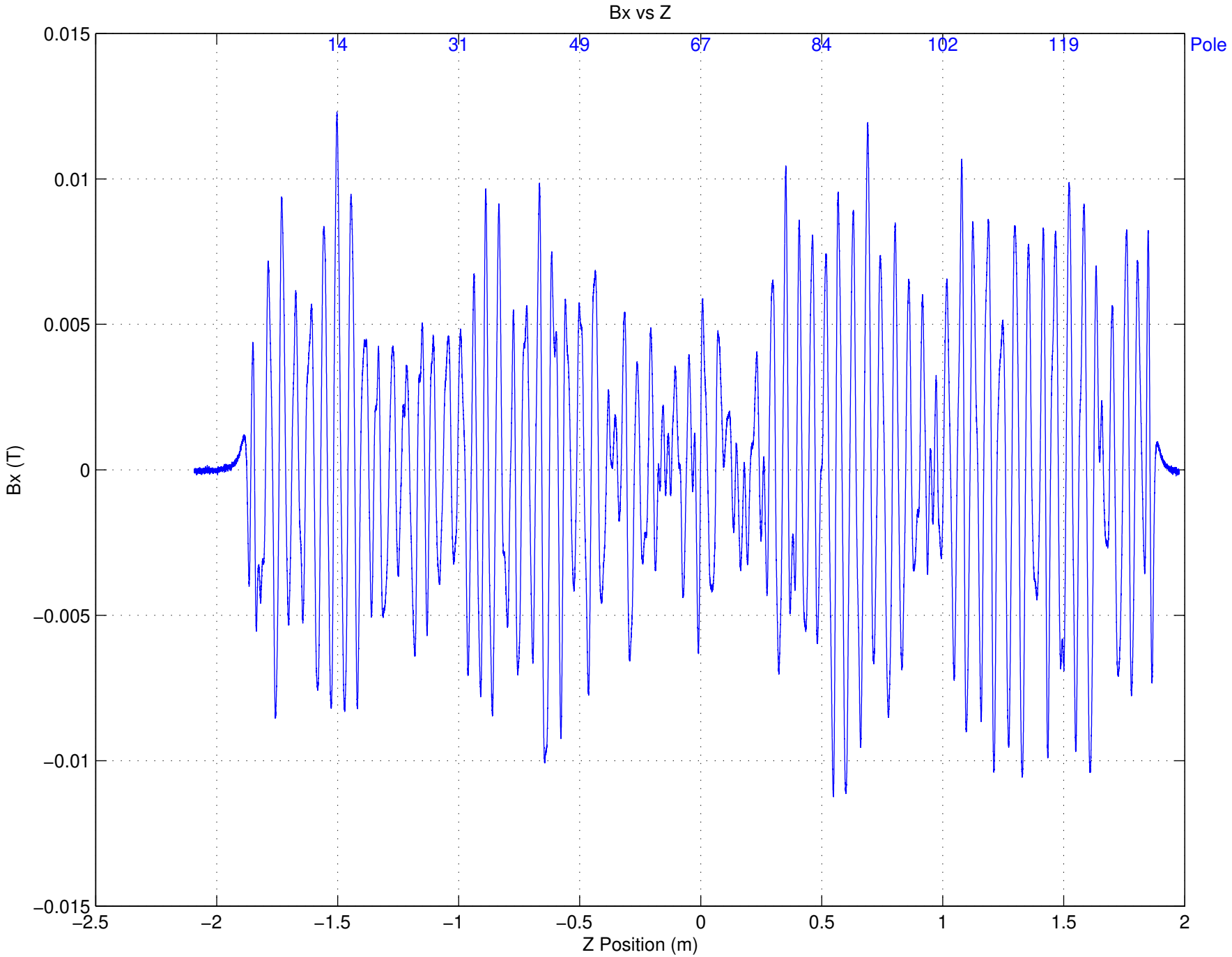
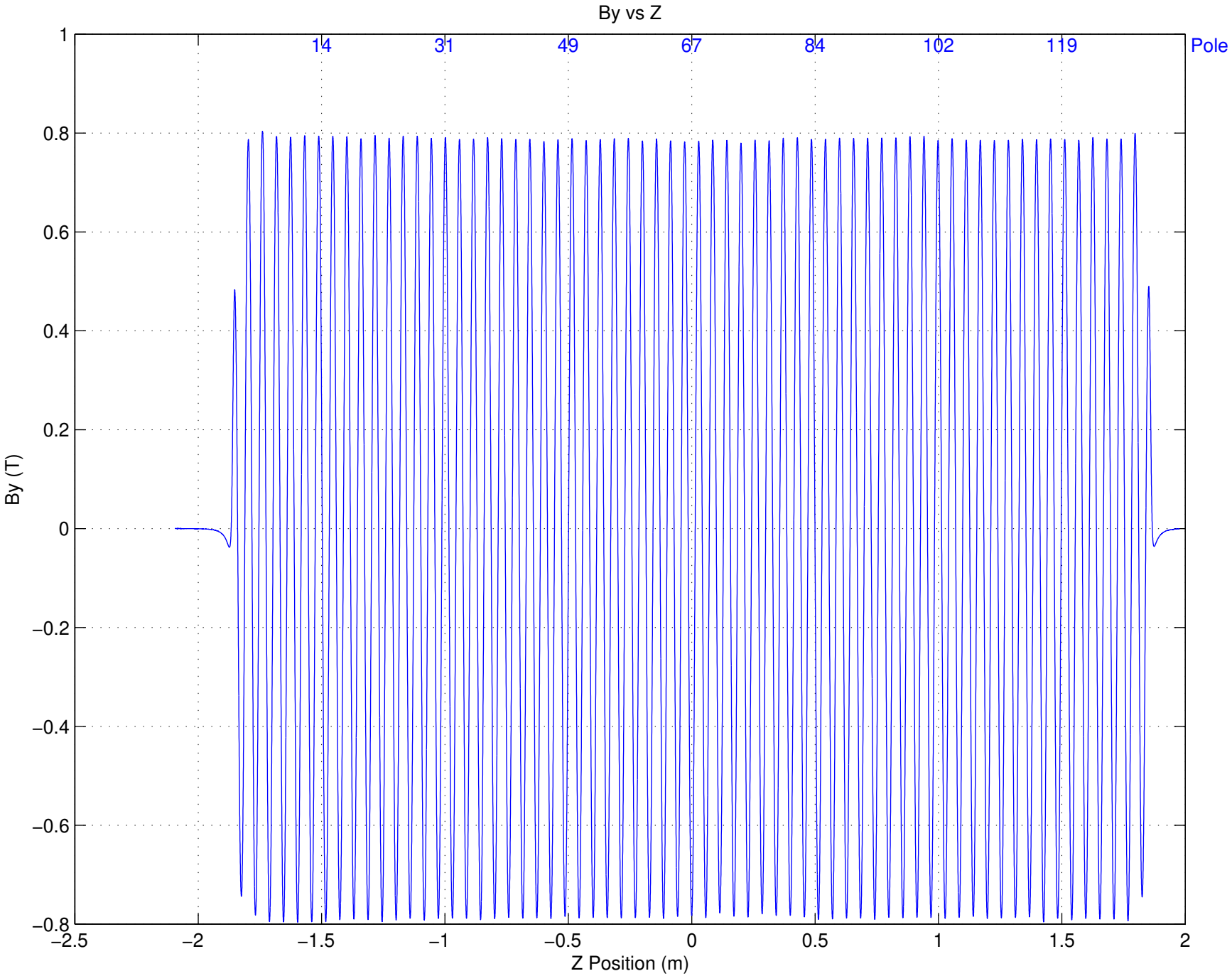
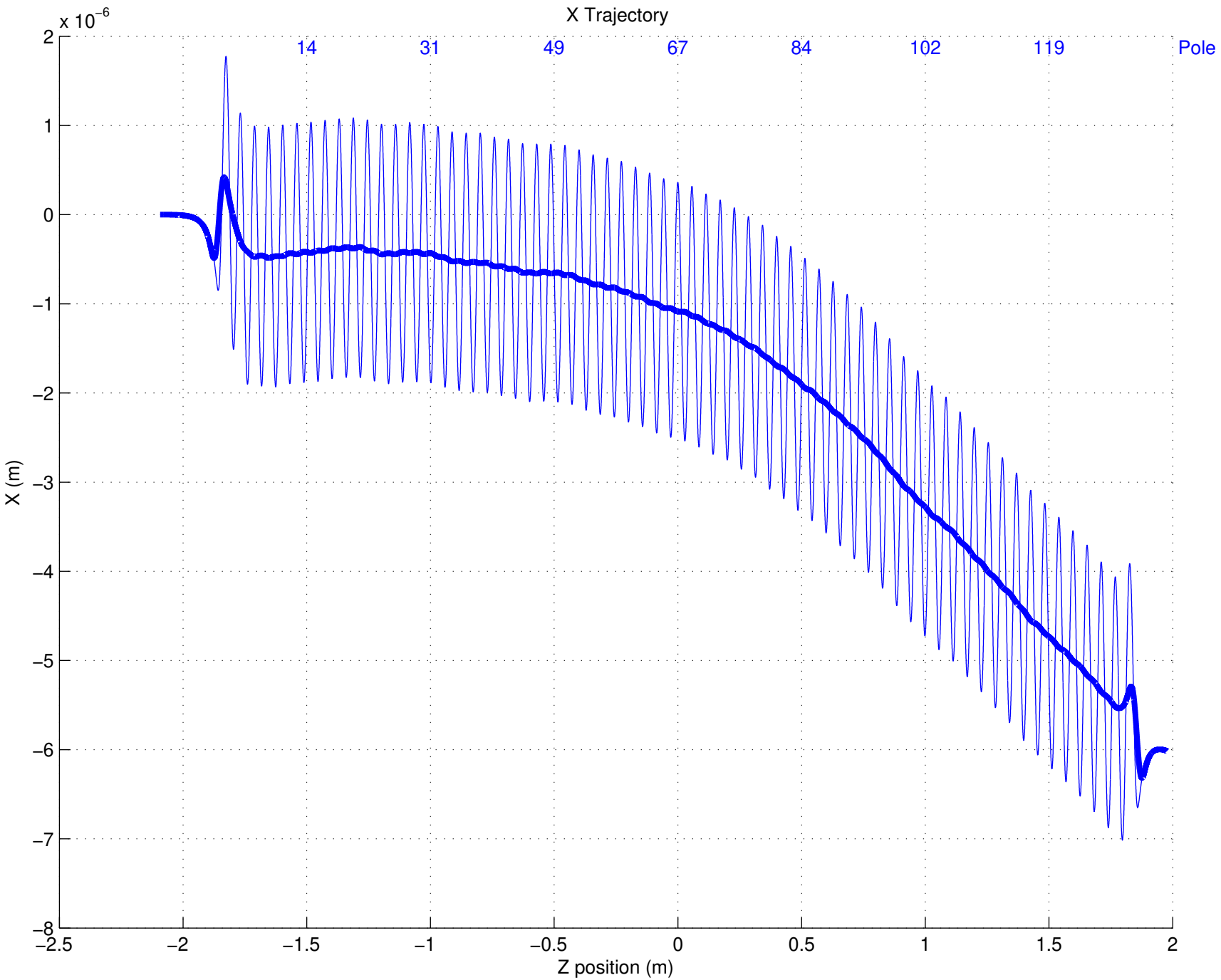
SLAC Magnetic Measurements

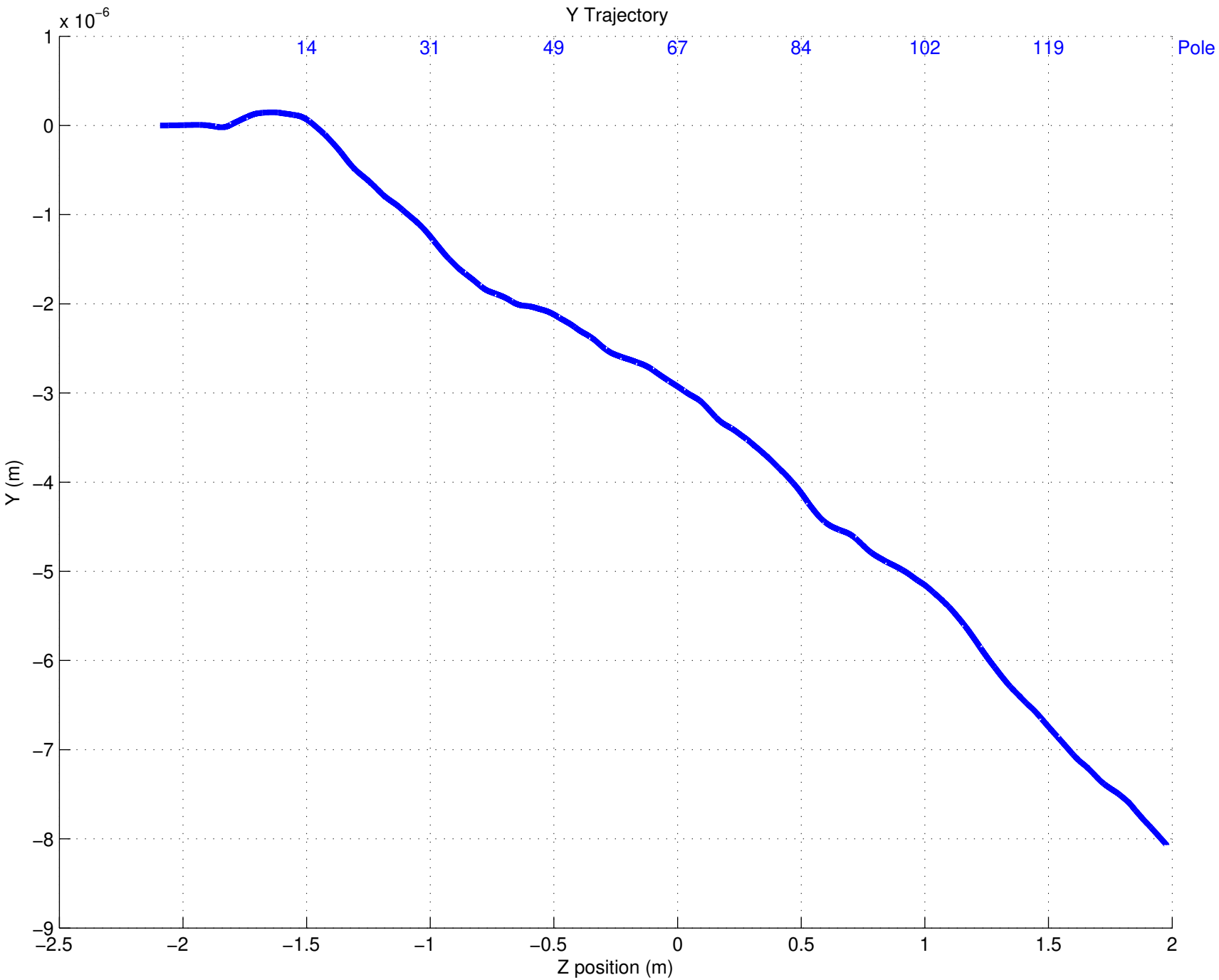
Planar Insertion Device Analysis

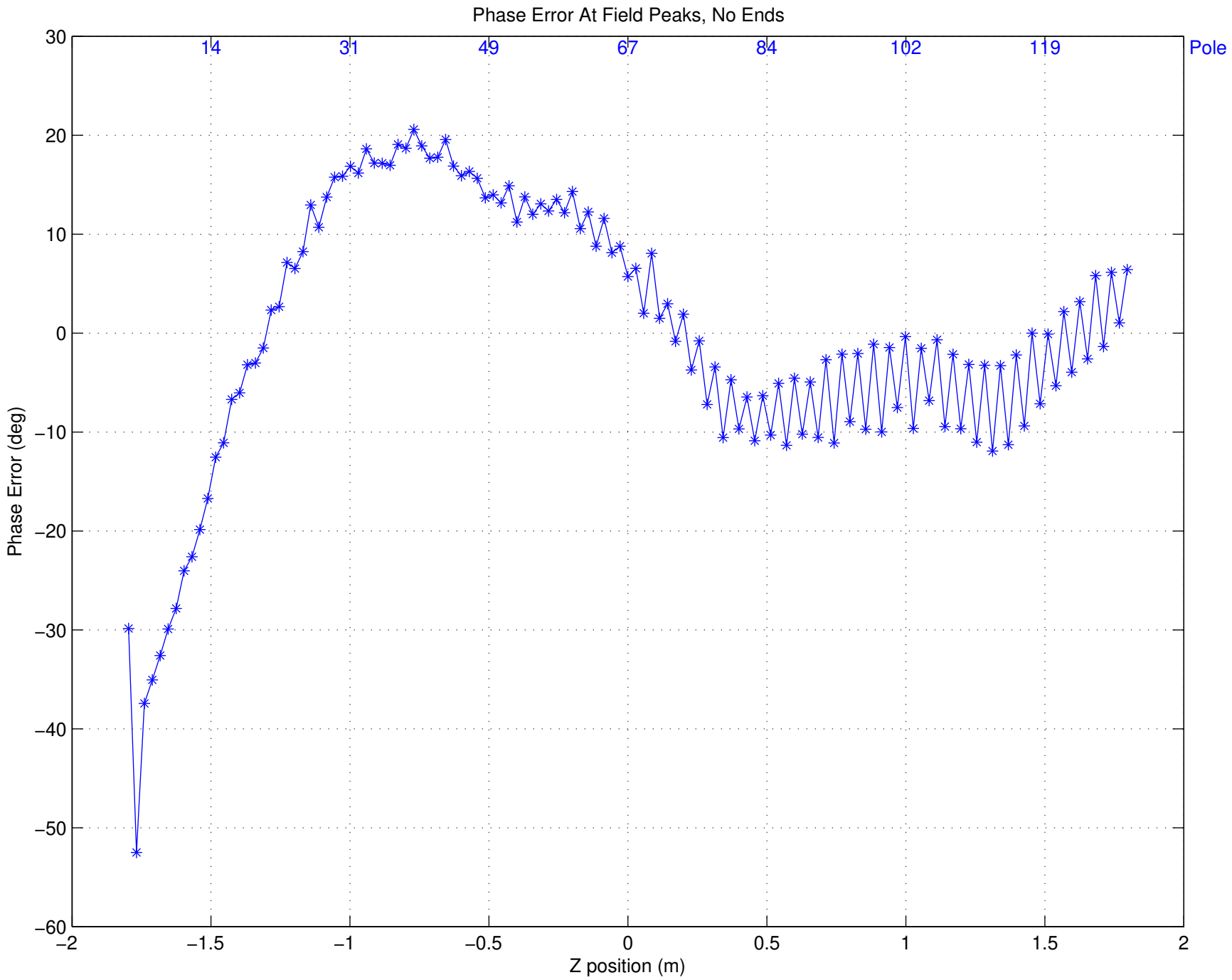
Parameters:
INPUT−FILE−DIR =S:\MagData\LCLS\Undulator\EPU\DATASET0001\Rough Tuning\Z Scans\Run 011\
INPUT−FILE−NAME =x+00000−y+000−bscanz.dat
INPUT−FILE−TYPE =ZVXYBXYH
CORR−REQUIRED =1
GAMMA =26686.34
NOM−LAMBDA−U =0.0569
NOM−K−VALUE =4.27
NOM−LAMBDA−R =4.0414e−010
NUM−POLES =133
NUM−END−POLES =3
CELL−LENGTH =3.6985


Bx vs Z
14
31
49
67
84
102
119
Pole
0.015
0.01
0.005
0
−0.005
−0.01
−0.015
Bx (T)
−2.5
−2
−1.5
−1
−0.5
0
0.5
1
1.5
2
Z Position (m)

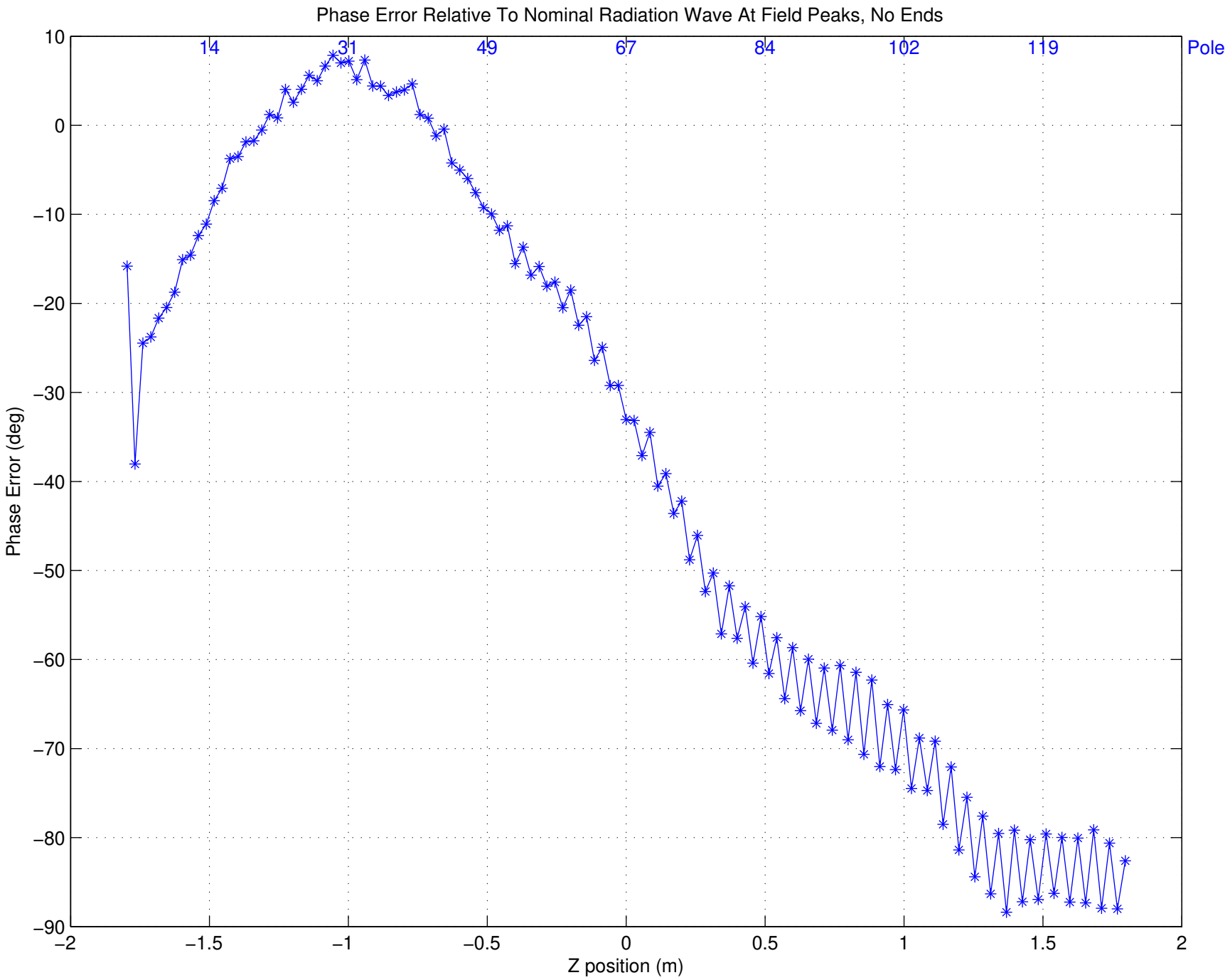

By vs Z
14
31
49
67
84
102
119
Pole
1
0.8
0.6
0.4
0.2
0
−0.2
−0.4
−0.6
−0.8
By (T)
−2.5
−2
−1.5
−1
−0.5
0
0.5
1
1.5
2
Z Position (m)


X Trajectory
x 10^-6
14
31
49
67
84
102
119
Pole
X (m)
Z position (m)
2
1
0
−1
−2
−3
−4
−5
−6
−7
−8
−2.5
−2
−1.5
−1
−0.5
0
0.5
1
1.5
2


Y Trajectory
x 10^-6
14
31
49
67
84
102
119
Pole
1
0
−1
−2
−3
−4
−5
−6
−7
−8
−9
Y (m)
−2.5
−2
−1.5
−1
−0.5
0
0.5
1
1.5
2
Z position (m)



Phase Error: Ave = 0.000000 deg, RMS = 13.532884 deg


Phase Error Relative To Nominal Radiation Wave At Field Peaks, No Ends
14
31
49
67
84
102
119
Pole
10
0
−10
−20
−30
−40
−50
−60
−70
−80
−90
Phase Error (deg)
−2
−1.5
−1
−0.5
0
0.5
1
1.5
2
Z position (m)