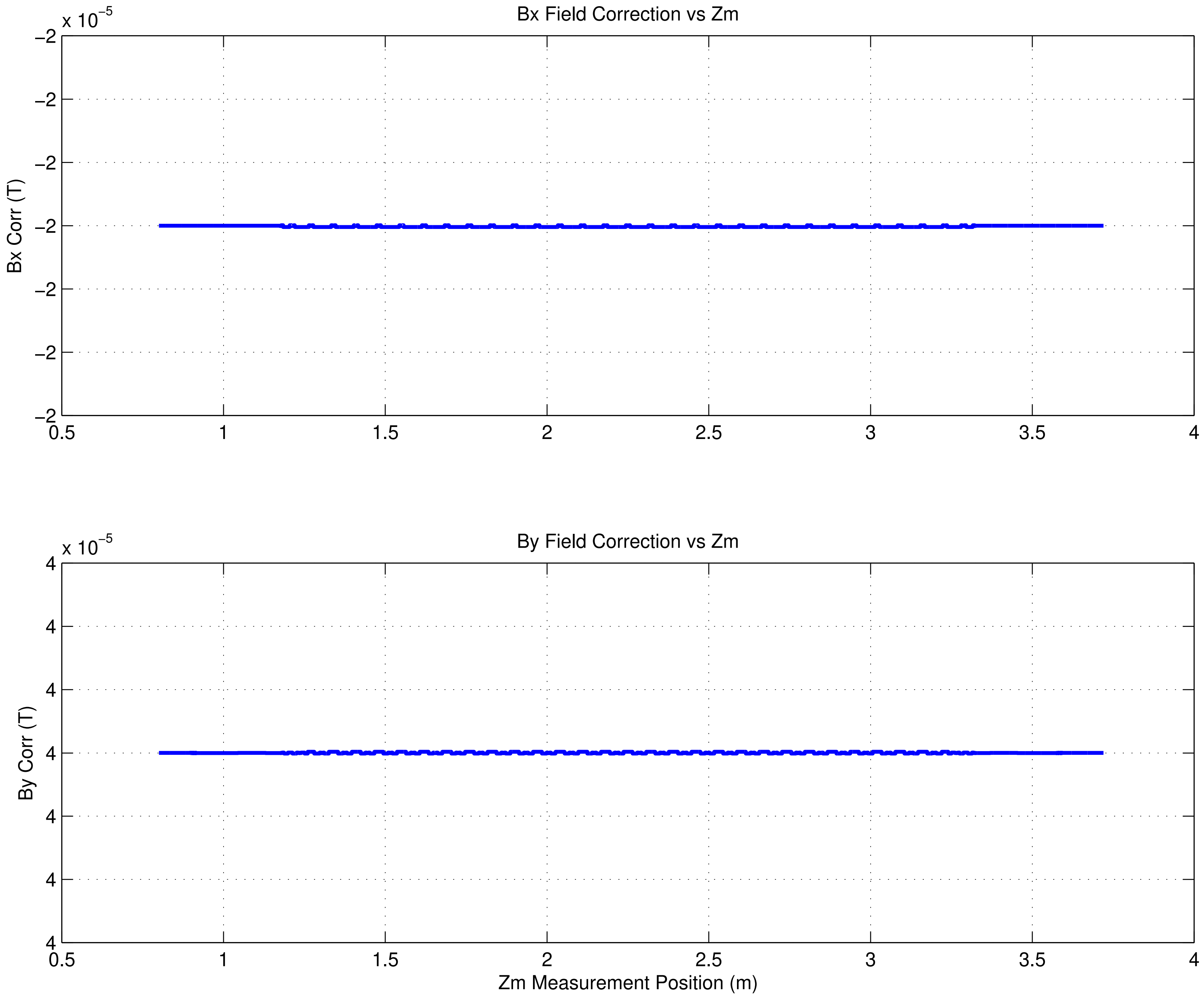
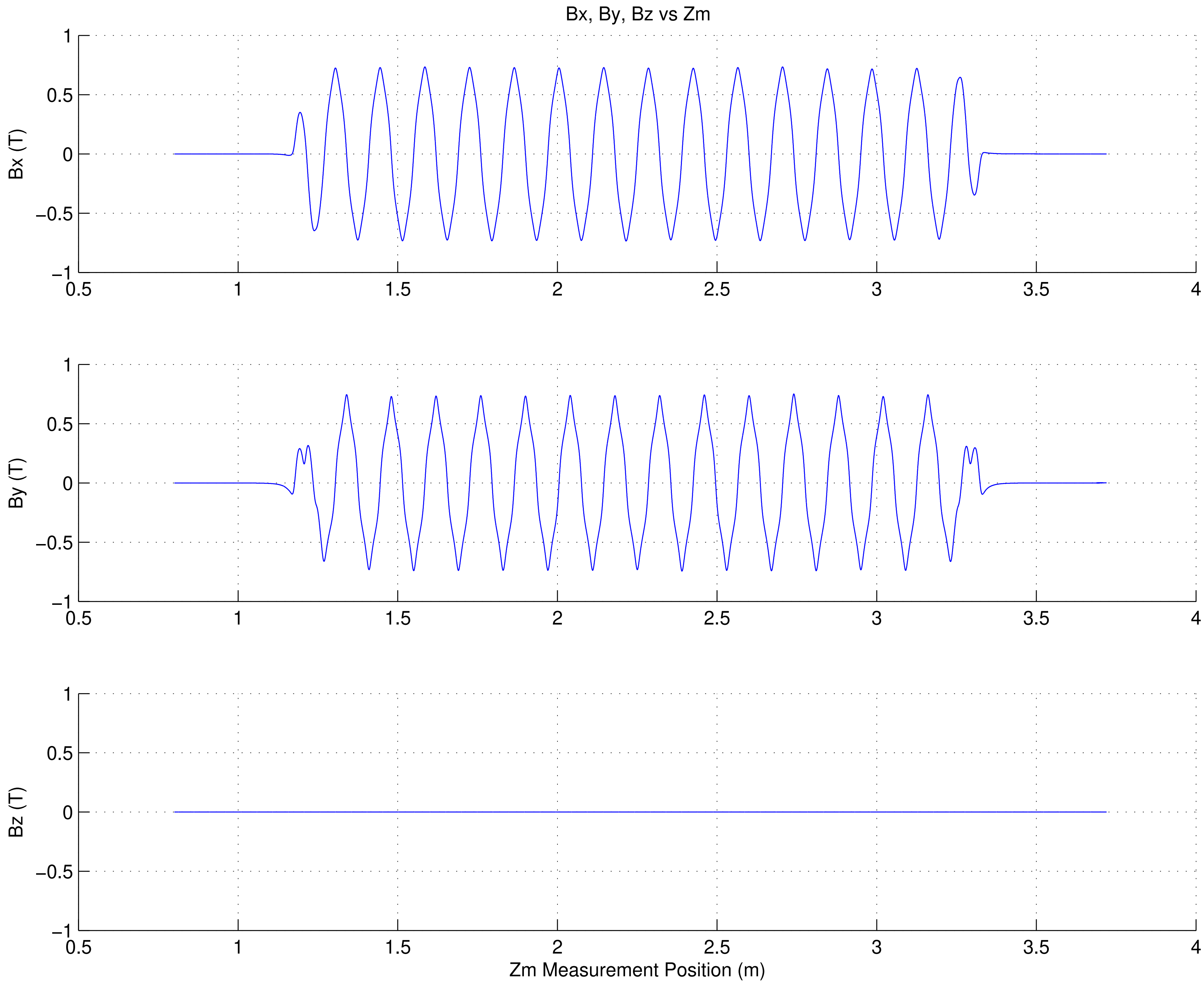
SLAC Magnetic Measurements

EPU Analysis
−−−−−−−−−−−−

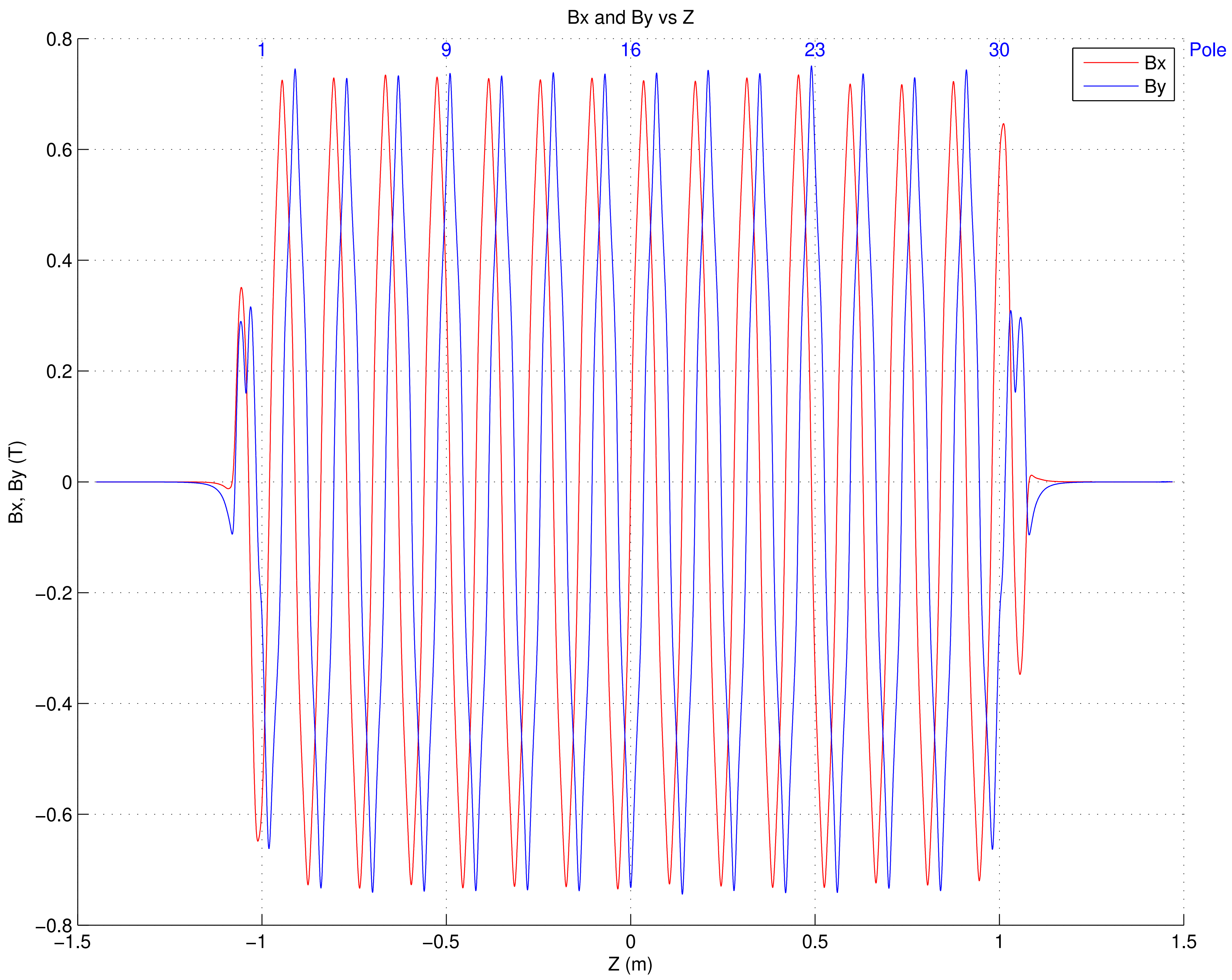
Parameters:
INPUT−FILE−DIR =s:\MagData\LCLS\Undulator\SSRL−BL5−EPU\DATASET0001\Rough Tuning\Z Scans\Run 035\
INPUT−FILE−NAME =x+00000−y+000−bscanz.dat
INPUT−FILE−TYPE =ZVXYBXYH
CORR−REQUIRED =1
GAMMA =5878
NOM−LAMBDA−U =140
NOM−K−VALUE =9
NOM−LAMBDA−R =0
NUM−POLES =31
NUM−END−POLES =4
CELL−LENGTH =3.126



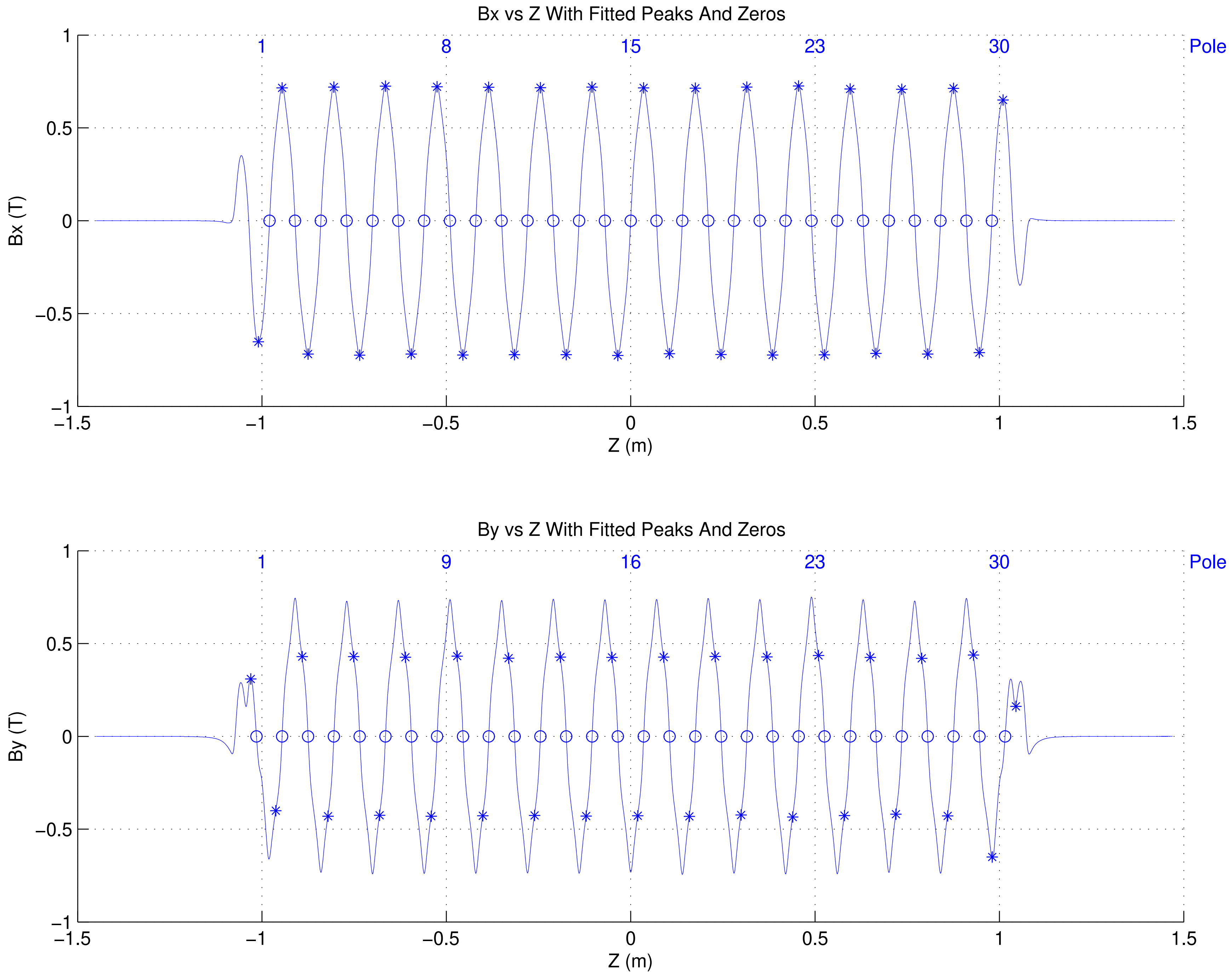
Bx Field Correction vs Zm
x 10^−5
−2
Bx Corr (T)
0.5
1
1.5
2
2.5
3
3.5
4
By Field Correction vs Zm
x 10^−5
4
By Corr (T)
Zm Measurement Position (m)

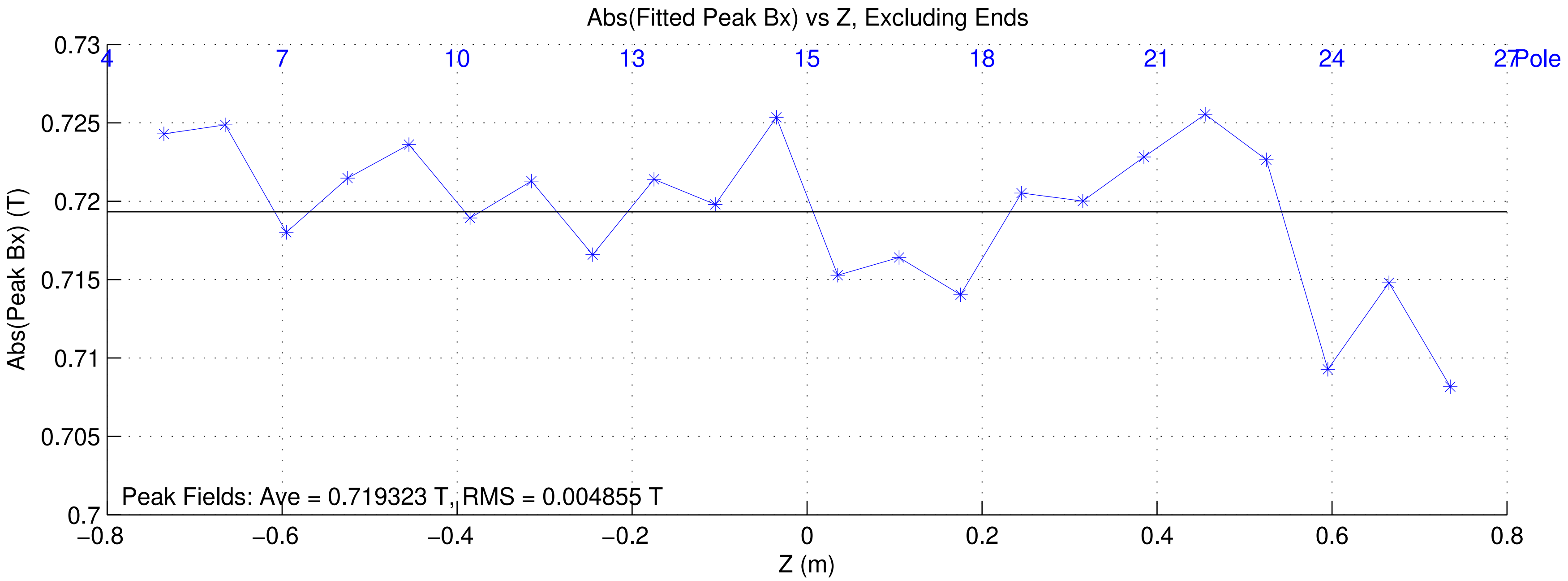


Bx, By, Bz vs Zm
Bx (T)
By (T)
Bz (T)
1
0.5
0
−0.5
−1
0.5
1
1.5
2
2.5
3
3.5
4
Zm Measurement Position (m)

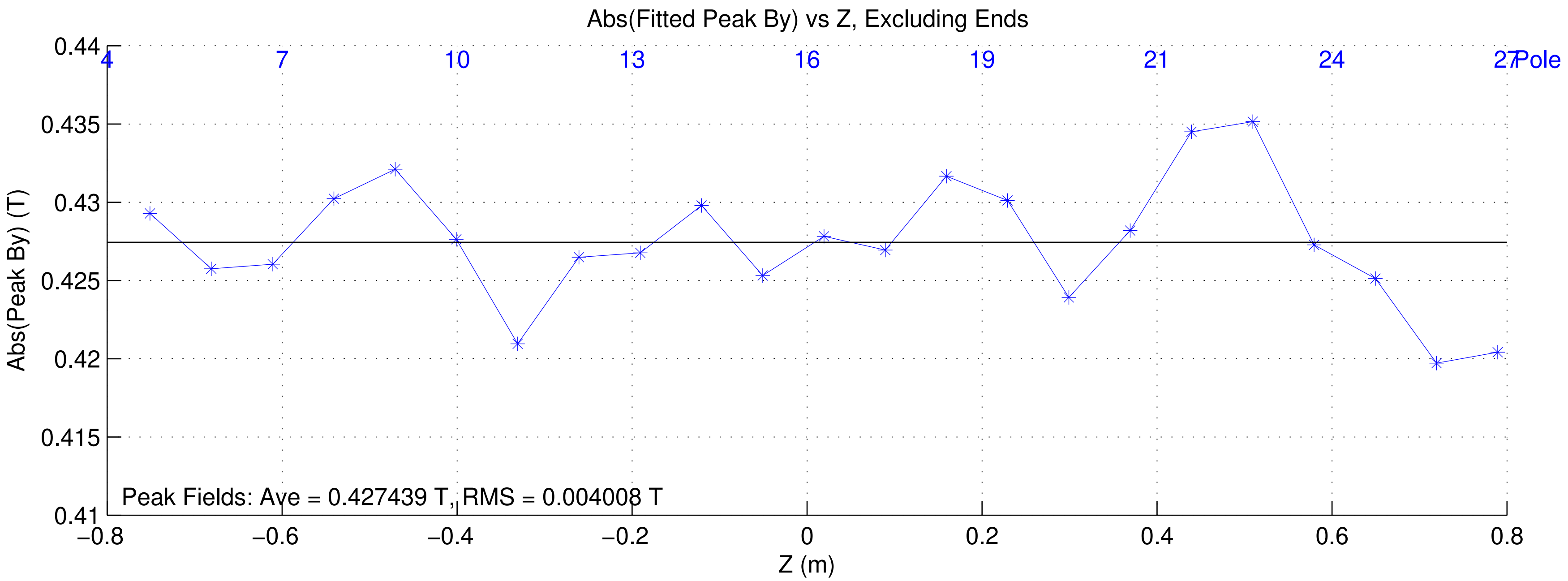


Bx and By vs Z
Bx
By
Pole
1
9
16
23
30
Bx, By (T)
Z (m)
0.8
0.6
0.4
0.2
0
−0.2
−0.4
−0.6
−0.8
−1.5
−1
−0.5
0
0.5
1
1.5

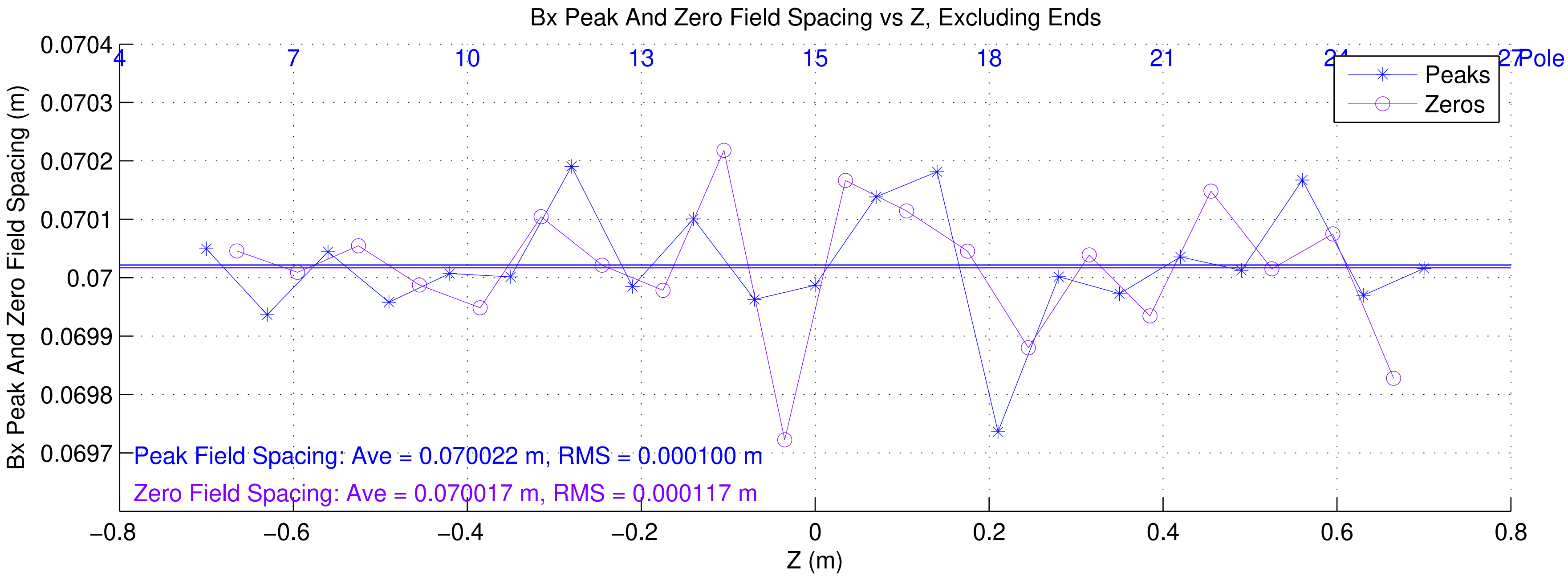

Bx vs Z With Fitted Peaks And Zeros
Bx (T)
Z (m)
1
8
15
23
30
Pole
1
0.5
0
−0.5
−1
−1.5
−1
−0.5
0
0.5
1
1.5
By vs Z With Fitted Peaks And Zeros
By (T)
Z (m)
1
9
16
23
30
Pole



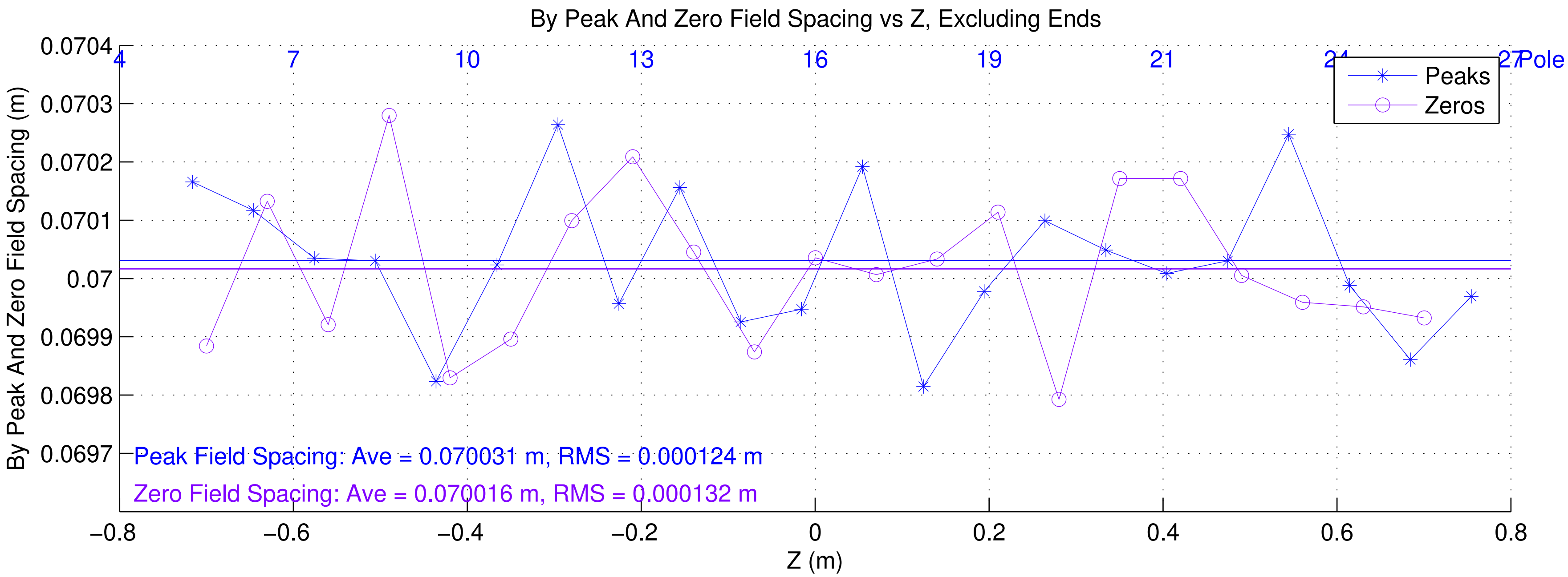
Abs(Fitted Peak Bx) vs Z, Excluding Ends
Abs(Peak Bx) (T)
Z (m)
Pole
Peak Fields: Ave = 0.719323 T, RMS = 0.004855 T



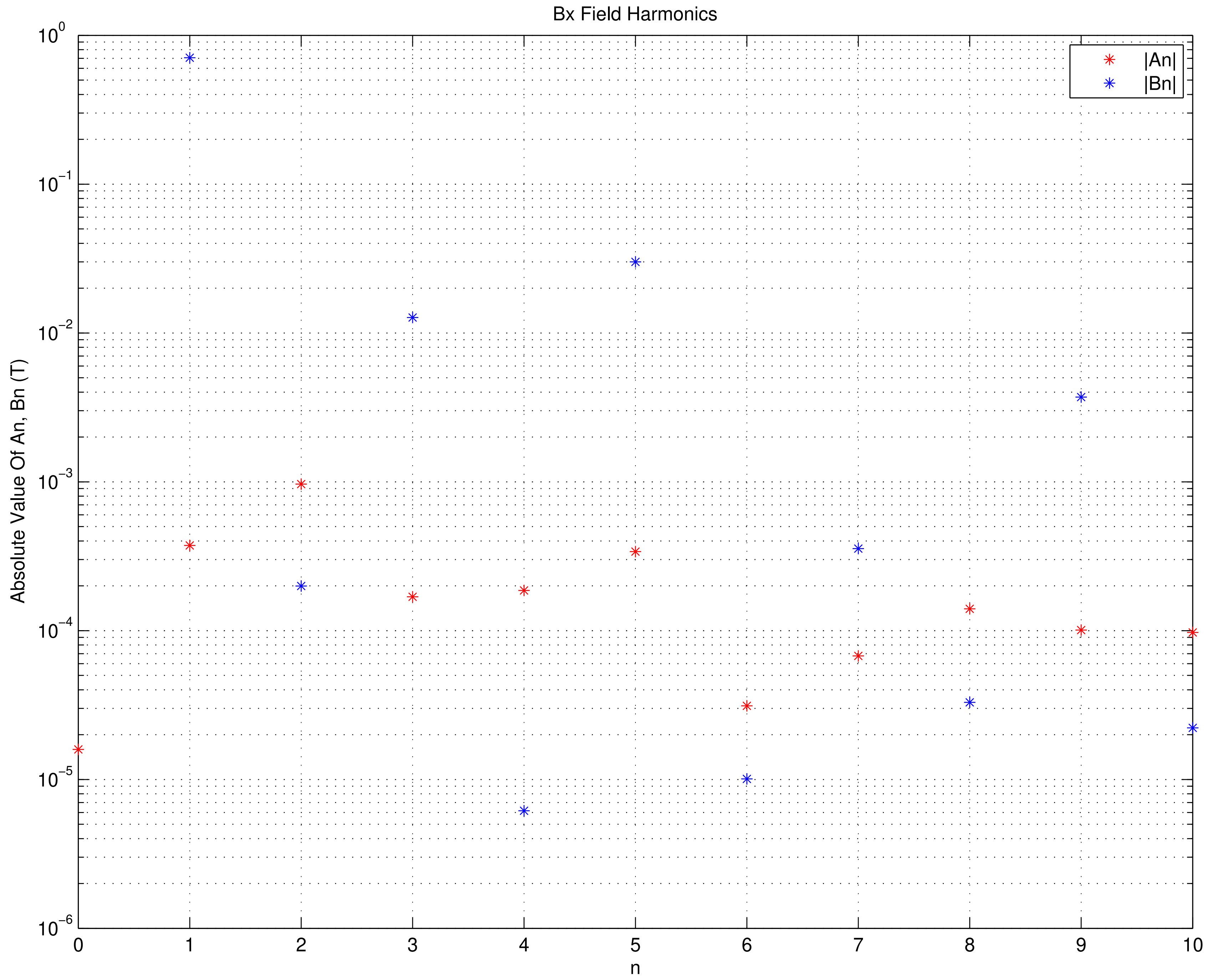
Abs(Fitted Peak By) vs Z, Excluding Ends
Abs(Peak By) (T)
Z (m)
Pole
Peak Fields: Ave = 0.427439 T, RMS = 0.004008 T



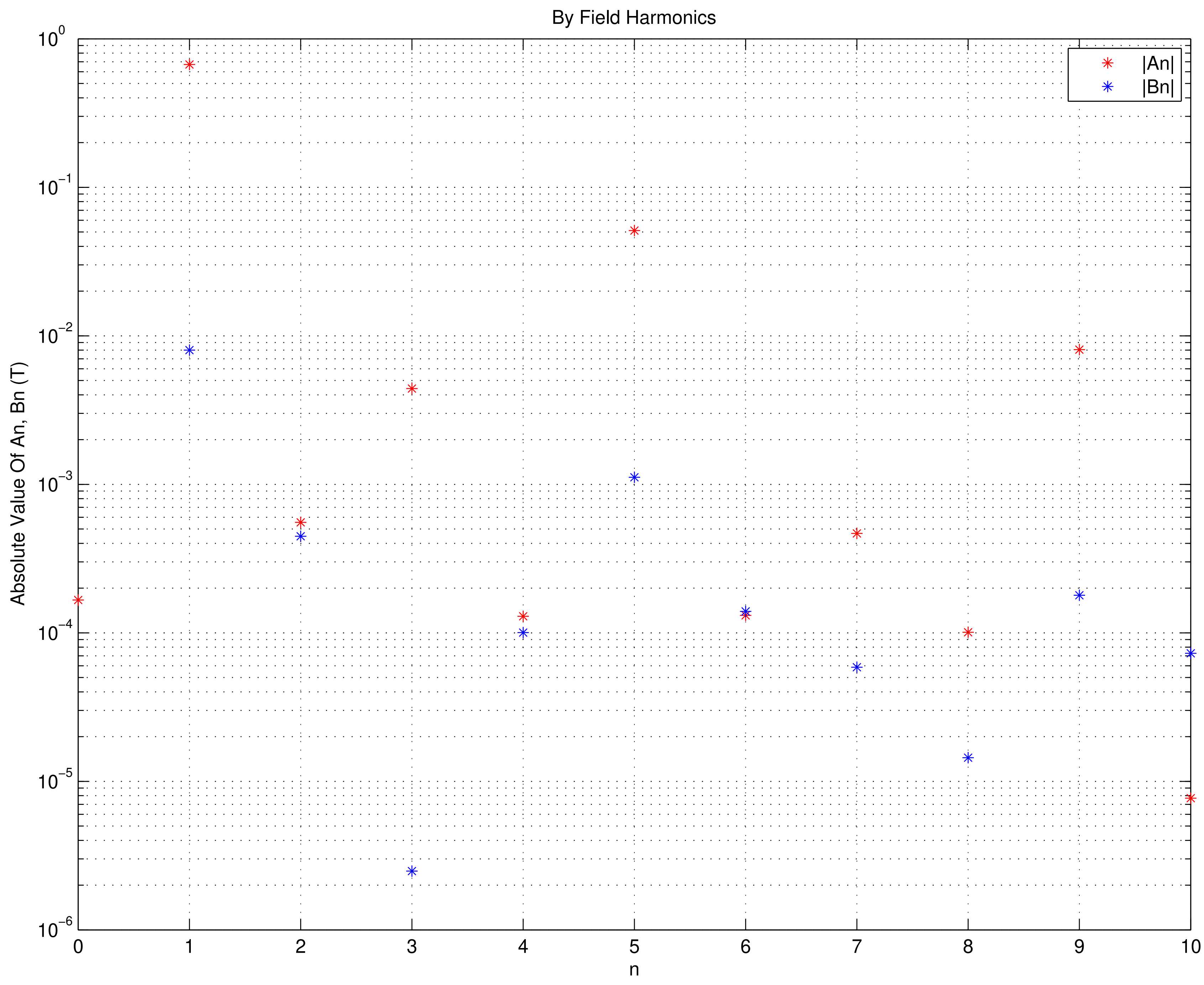
Bx Peak And Zero Field Spacing vs Z, Excluding Ends
Bx Peak And Zero Field Spacing (m)
Z (m)
Pole
Peaks
Zeros
Peak Field Spacing: Ave = 0.070022 m, RMS = 0.000100 m
Zero Field Spacing: Ave = 0.070017 m, RMS = 0.000117 m



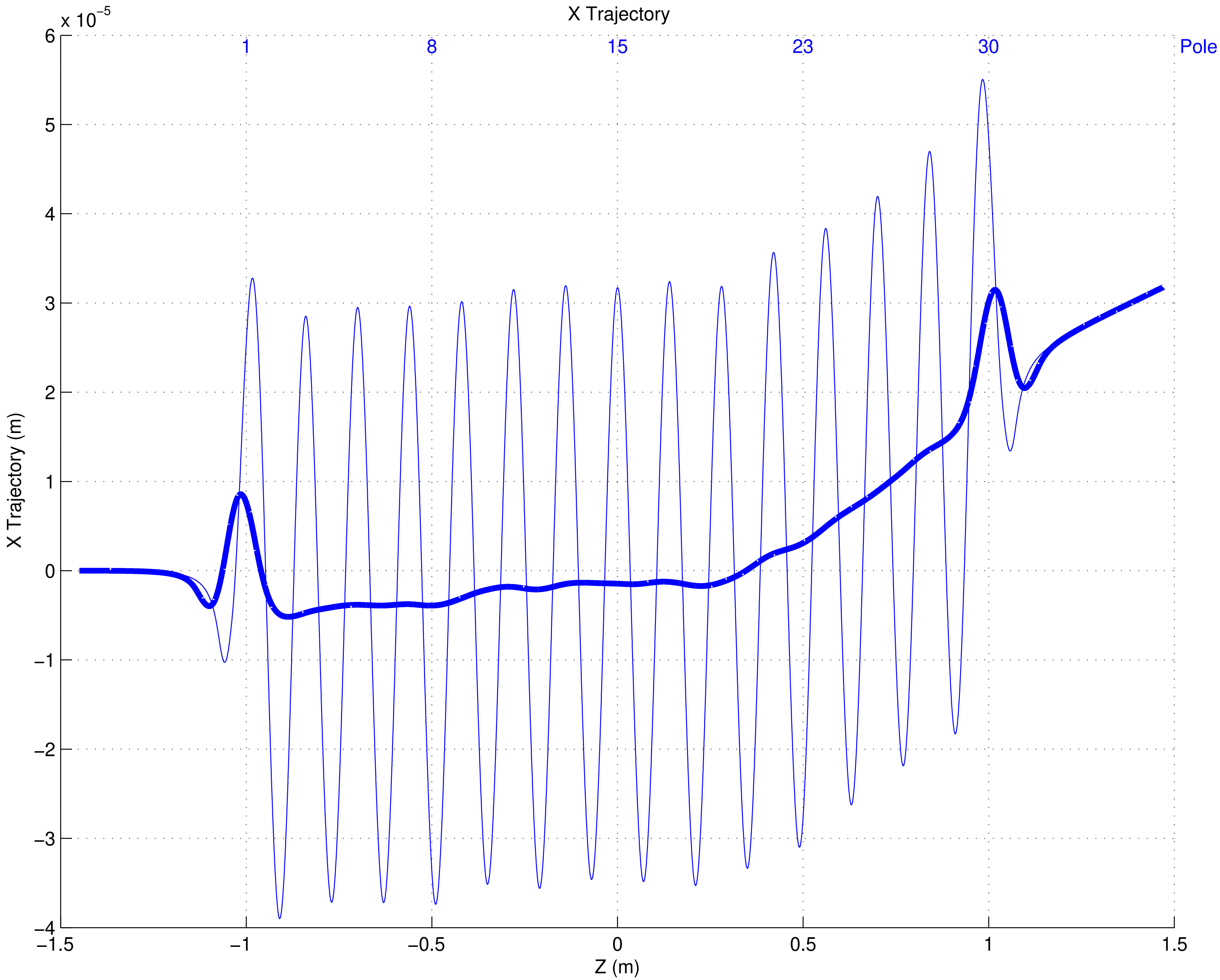
By Peak And Zero Field Spacing vs Z, Excluding Ends
By Peak And Zero Field Spacing (m)
Z (m)
Pole
Peaks
Zeros
Peak Field Spacing: Ave = 0.070031 m, RMS = 0.000124 m
Zero Field Spacing: Ave = 0.070016 m, RMS = 0.000132 m



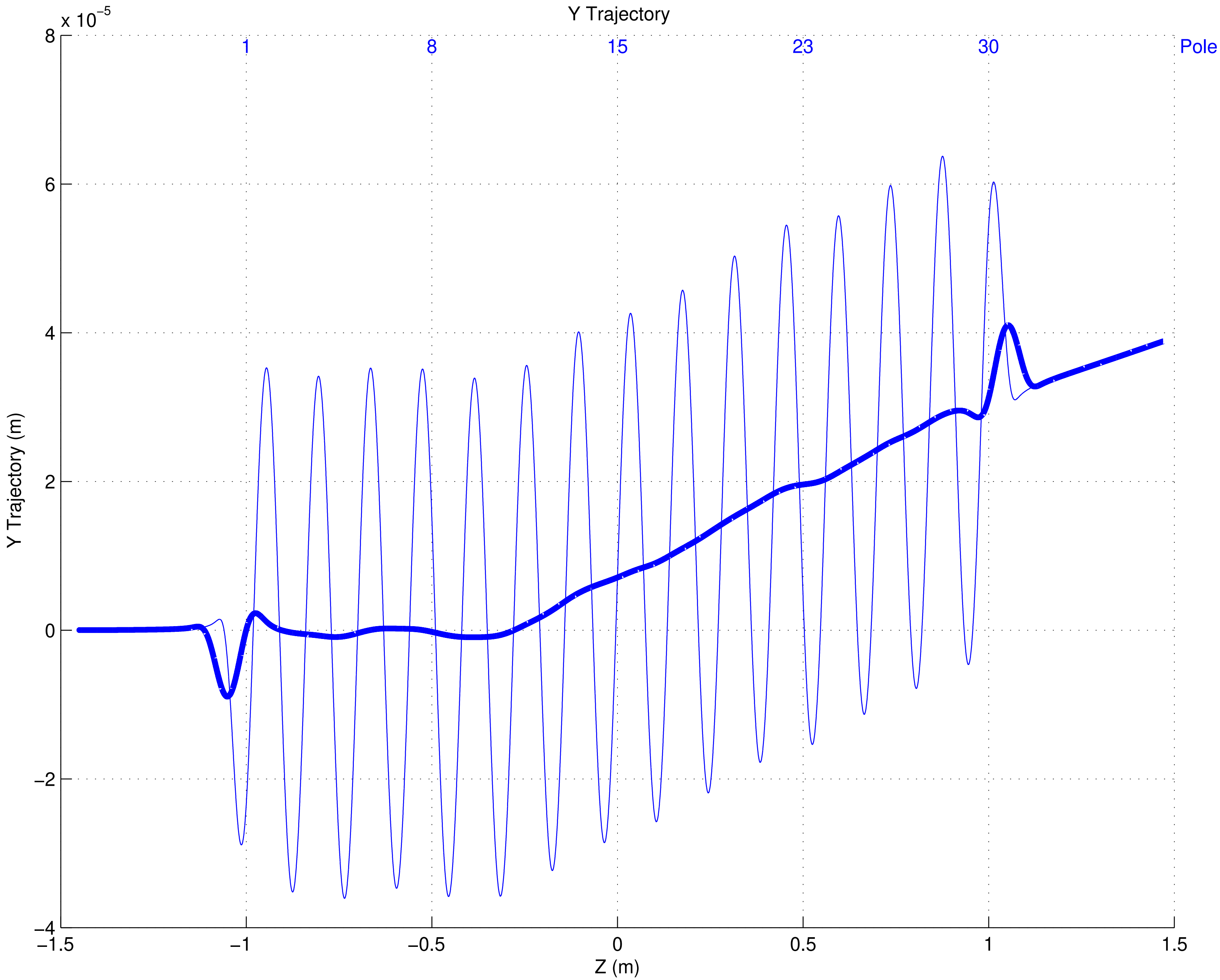
Bx Field Harmonics
|An|
|Bn|
Absolute Value Of An, Bn (T)
10^{0}
10^{-1}
10^{-2}
10^{-3}
10^{-4}
10^{-5}
10^{-6}
0
1
2
3
4
5
6
7
8
9
10
n



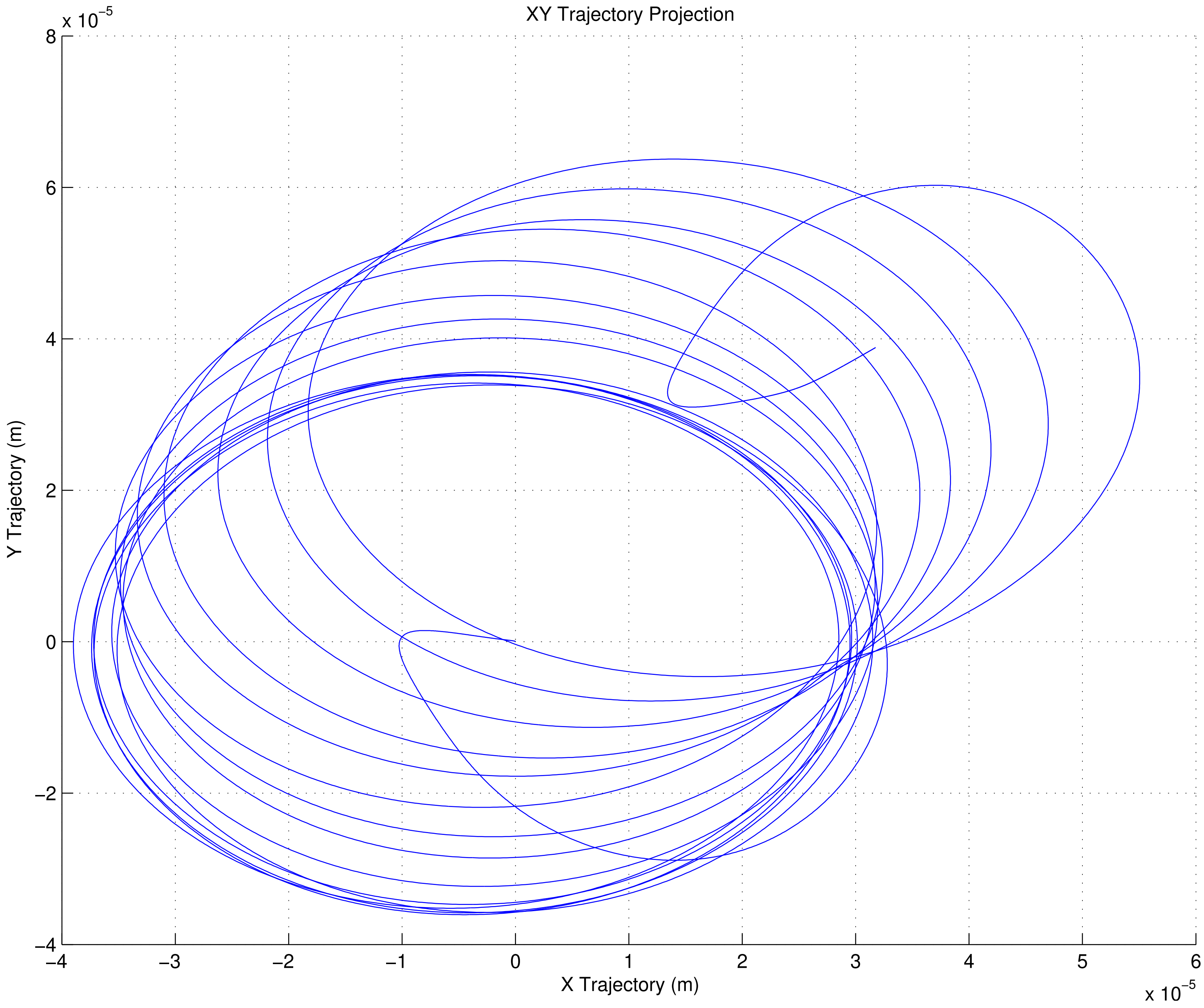
By Field Harmonics
|An|
|Bn|
Absolute Value Of An, Bn (T)
n
10^0
10^−1
10^−2
10^−3
10^−4
10^−5
10^−6
0
1
2
3
4
5
6
7
8
9
10



X Trajectory
x 10^-5
1
8
15
23
30
Pole
6
5
4
3
2
1
0
−1
−2
−3
−4
X Trajectory (m)
−1.5
−1
−0.5
0
0.5
1
1.5
Z (m)



Y Trajectory
x 10^-5
1
8
15
23
30
Pole
Y Trajectory (m)
Z (m)
8
6
4
2
0
−2
−4
−1.5
−1
−0.5
0
0.5
1
1.5


XY Trajectory Projection
x 10^−5
8
6
4
2
0
−2
−4
Y Trajectory (m)
−4
−3
−2
−1
0
1
2
3
4
5
6
X Trajectory (m)
x 10^−5