SLAC Magnetic Measurements

Planar Insertion Device Analysis

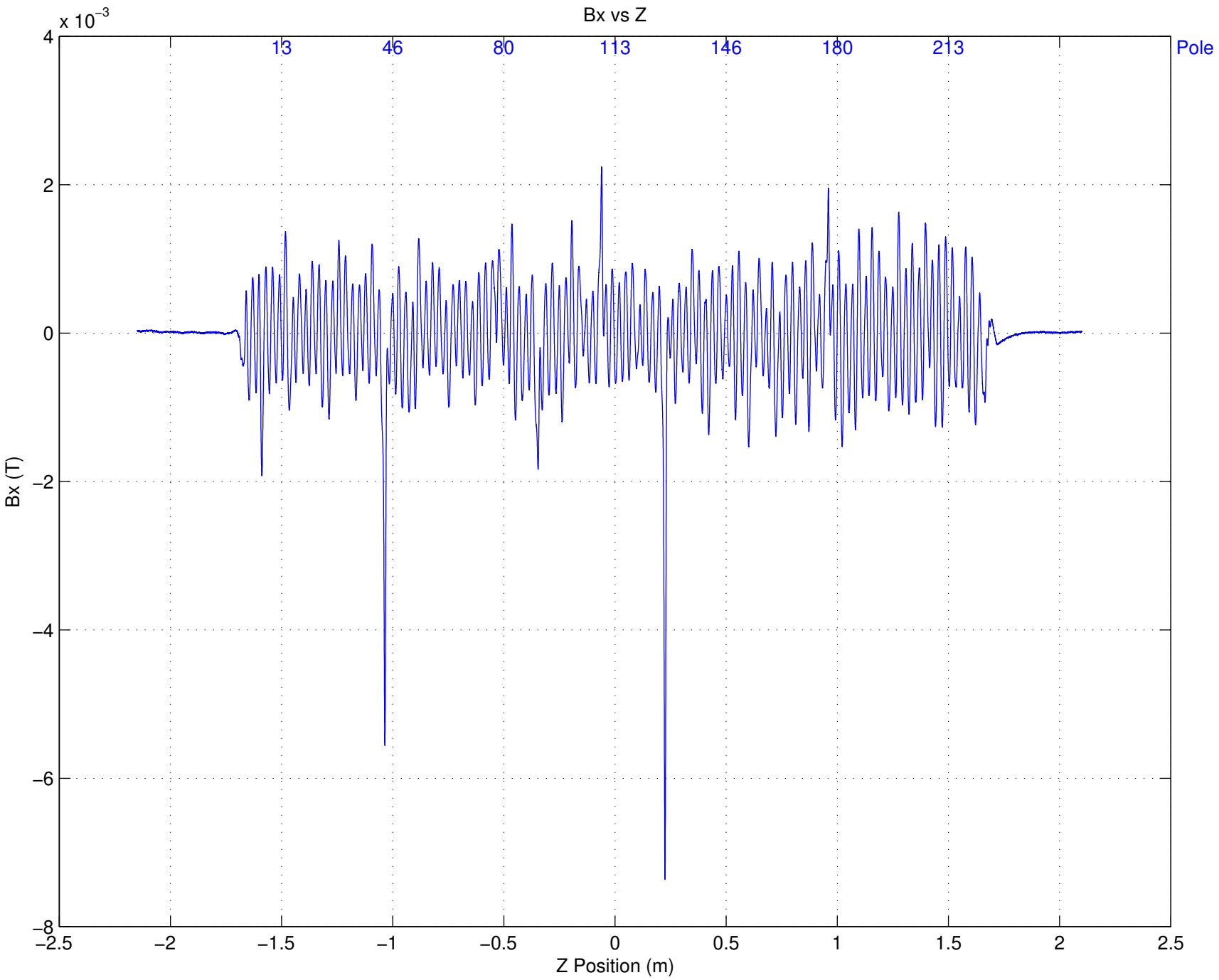
SLAC Magnetic Measurements
Date: 06−11−2010
Time: 09:19:43

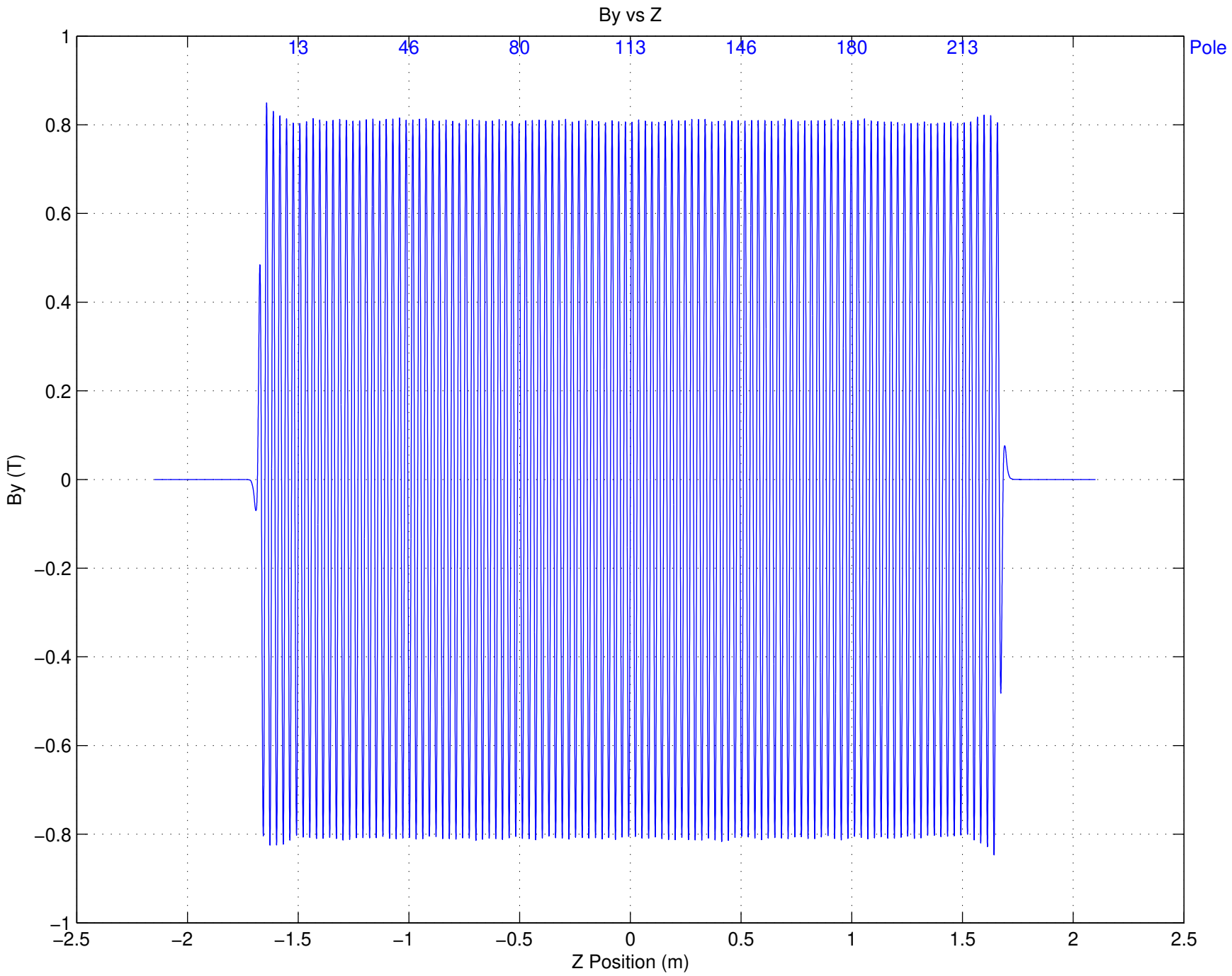
Project: LCLS
Device Type: Undulator
Data Type:
Serial Number: L143−112000−01
DATASET Number: 1
Tuning Stage: Fine Tuning
Run Number: 2
Measurement Type: Z Scans
Operator: YL
Comment: find Y at min K
Session first run: 2
Measurement Device x:
Measurement Device y: $SENTRON_4$41

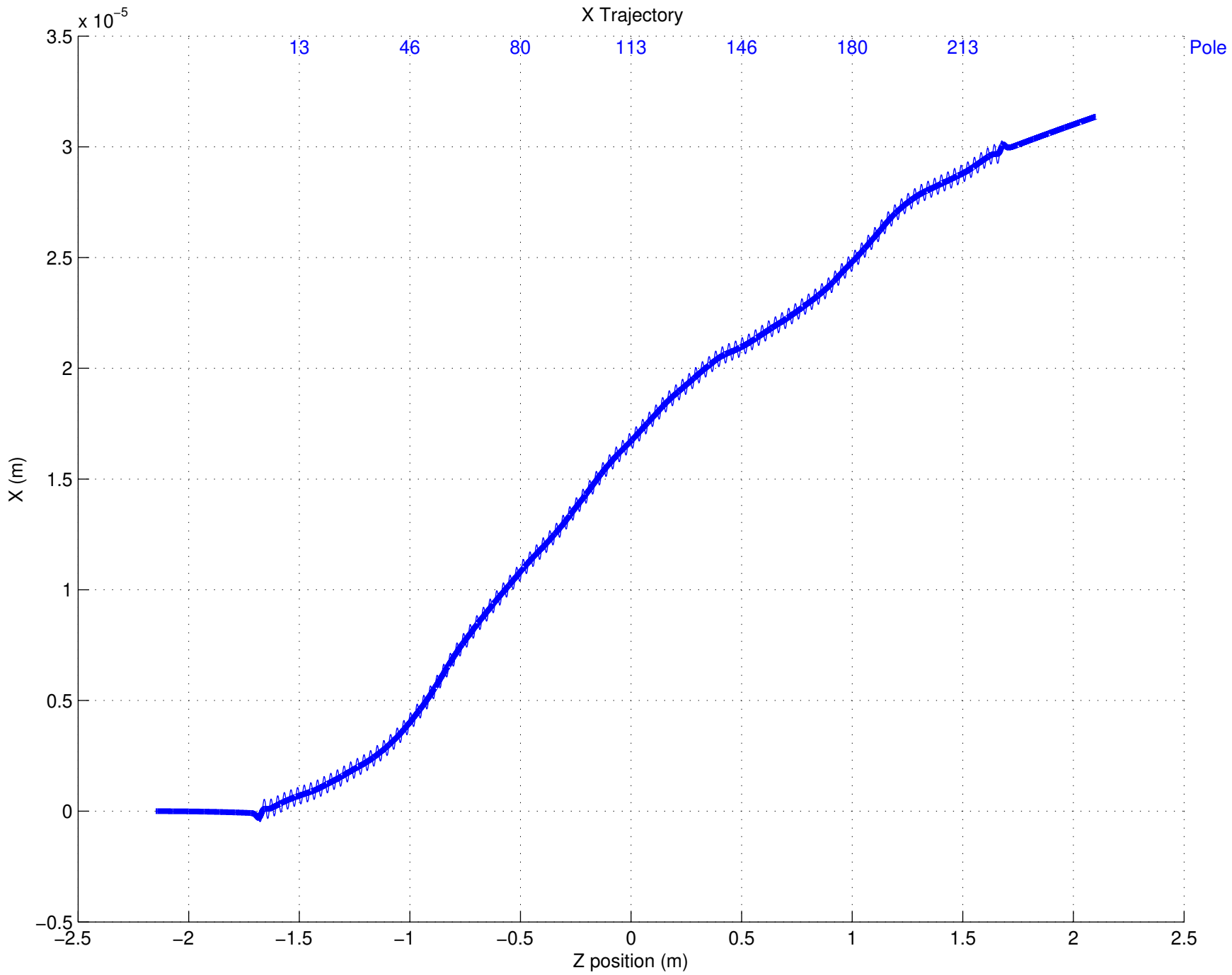
Data File: s:\magdata\LCLS\Undulator\L143−112000−01\DATASET0001\Fine Tuning\Z Scans\Run 002\bscanz.dat

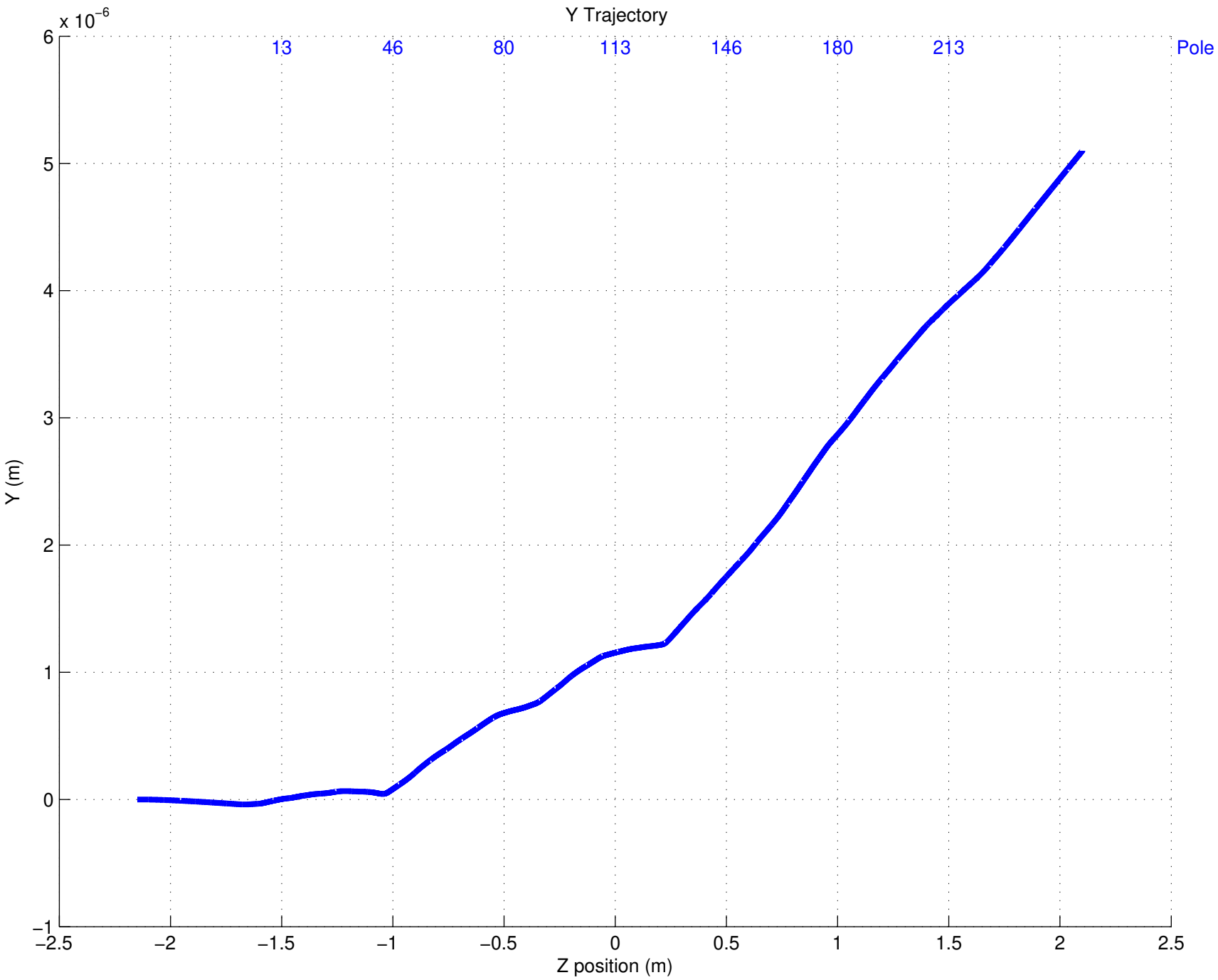
Temperature (C)
L143−112000−01:−−> T5 19.98 −−> T2 20.00 −−> T1 20.02 −−> T3 20.01 −−> Air 20.06 −−> T4 20.00

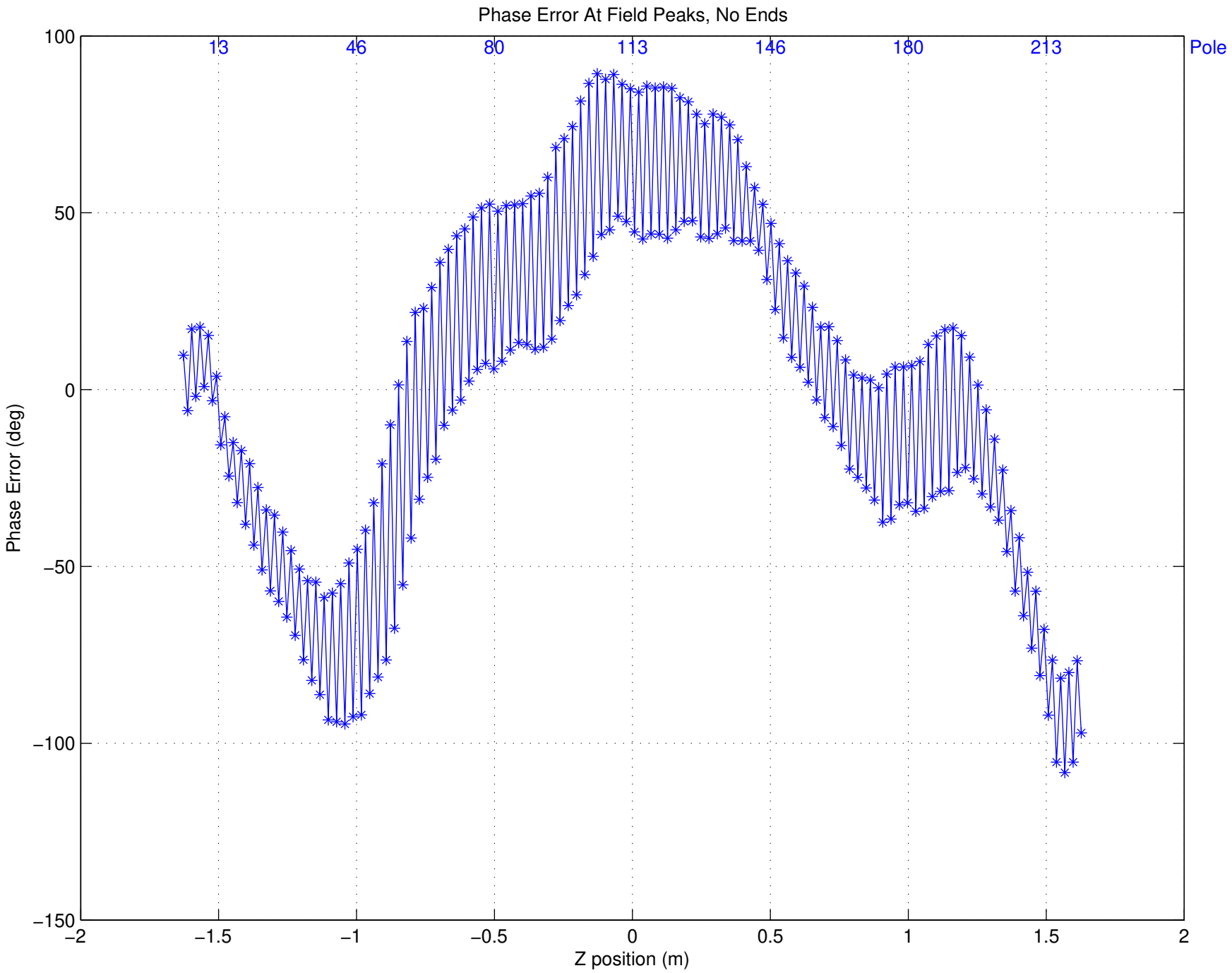
Axes position (m) X:0.026000 Y:0.000300
Initial Hall Probe Zero Measurements:
Vx_0i = 0.001184 V
Vy_0i = −0.003030 V


Bx vs Z
x 10^-3
4
2
0
−2
−4
−6
−8
Bx (T)
13
46
80
113
146
180
213
Pole
−2.5
−2
−1.5
−1
−0.5
0
0.5
1
1.5
2
2.5
Z Position (m)

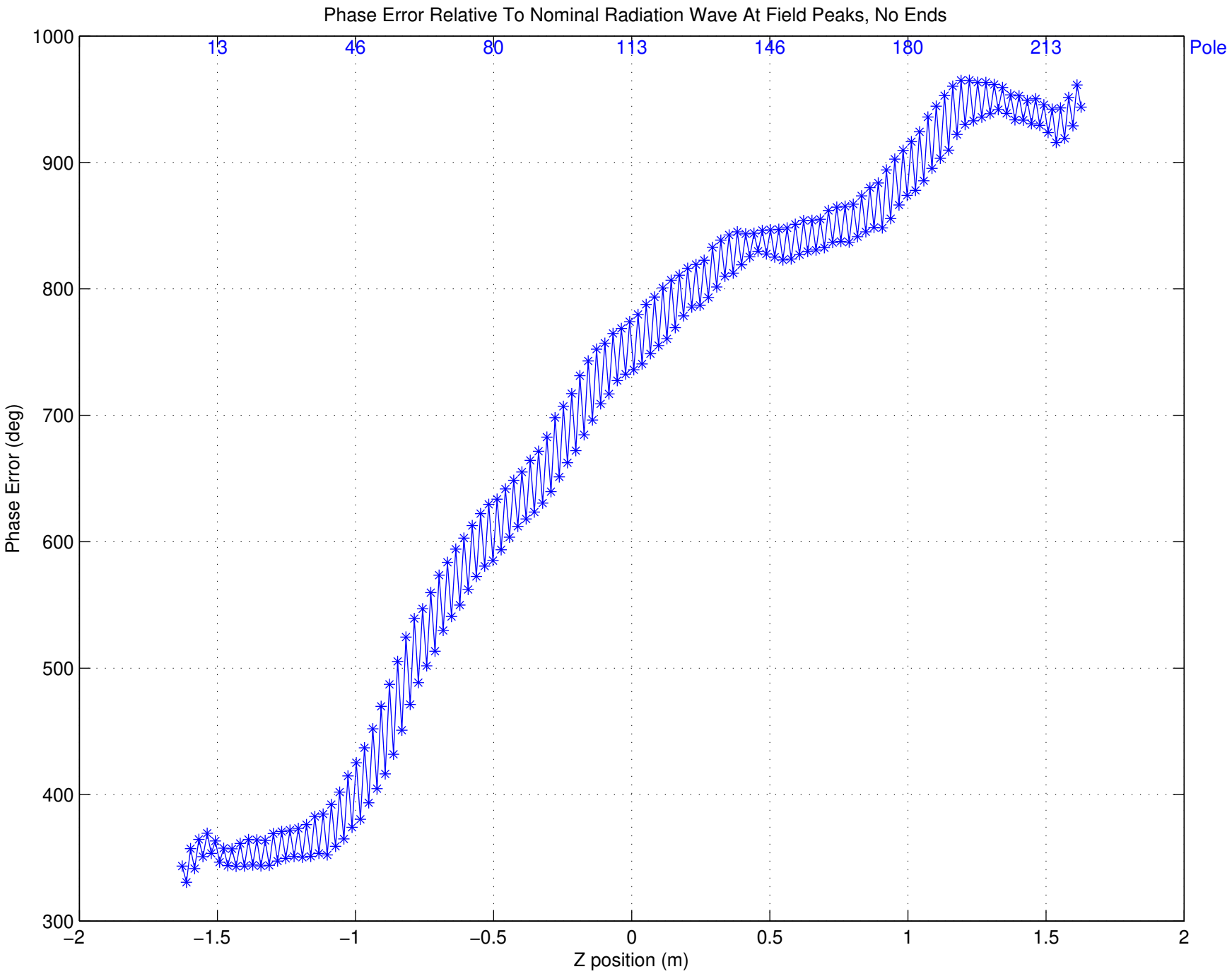

By vs Z
13
46
80
113
146
180
213
Pole
By (T)
Z Position (m)
1
0.8
0.6
0.4
0.2
0
−0.2
−0.4
−0.6
−0.8
−1
−2.5
−2
−1.5
−1
−0.5
0
0.5
1
1.5
2
2.5


X Trajectory
x 10^-5
13
46
80
113
146
180
213
Pole
3.5
3
2.5
2
1.5
1
0.5
0
−0.5
X (m)
−2.5
−2
−1.5
−1
−0.5
0
0.5
1
1.5
2
2.5
Z position (m)


Y Trajectory
x 10^-6
6
5
4
3
2
1
0
−1
13
46
80
113
146
180
213
Pole
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 = 49.827718 deg


Phase Error Relative To Nominal Radiation Wave At Field Peaks, No Ends
13
46
80
113
146
180
213
Pole
1000
900
800
700
600
500
400
300
Phase Error (deg)
−2
−1.5
−1
−0.5
0
0.5
1
1.5
2
Z position (m)