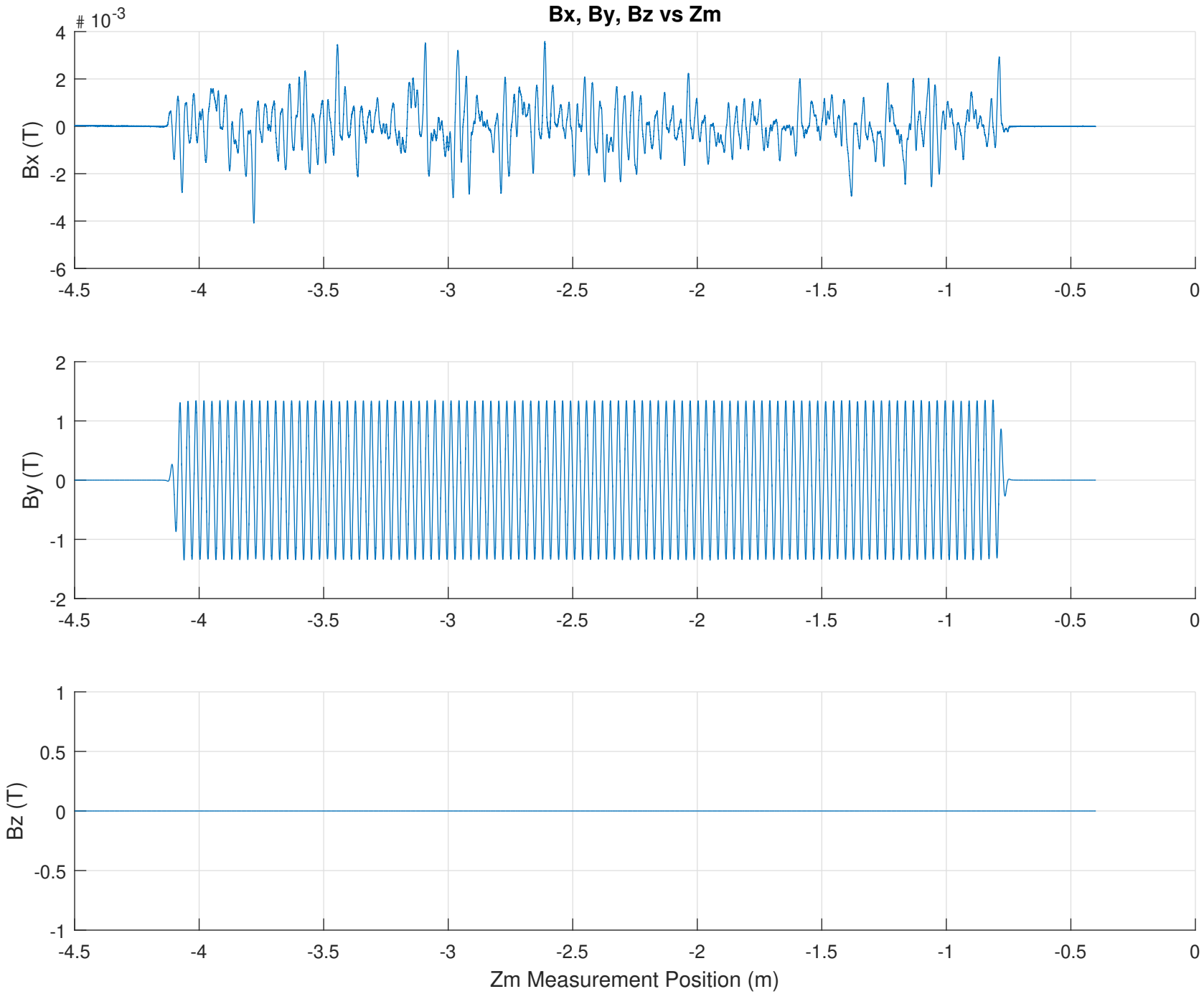
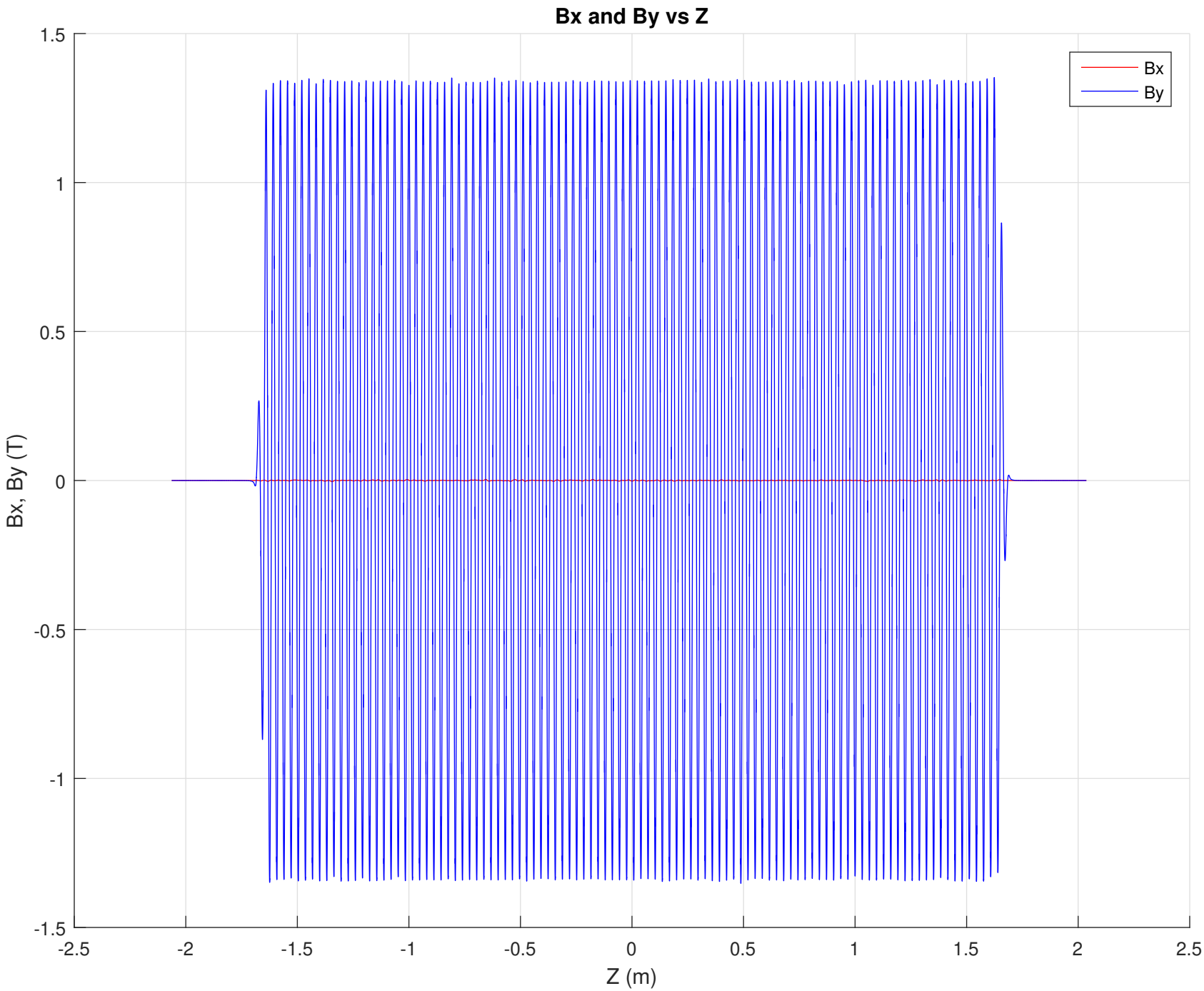
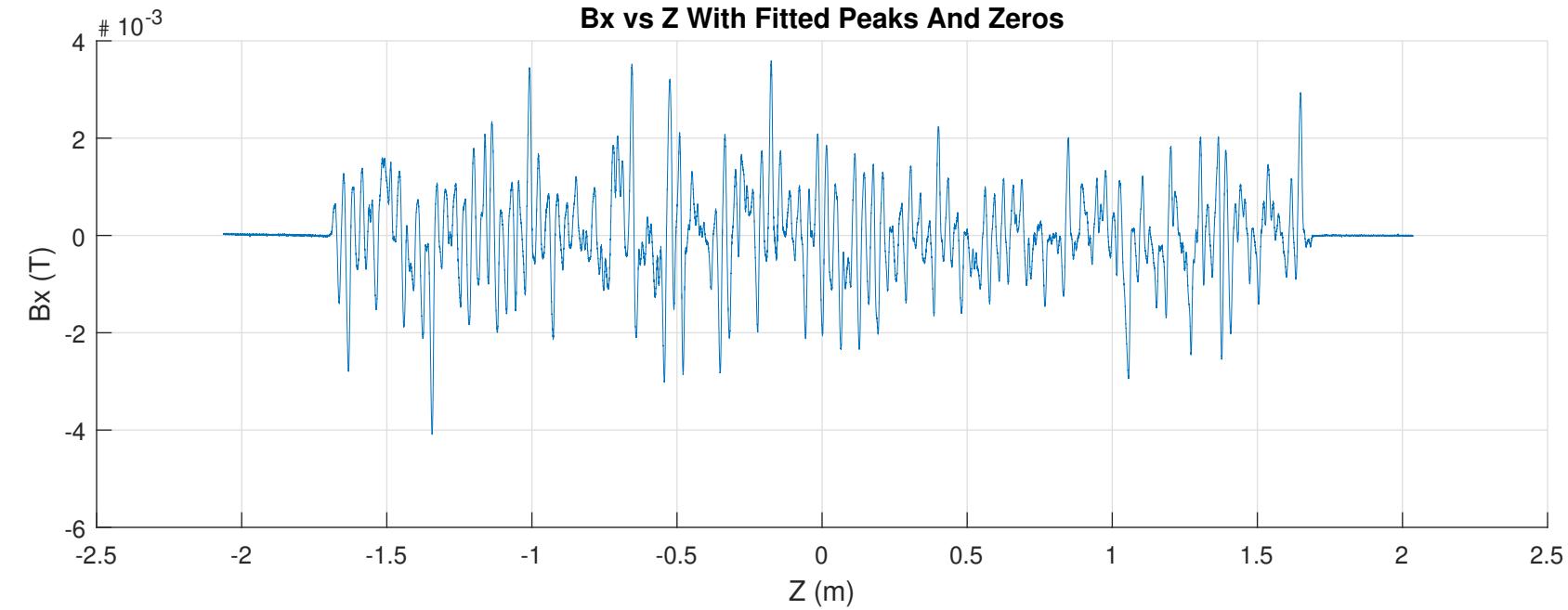
SLAC Magnetic Measurements

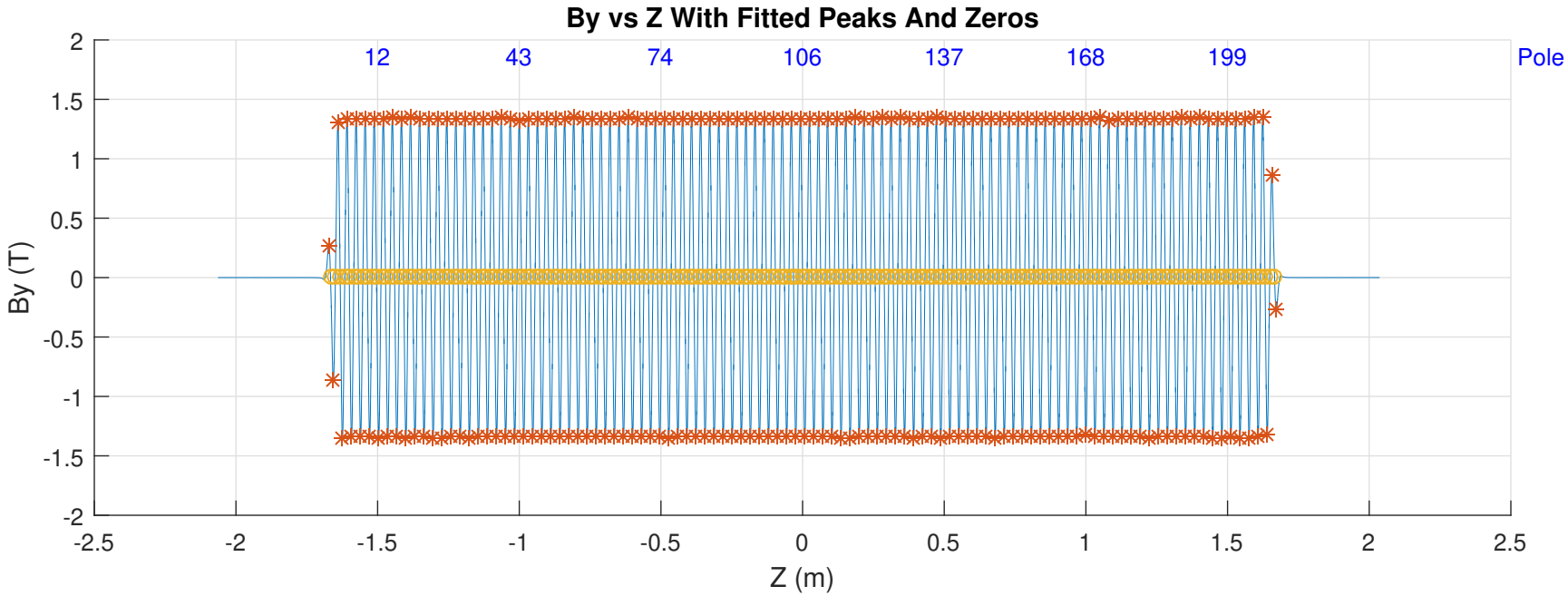
Trajectory Analysis

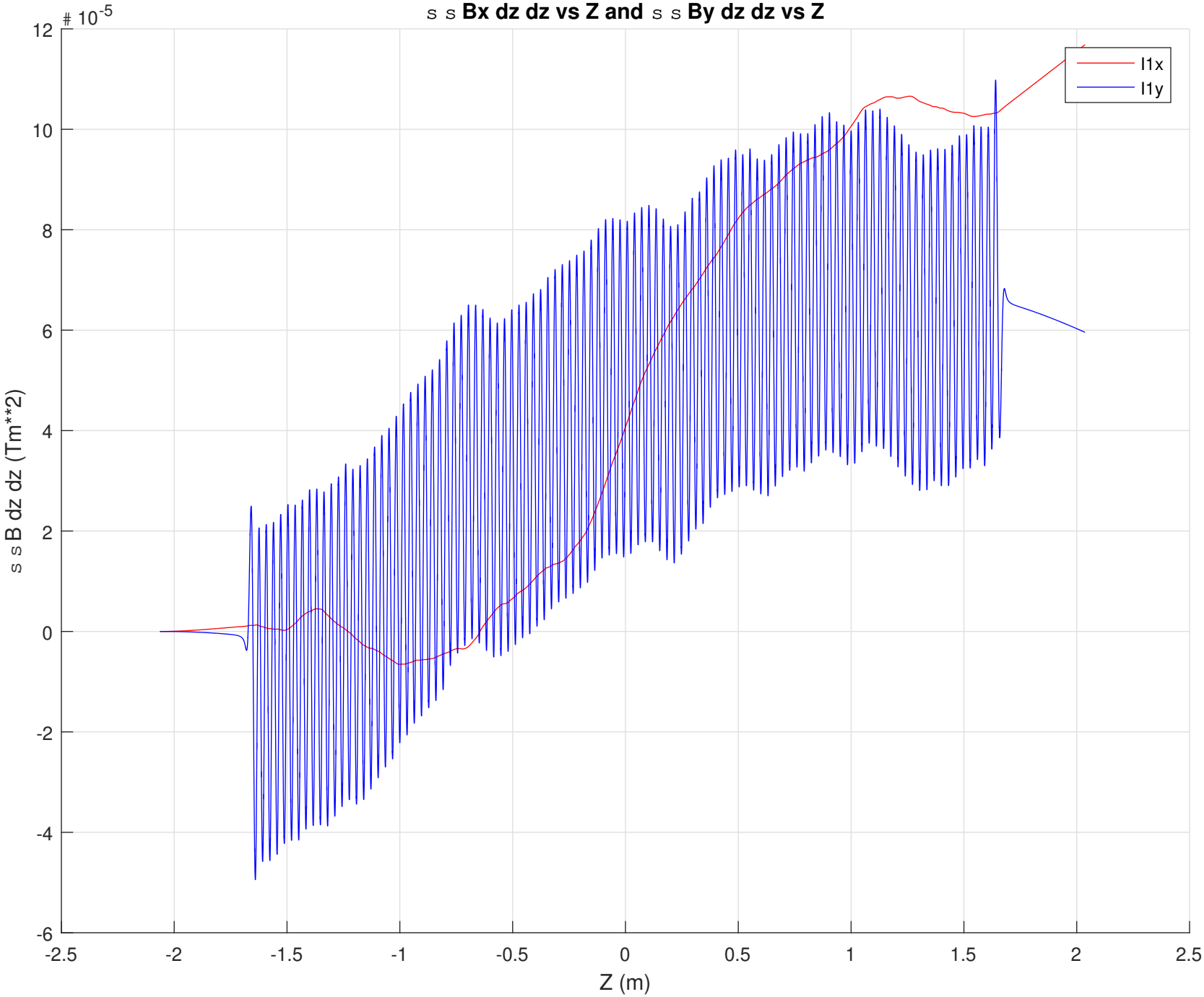
Parameters:
INPUT-FILE-DIR =S:\MagData\LCLS\Undulator\HXU-32\DATASET0001\Fine Tuning\Z Scans\Run 062\
INPUT-FILE-NAME =x+00000-y+000-bscanz.dat
INPUT-FILE-TYPE =ZVXYBXYH
CORR-REQUIRED =0
GAMMA =7827.79
DEVICE CENTER POSITION ZM =0 m
DEVICE ENTRANCE POSITION ZM =0 m
DEVICE EXIT POSITION ZM =0 m
NOM-LAMBDA-R =1.5e-10 m

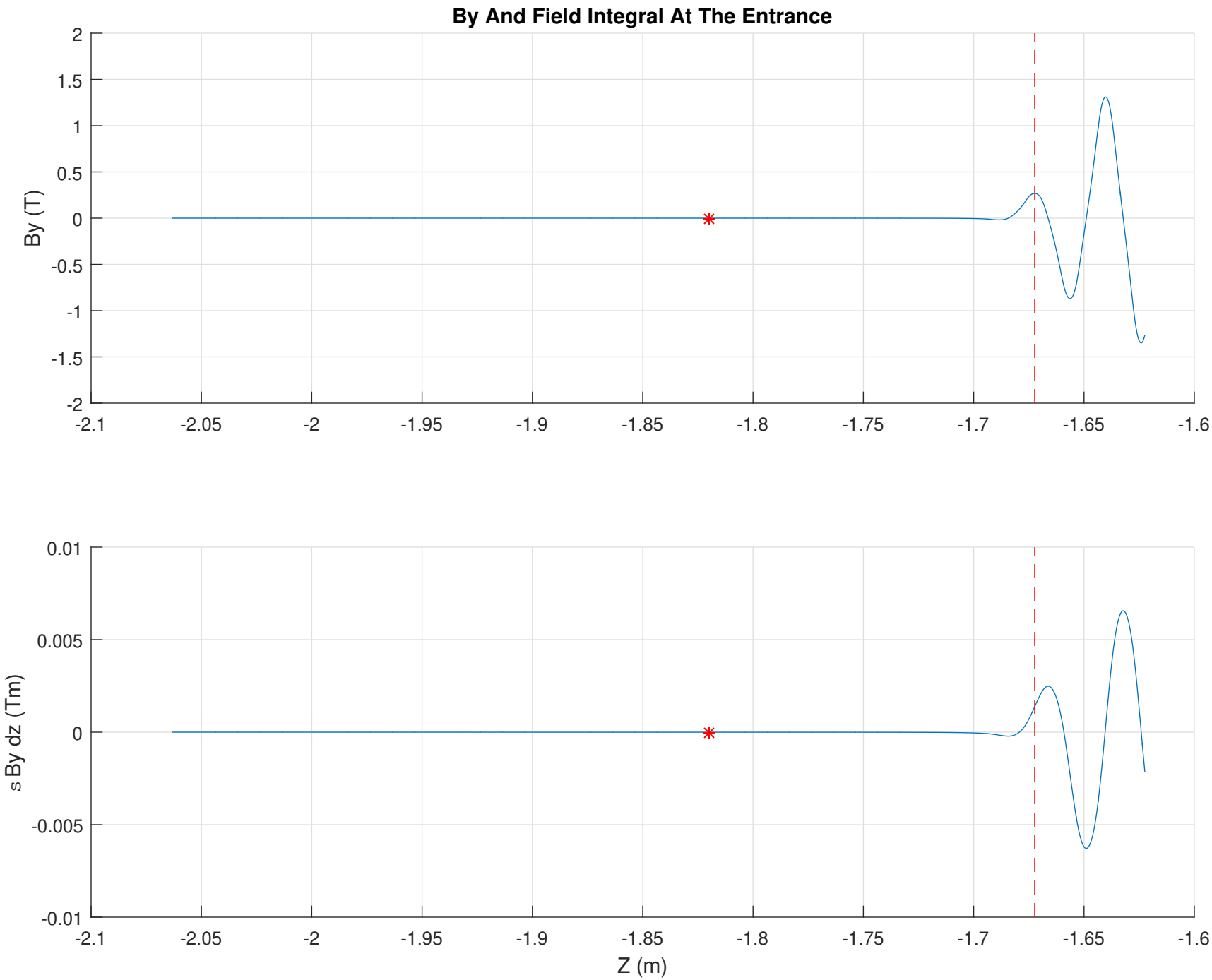

Bx, By, Bz vs Zm
10^-3
Bx (T)
By (T)
Bz (T)
Zm Measurement Position (m)

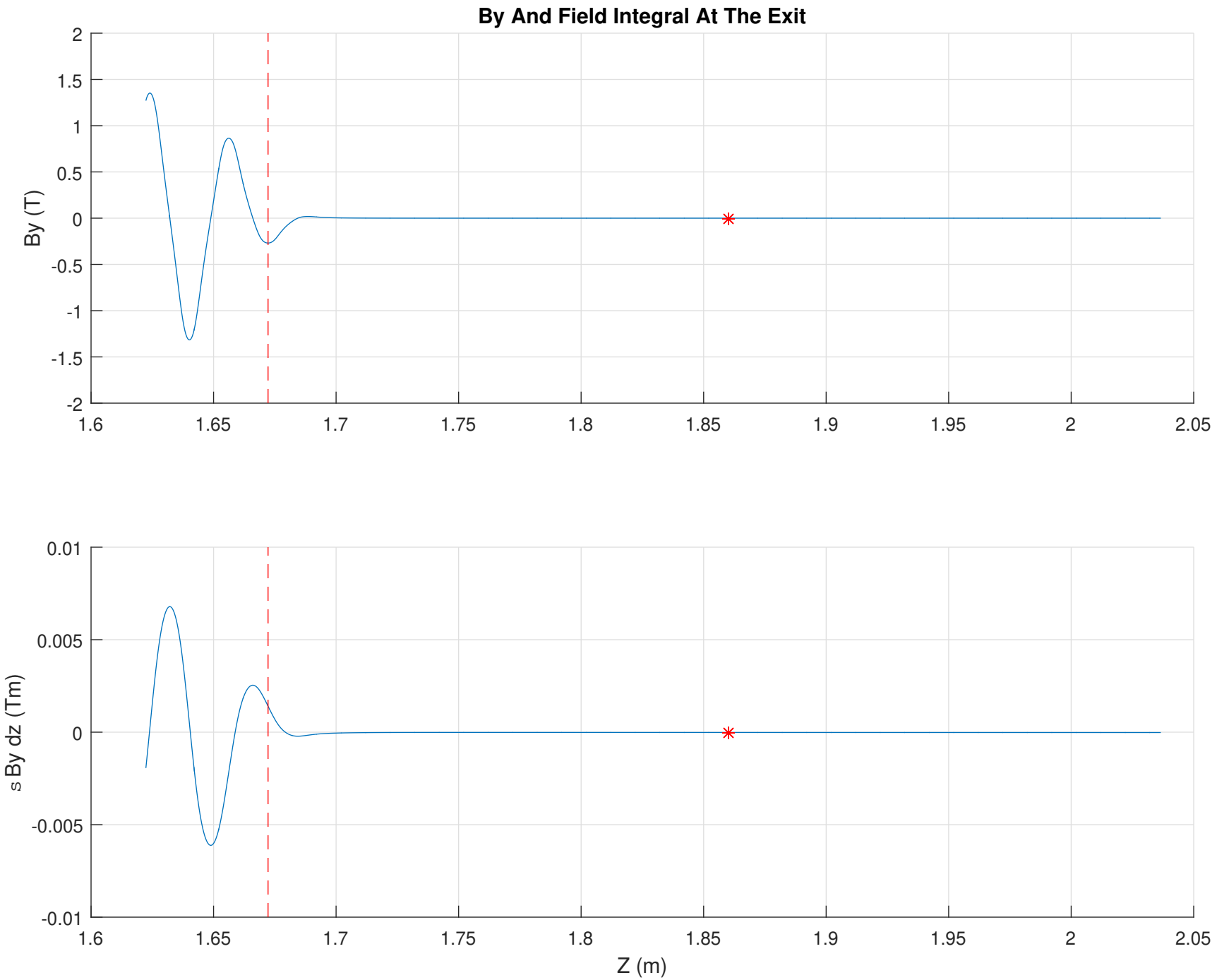

Bx and By vs Z
Bx
By
Bx, By (T)
Z (m)
1.5
1
0.5
0
-0.5
-1
-1.5
-2.5
-2
-1.5
-1
-0.5
0
0.5
1
1.5
2
2.5

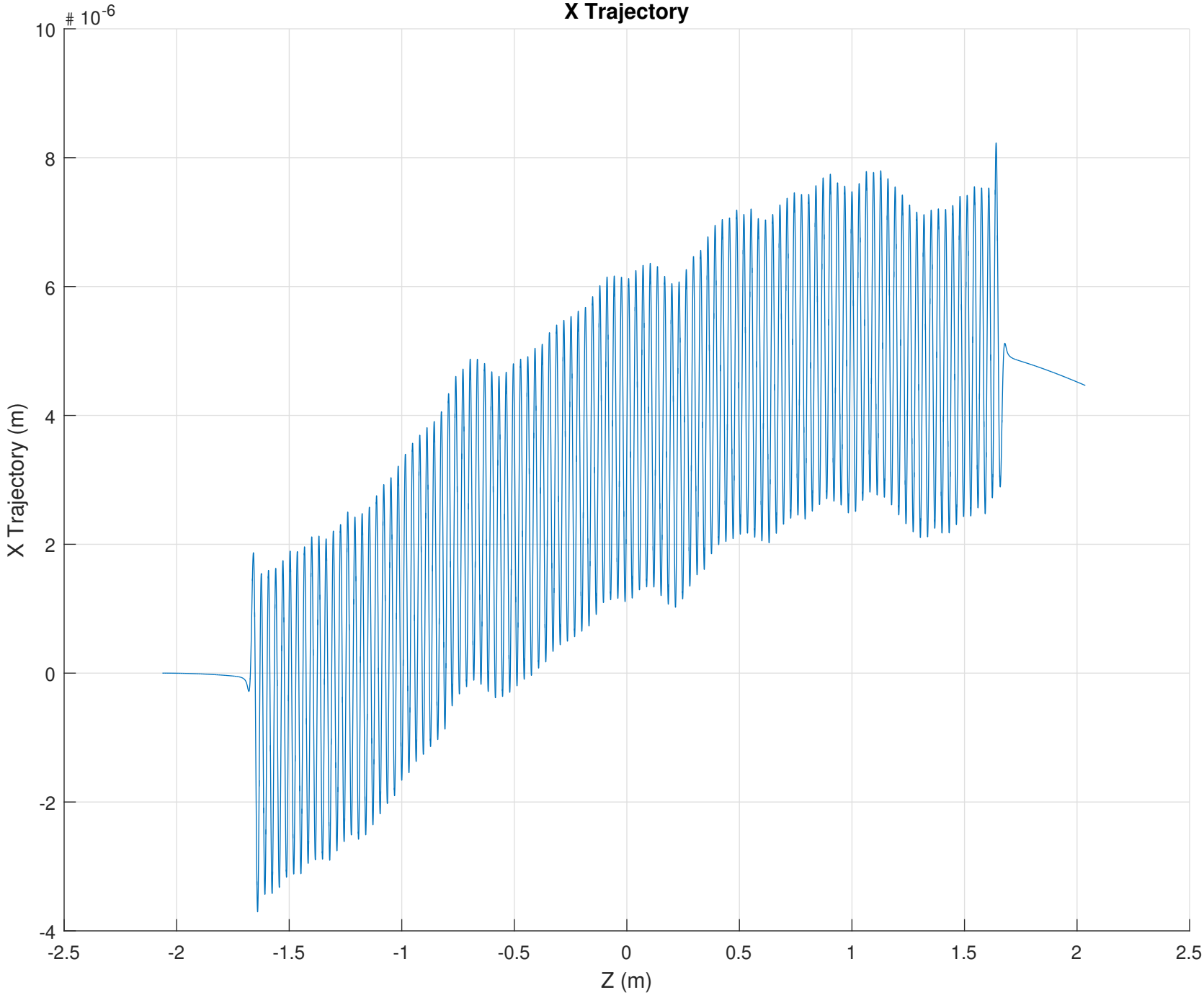

Bx vs Z With Fitted Peaks And Zeros
10^-3
Bx (T)
Z (m)

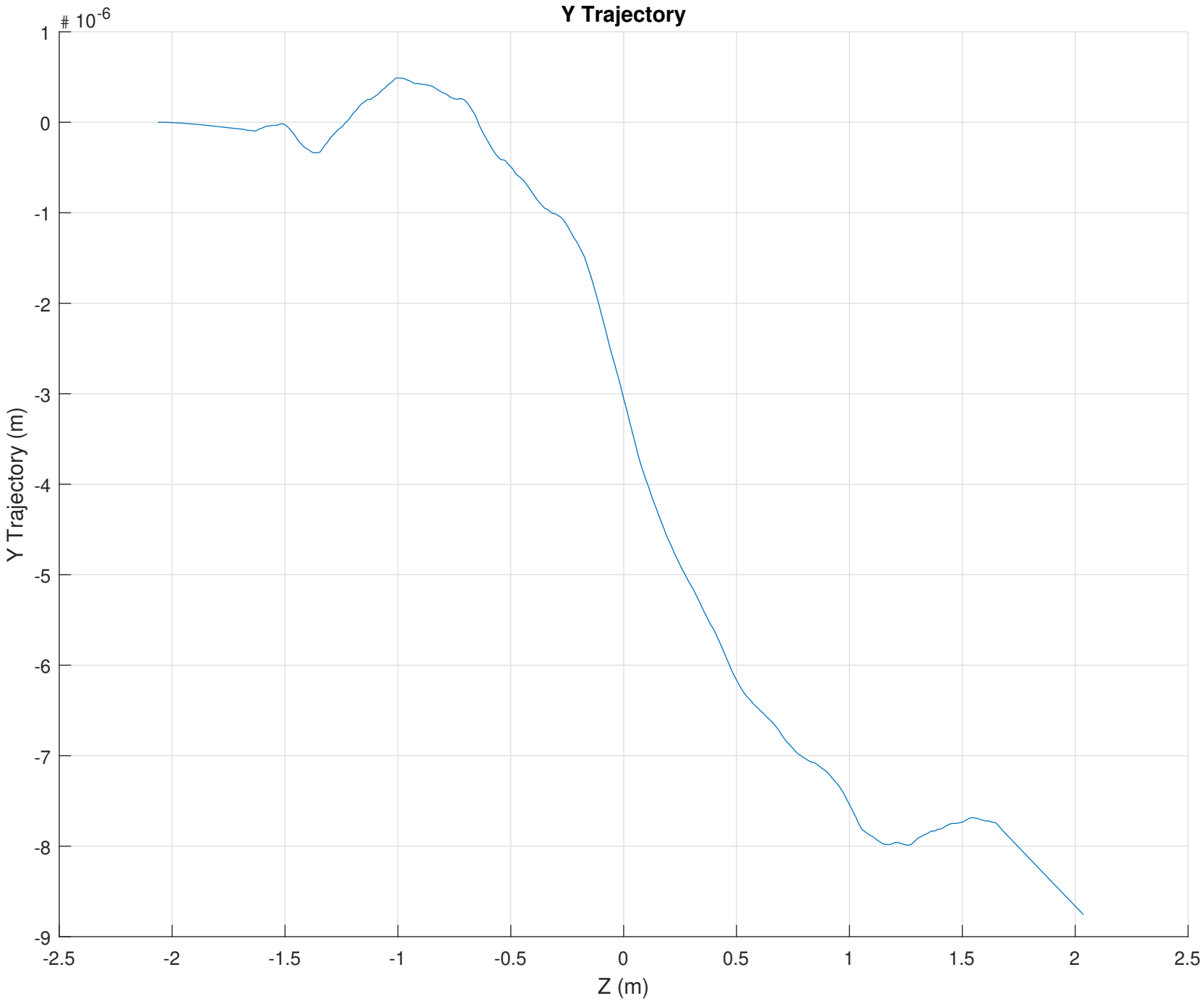

By vs Z With Fitted Peaks And Zeros
12
43
74
106
137
168
199
Pole
By (T)
Z (m)

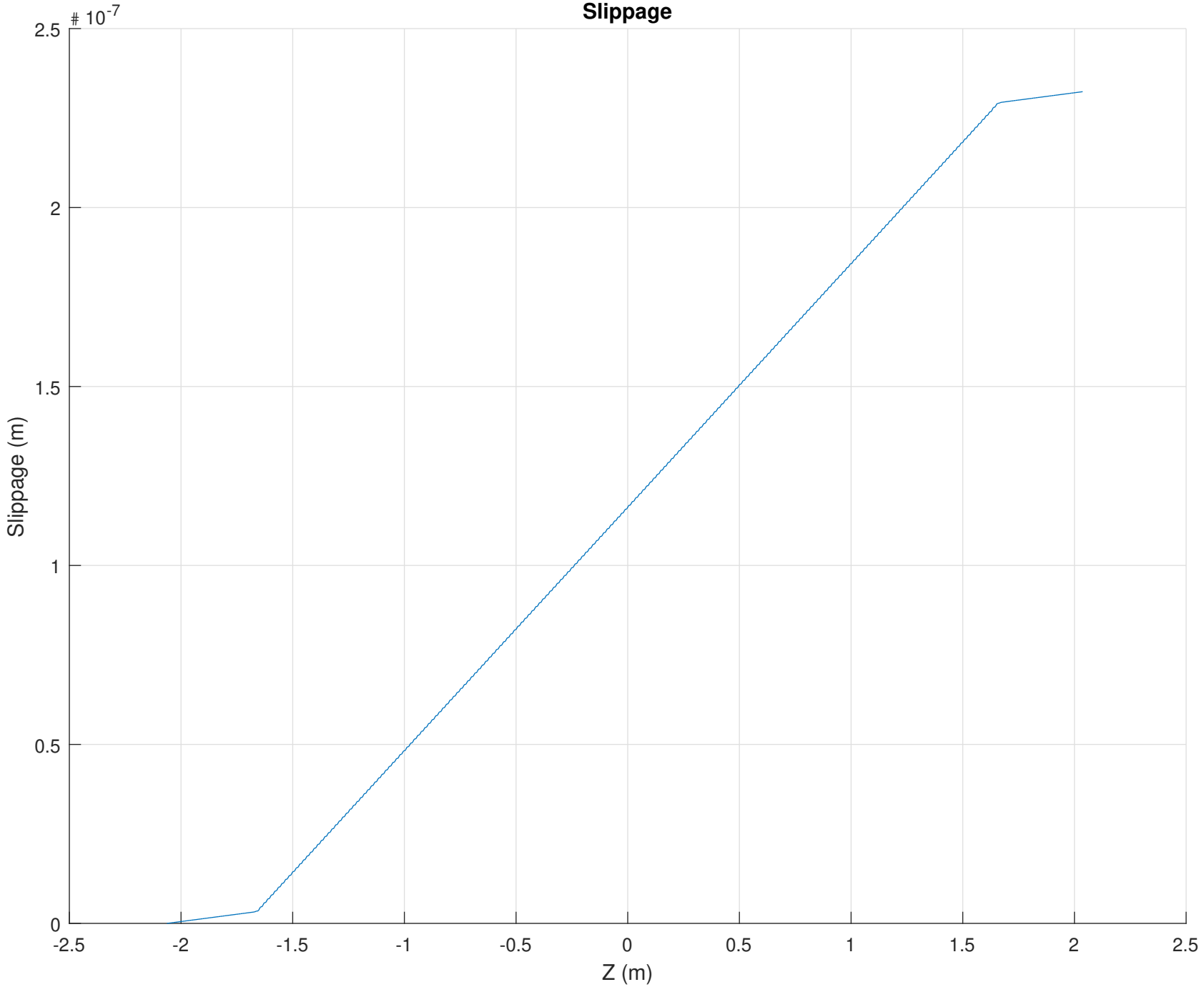

s s Bx dz dz vs Z and s s By dz dz vs Z
10^-5
12
10
8
6
4
2
0
-2
-4
-6
-2.5
-2
-1.5
-1
-0.5
0
0.5
1
1.5
2
2.5
Z (m)
s s B dz dz (Tm**2)
I1x
I1y

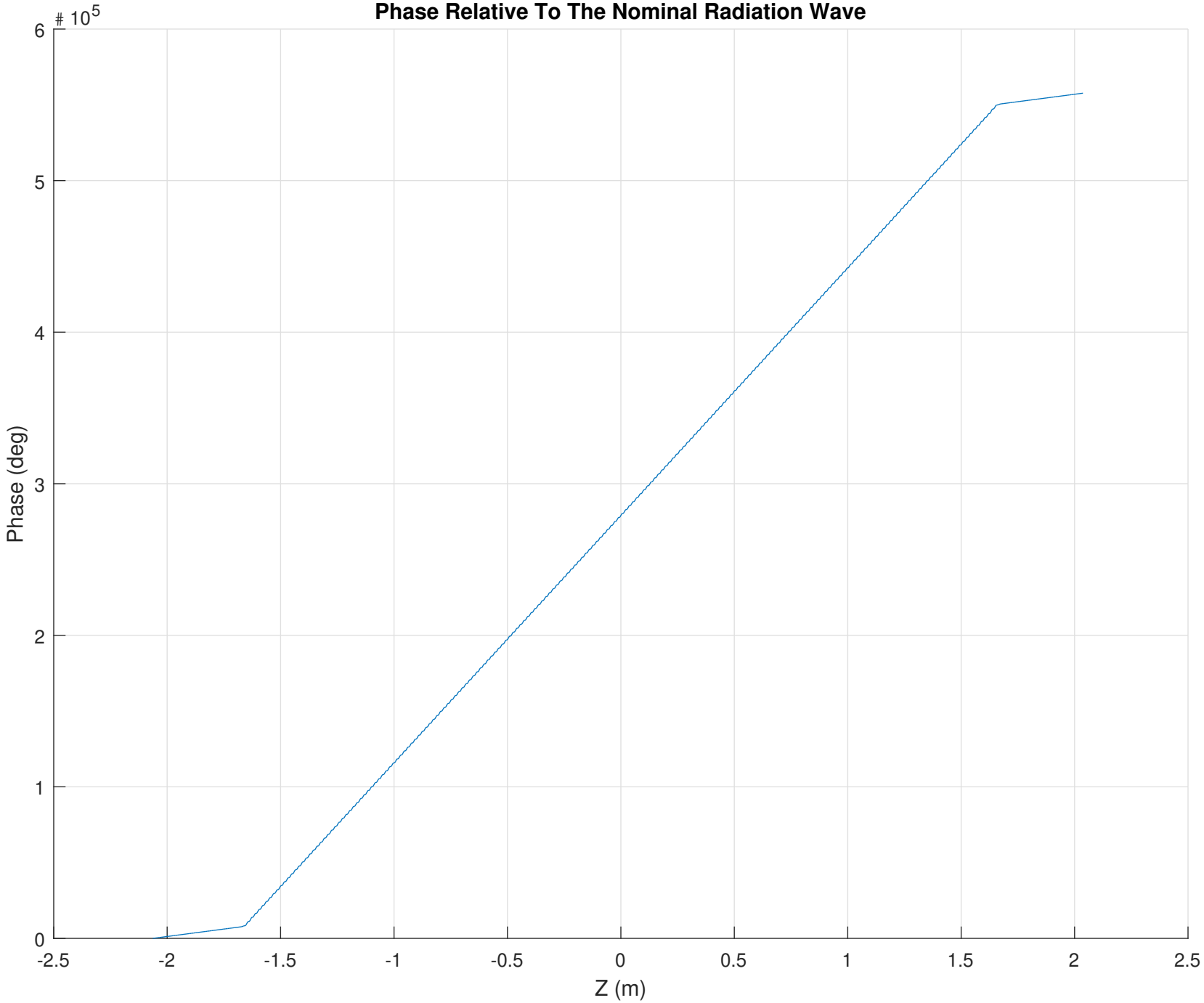

By And Field Integral At The Entrance
By (T)
2
1.5
1
0.5
0
-0.5
-1
-1.5
-2
-2.1
-2.05
-2
-1.95
-1.9
-1.85
-1.8
-1.75
-1.7
-1.65
-1.6
s By dz (Tm)
0.01
0.005
0
-0.005
-0.01
Z (m)


By And Field Integral At The Exit
By (T)
2
1.5
1
0.5
0
-0.5
-1
-1.5
-2
1.6
1.65
1.7
1.75
1.8
1.85
1.9
1.95
2
2.05
s By dz (Tm)
0.01
0.005
0
-0.005
-0.01
Z (m)


X Trajectory
10^-6
10
8
6
4
2
0
-2
-4
X Trajectory (m)
-2.5
-2
-1.5
-1
-0.5
0
0.5
1
1.5
2
2.5
Z (m)


Y Trajectory
10^-6
1
0
-1
-2
-3
-4
-5
-6
-7
-8
-9
Y Trajectory (m)
-2.5
-2
-1.5
-1
-0.5
0
0.5
1
1.5
2
2.5
Z (m)


Slippage
10^-7
2.5
2
1.5
1
0.5
0
Slippage (m)
-2.5
-2
-1.5
-1
-0.5
0
0.5
1
1.5
2
2.5
Z (m)


Phase Relative To The Nominal Radiation Wave
10^5
6
5
4
3
2
1
0
Phase (deg)
-2.5
-2
-1.5
-1
-0.5
0
0.5
1
1.5
2
2.5
Z (m)