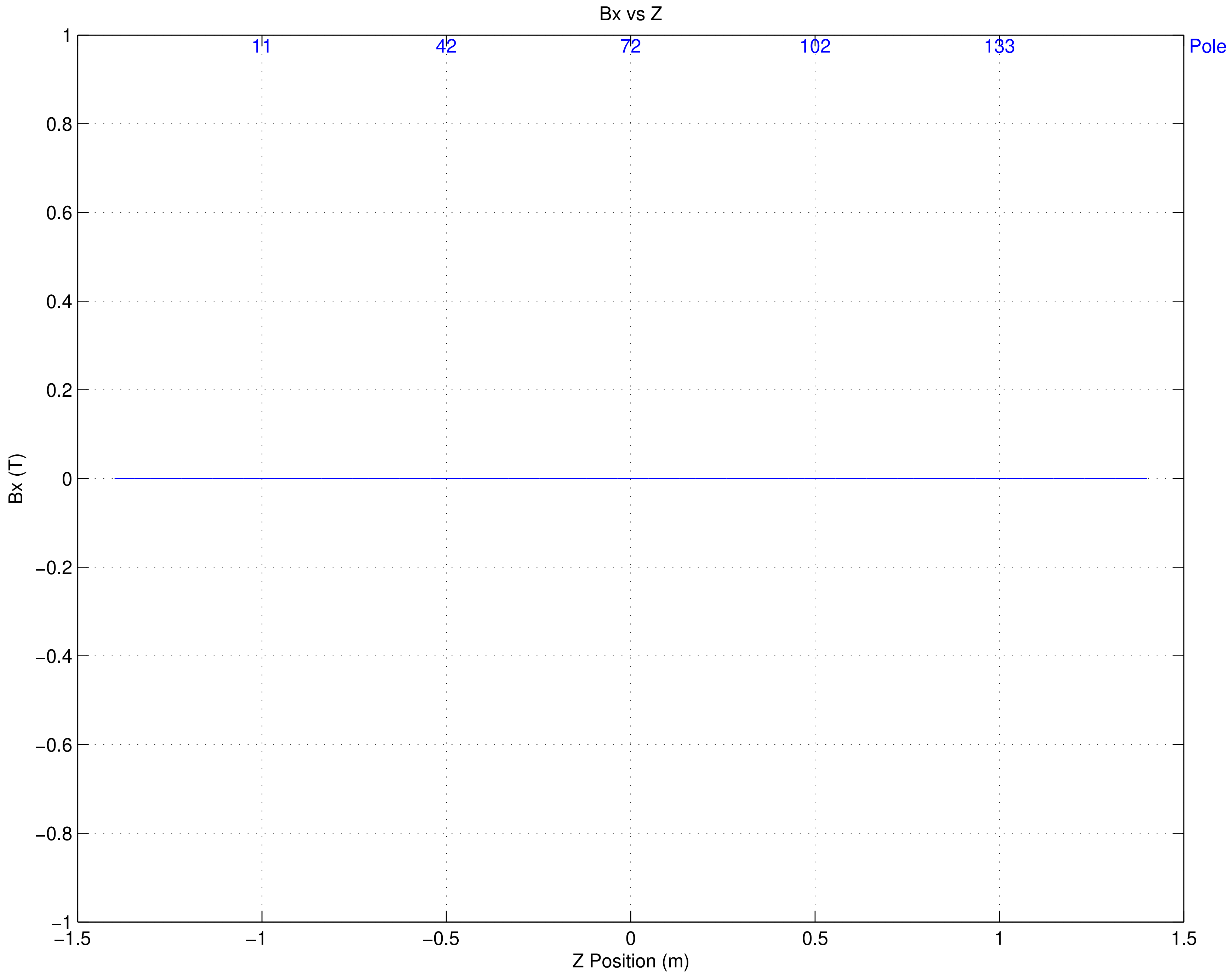
SLAC Magnetic Measurements

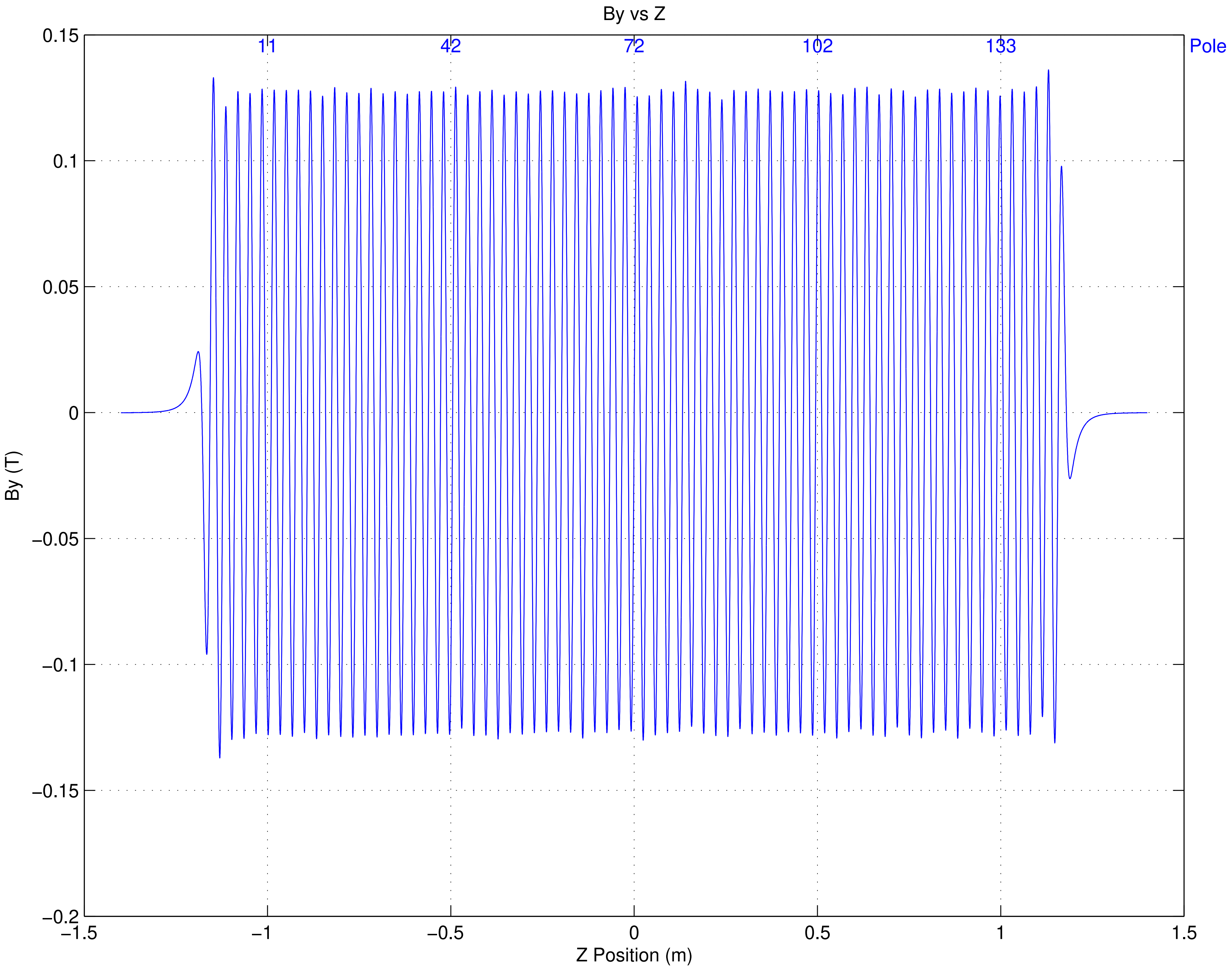
Planar Insertion Device Analysis

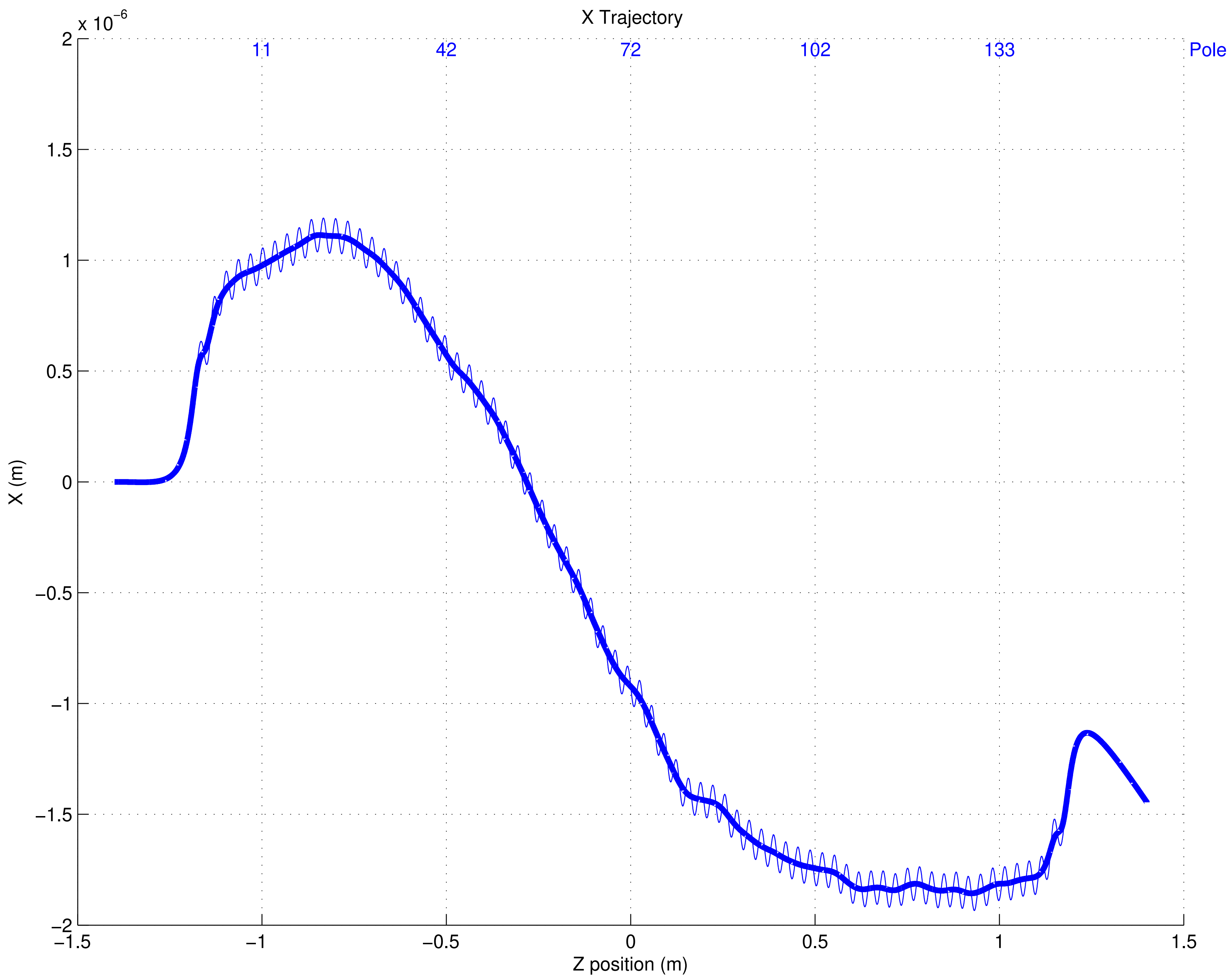
MAGNETC MEASUREMENT LAB, APS, ANL. START TIME: 9/27/2010 2:32:49 PM; TEMP #1: 29.57C; TEMP #2: 28.91C; TEMI
ACTIVE AXIS: Z; START(mm): −1400.000; STEP(mm): 0.200; FINISH(mm): 1400.000; W−POSITION(deg): 0.000; X−POSITION
ZERO FIELD(G): −0.767; START FIELD(G): −0.630; END FIELD(G): 0.222; CALIBRATION FILE: C:\MM1 Dev\Prob Calib\SEnis4
Position(mm), Field(T)

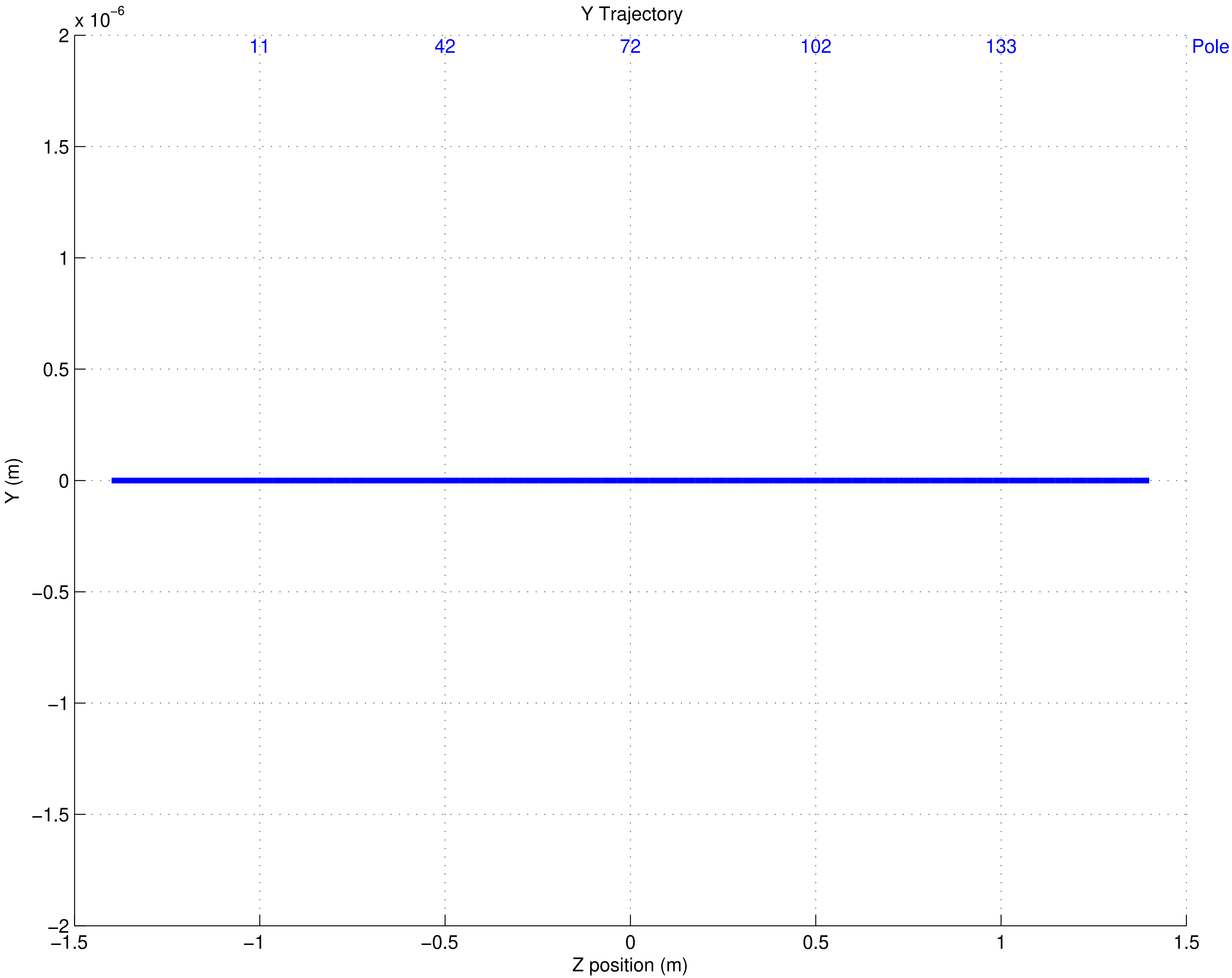
Parameters:
INPUT−FILE−DIR =s:\MagData\LCLS\Undulator\A1−ANL\ANL−DATA\
INPUT−FILE−NAME =regByvsZ−001.300
INPUT−FILE−TYPE =ZBYH−ANL
CORR−REQUIRED =1
GAMMA =26652.52
NOM−LAMBDA−U =0.033
NOM−K−VALUE =2.5
NOM−LAMBDA−R =9.5815e−011
NUM−POLES =144
NUM−END−POLES =4
CELL−LENGTH =2.9



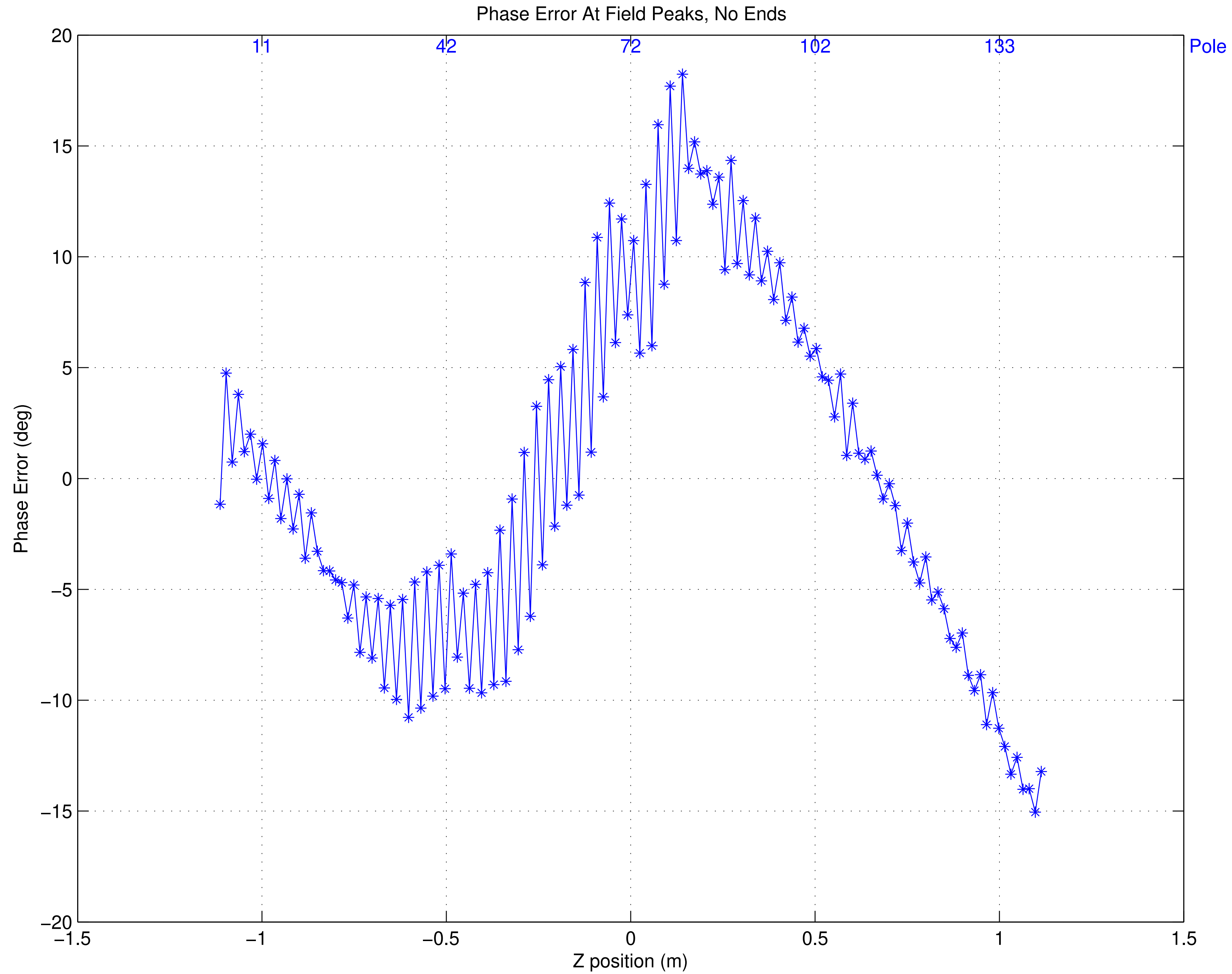
Bx vs Z
11
42
72
102
133
Pole
1
0.8
0.6
0.4
0.2
0
−0.2
−0.4
−0.6
−0.8
−1
Bx (T)
−1.5
−1
−0.5
0
0.5
1
1.5
Z Position (m)


By vs Z
By (T)
Z Position (m)
Pole
11
42
72
102
133
0.15
0.1
0.05
0
−0.05
−0.1
−0.15
−0.2
−1.5
−1
−0.5
0
0.5
1
1.5

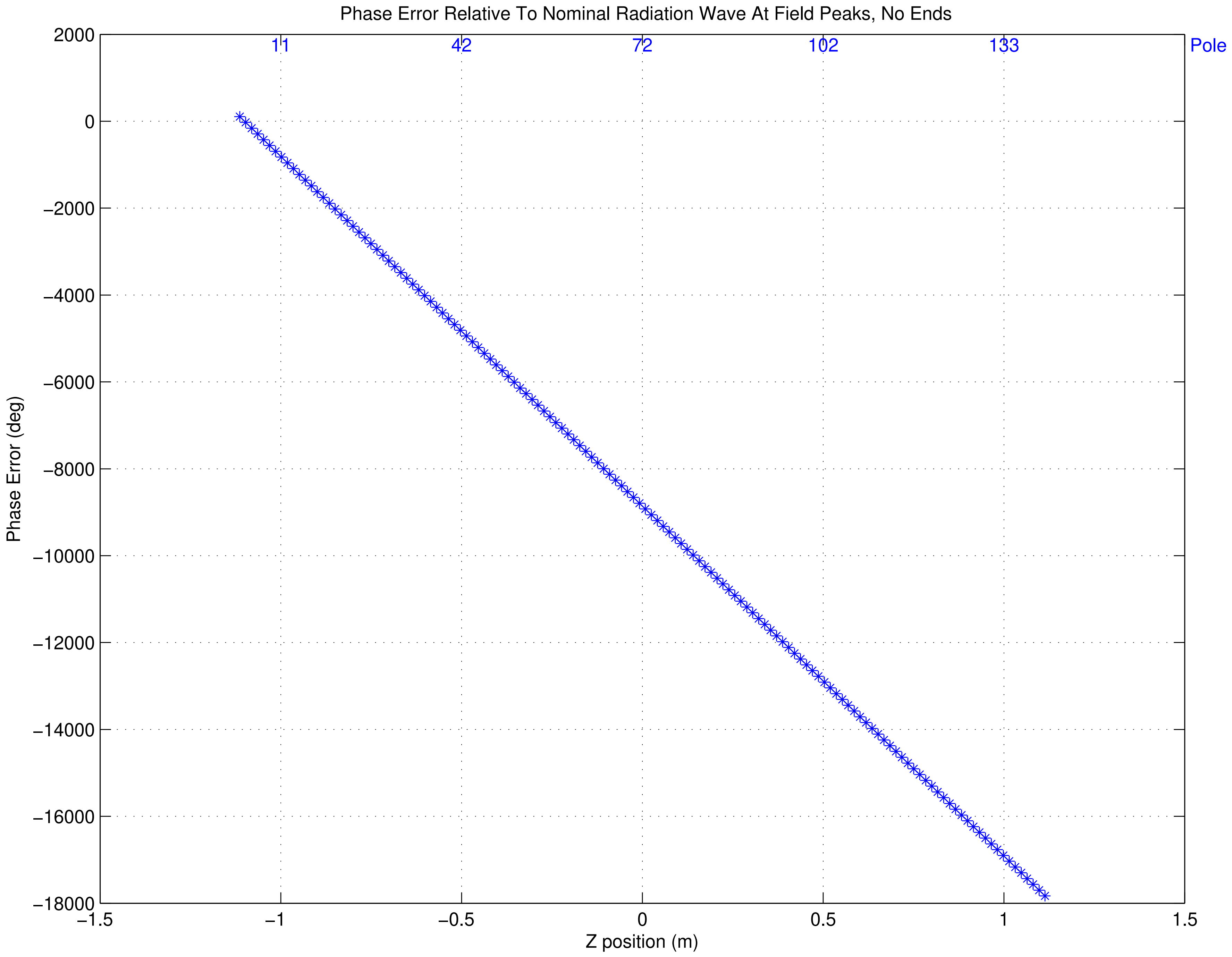

X Trajectory
x 10^-6
11
42
72
102
133
Pole
2
1.5
1
0.5
0
−0.5
−1
−1.5
−2
X (m)
−1.5
−1
−0.5
0
0.5
1
1.5
Z position (m)



Y Trajectory
x 10^−6
2
1.5
1
0.5
0
−0.5
−1
−1.5
−2
Y (m)
11
42
72
102
133
Pole
−1.5
−1
−0.5
0
0.5
1
1.5
Z position (m)




Phase Error: Ave = −0.000000 deg, RMS = 8.017668 deg


Phase Error Relative To Nominal Radiation Wave At Field Peaks, No Ends
11
42
72
102
133
Pole
2000
0
−2000
−4000
−6000
−8000
−10000
−12000
−14000
−16000
−18000
Phase Error (deg)
−1.5
−1
−0.5
0
0.5
1
1.5
Z position (m)