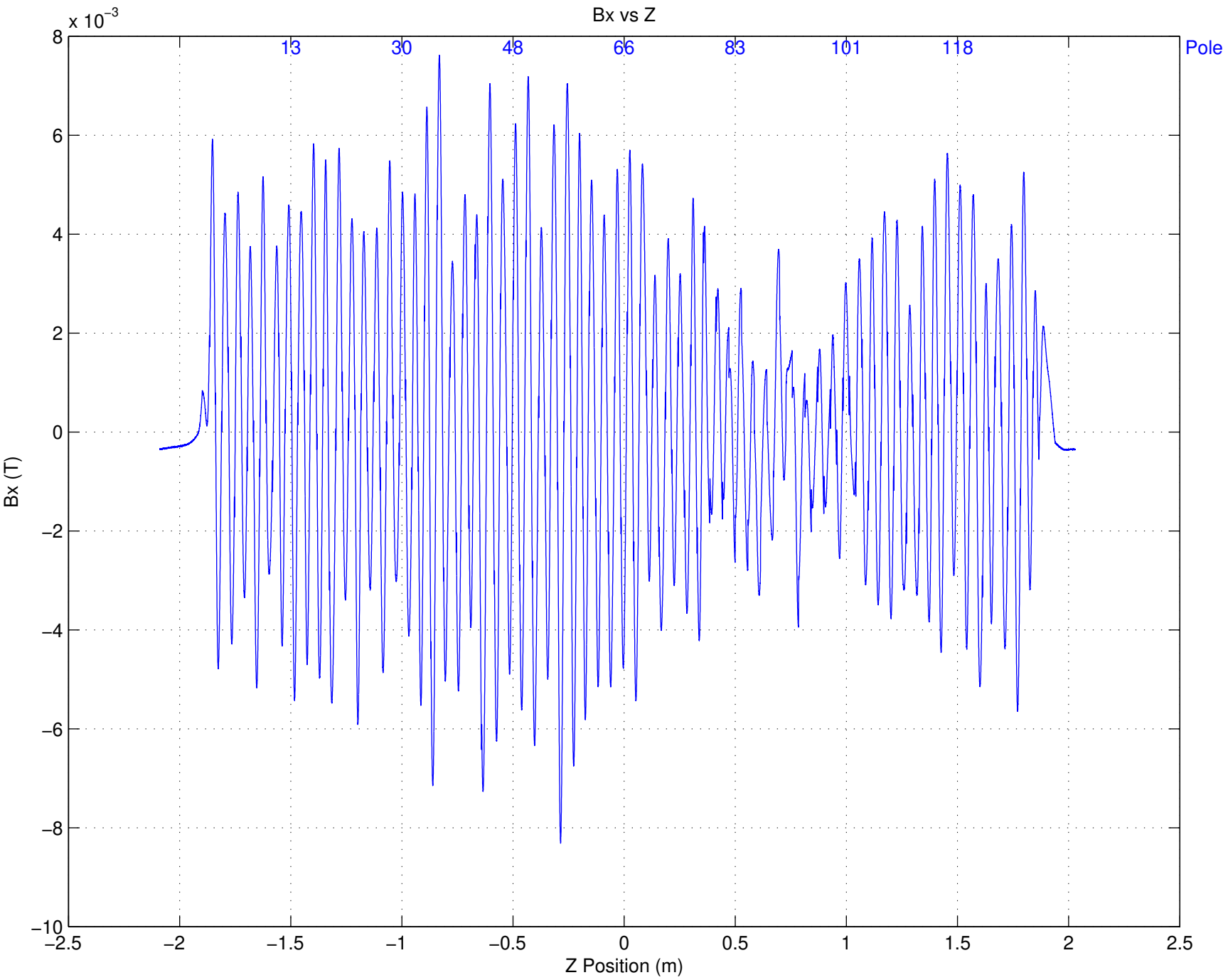
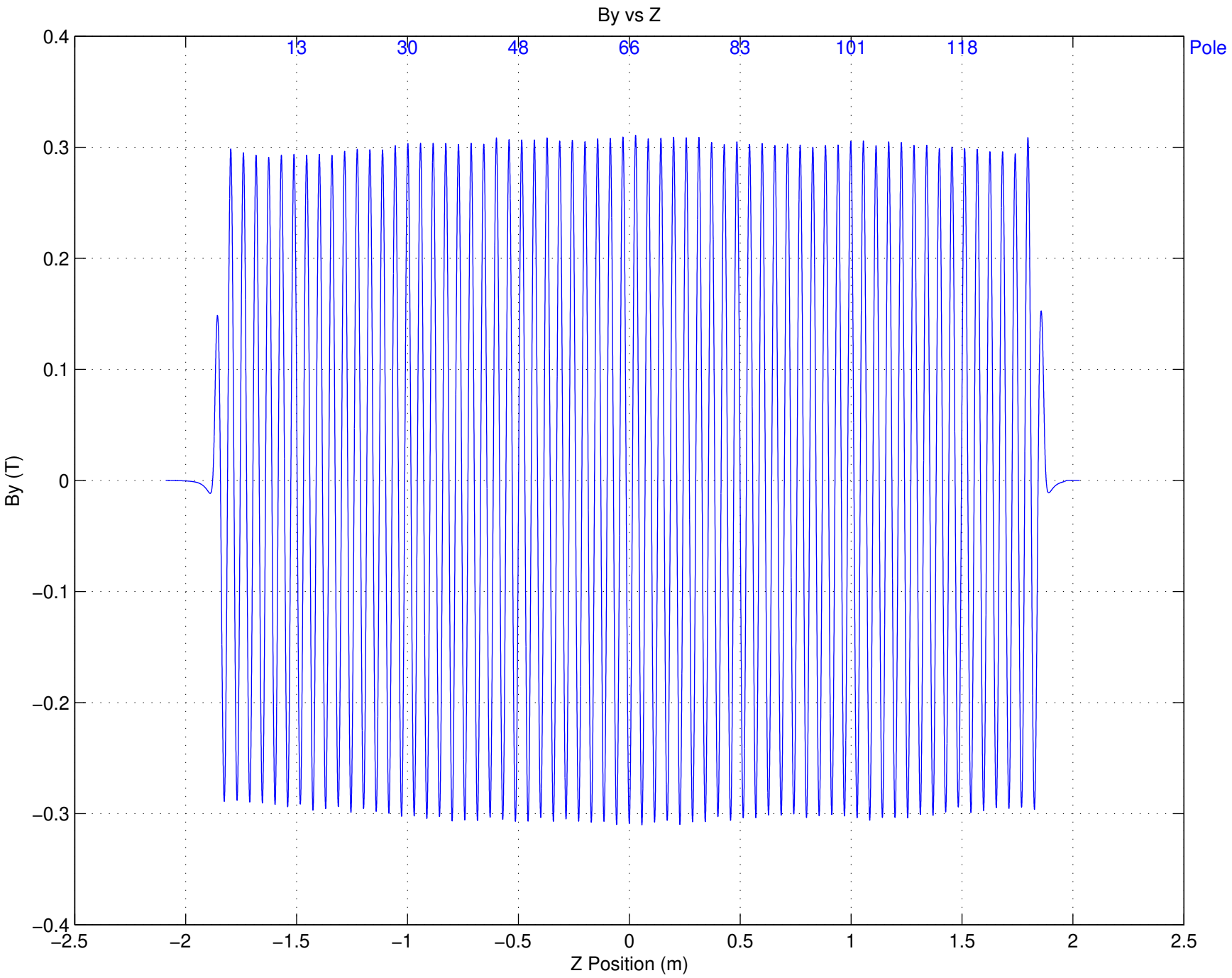
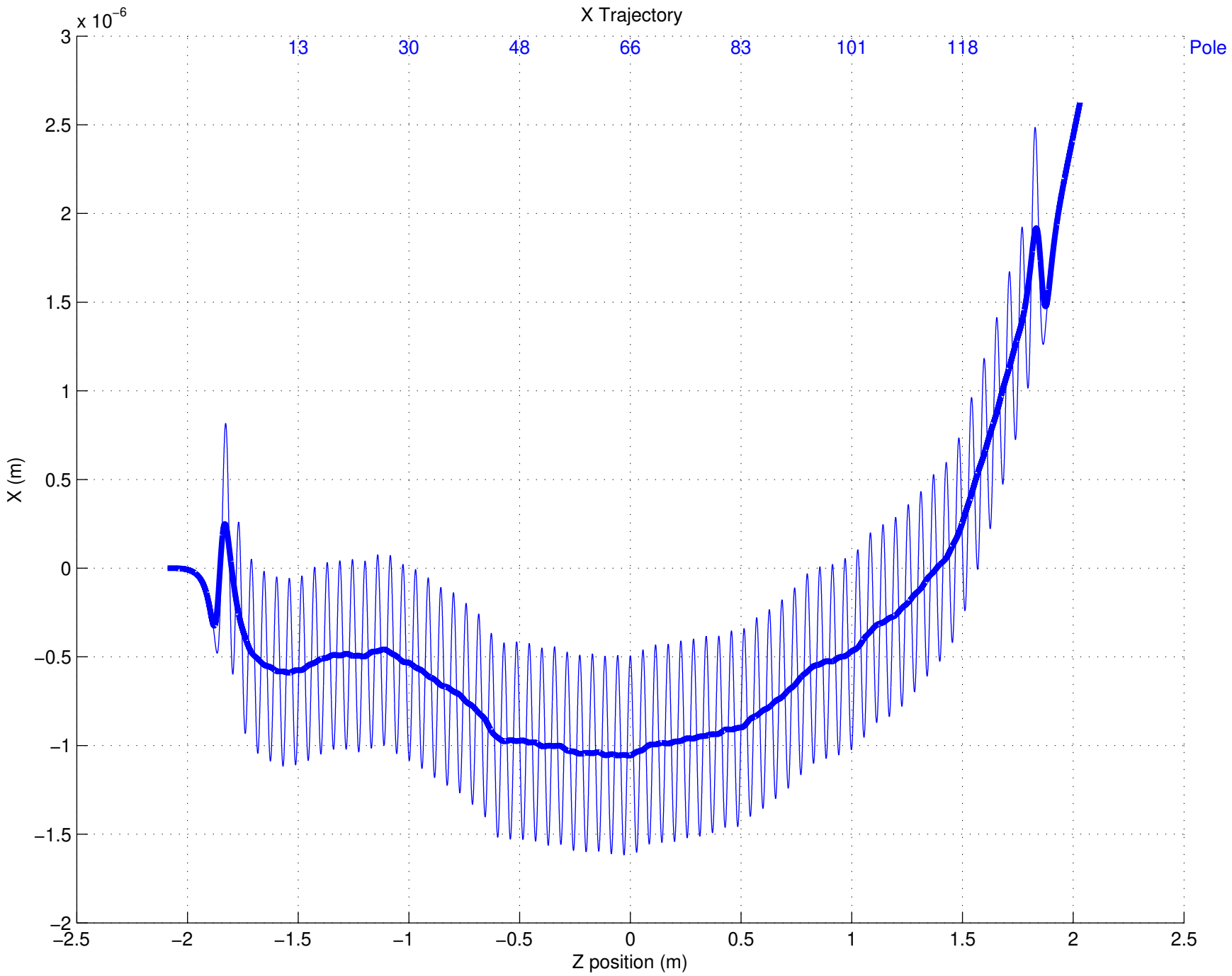
SLAC Magnetic Measurements

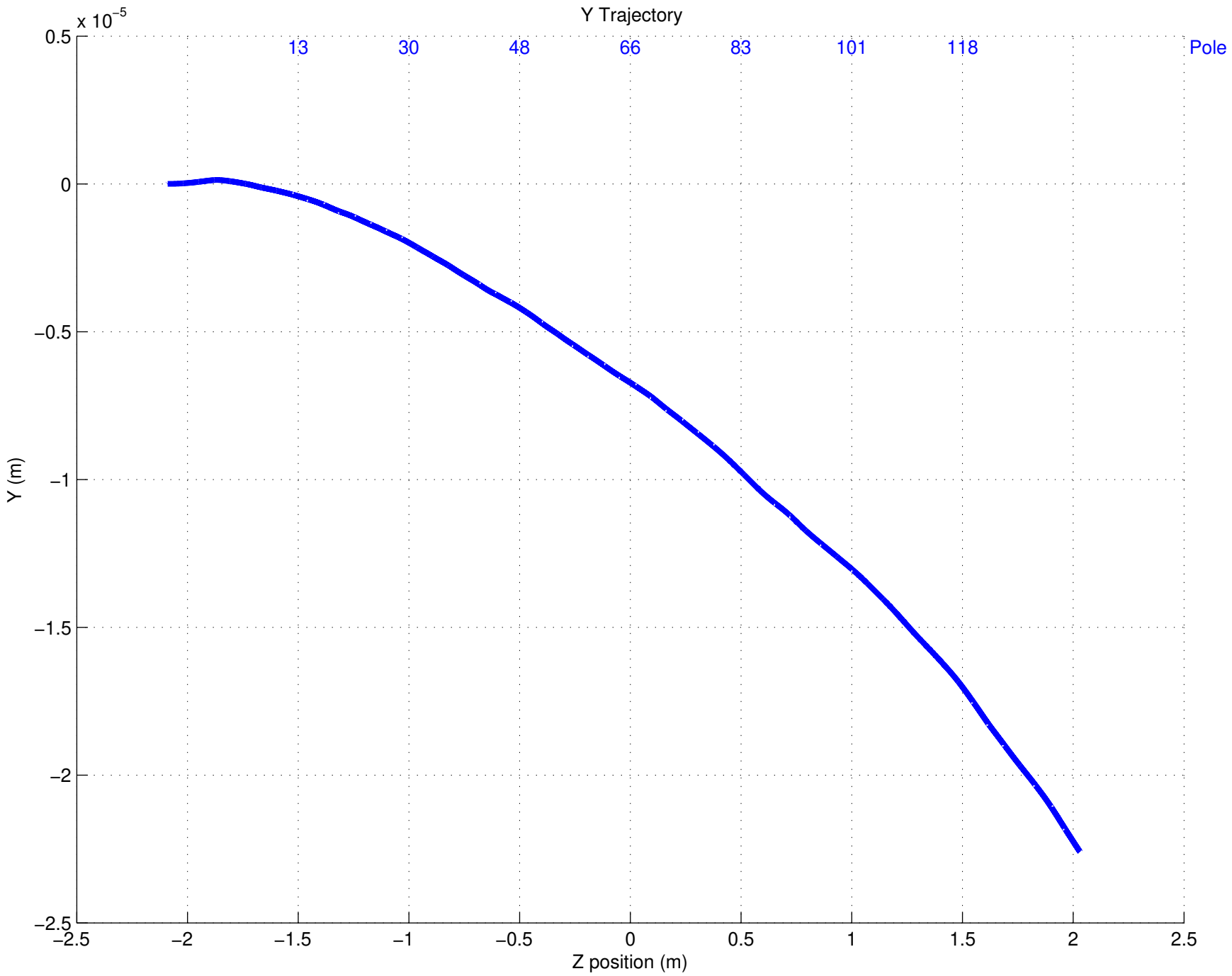
Planar Insertion Device Analysis

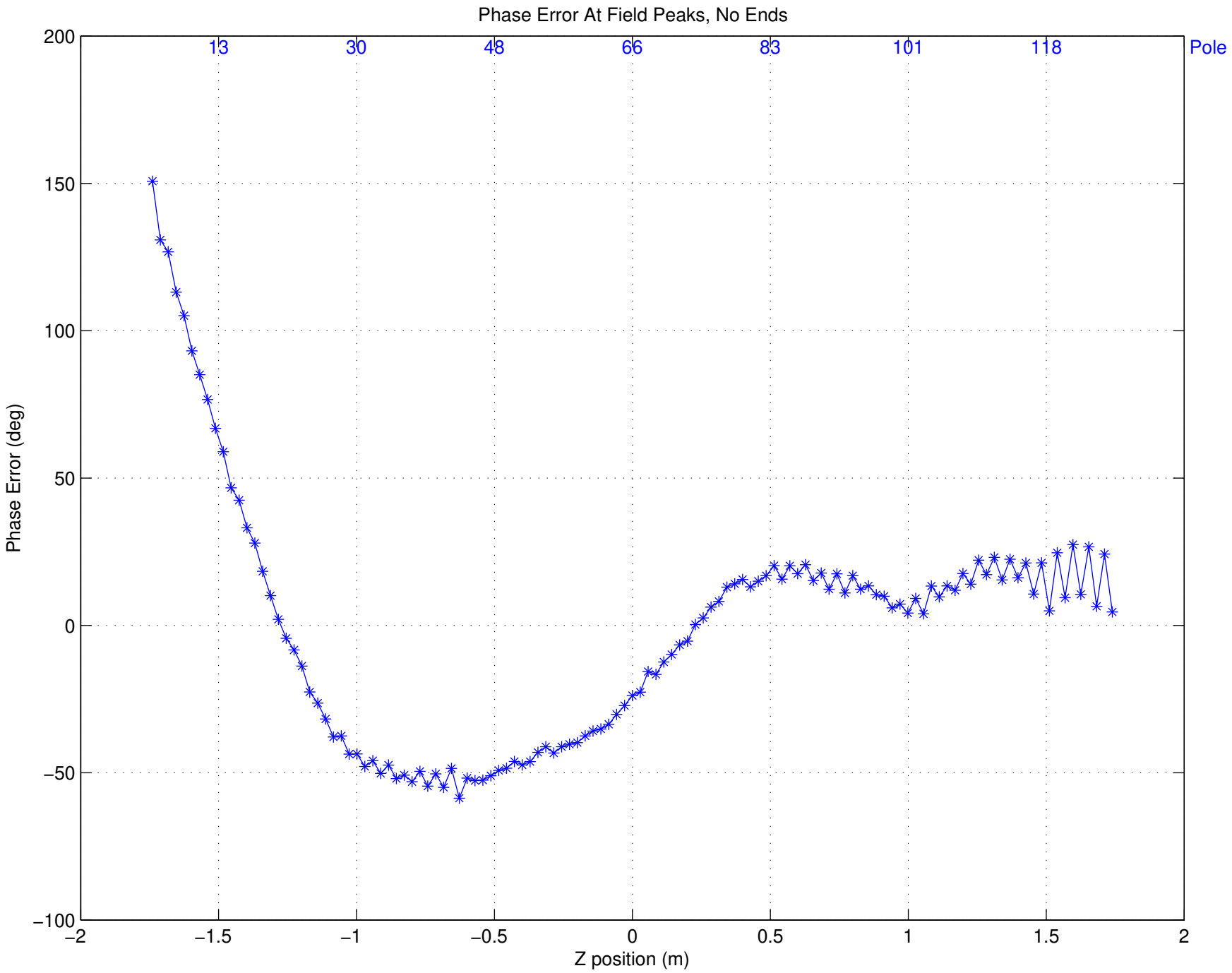
Parameters:
INPUT−FILE−DIR =S:\MagData\LCLS\Undulator\EPU\DATASET0001\Rough Tuning\Z Scans\Run 301\
INPUT−FILE−NAME =x+00000−y+000−bscanz.dat
INPUT−FILE−TYPE =ZVXYBXYH
CORR−REQUIRED =1
GAMMA =26686.34
NOM−LAMBDA−U =0.0569
NOM−K−VALUE =2.348
NOM−LAMBDA−R =1.5007e−010
NUM−POLES =131
NUM−END−POLES =4
CELL−LENGTH =3.6985


Bx vs Z
x 10^-3
13
30
48
66
83
101
118
Pole
8
6
4
2
0
−2
−4
−6
−8
−10
Bx (T)
−2.5
−2
−1.5
−1
−0.5
0
0.5
1
1.5
2
2.5
Z Position (m)

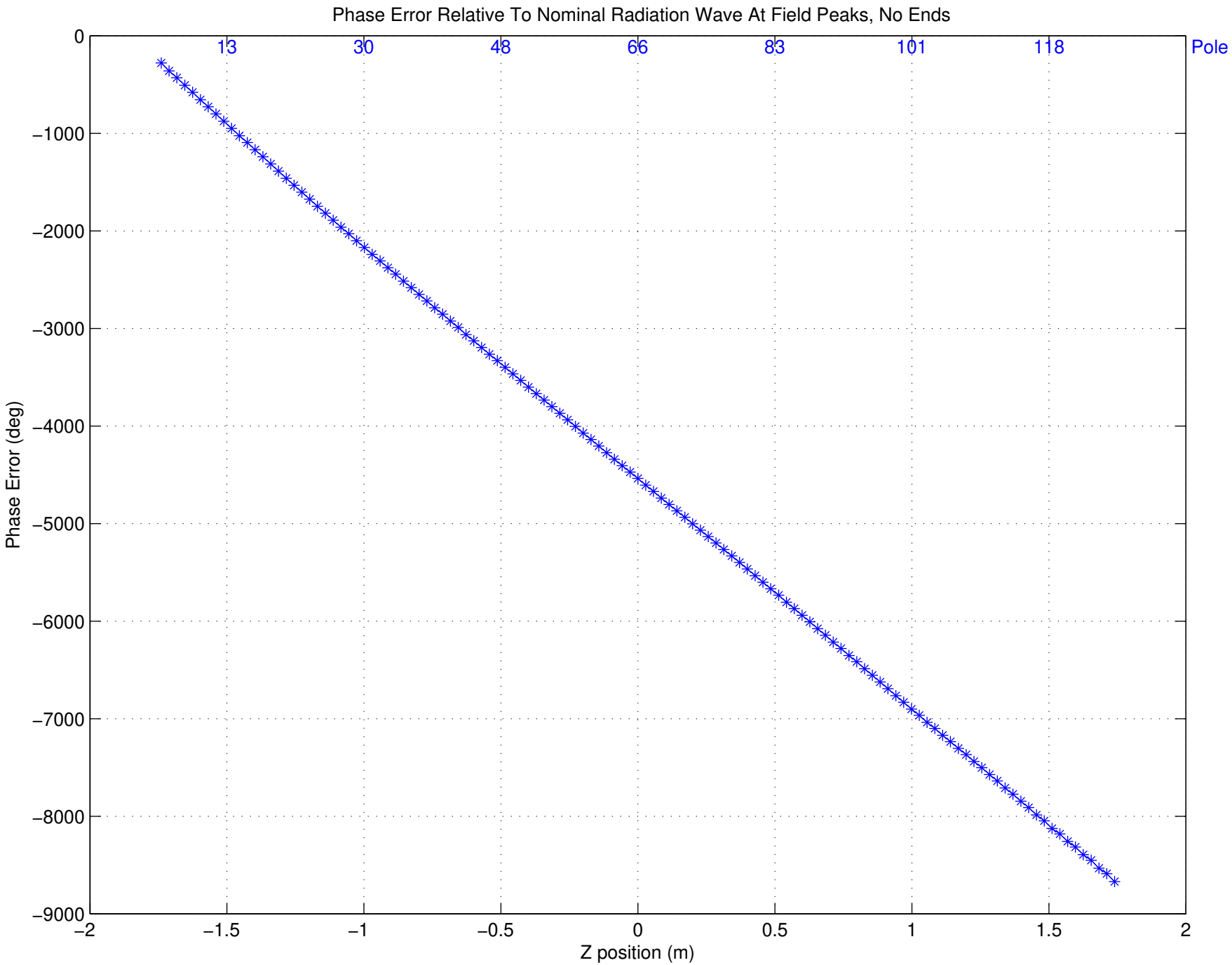

By vs Z
13
30
48
66
83
101
118
Pole
0.4
0.3
0.2
0.1
0
−0.1
−0.2
−0.3
−0.4
By (T)
−2.5
−2
−1.5
−1
−0.5
0
0.5
1
1.5
2
2.5
Z Position (m)


X Trajectory
x 10^-6
13
30
48
66
83
101
118
Pole
X (m)
Z position (m)
3
2.5
2
1.5
1
0.5
0
−0.5
−1
−1.5
−2
−2.5
−2
−1.5
−1
−0.5
0
0.5
1
1.5
2
2.5


Y Trajectory
x 10^-5
13
30
48
66
83
101
118
Pole
0.5
0
−0.5
−1
−1.5
−2
−2.5
Y (m)
−2.5
−2
−1.5
−1
−0.5
0
0.5
1
1.5
2
2.5
Z position (m)



Phase Error: Ave = −0.000000 deg, RMS = 41.762623 deg


Phase Error Relative To Nominal Radiation Wave At Field Peaks, No Ends
13
30
48
66
83
101
118
Pole
0
−1000
−2000
−3000
−4000
−5000
−6000
−7000
−8000
−9000
Phase Error (deg)
−2
−1.5
−1
−0.5
0
0.5
1
1.5
2
Z position (m)