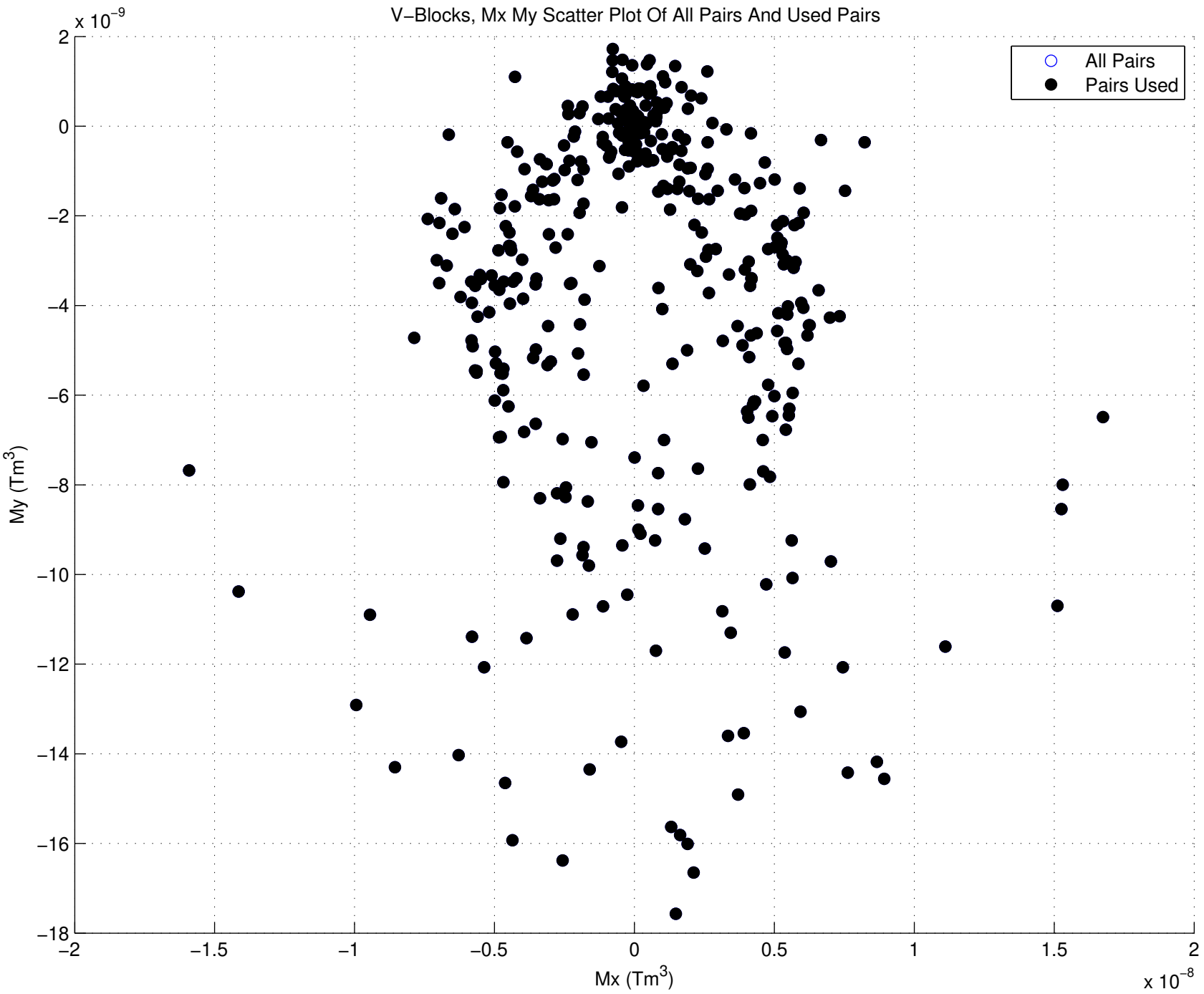
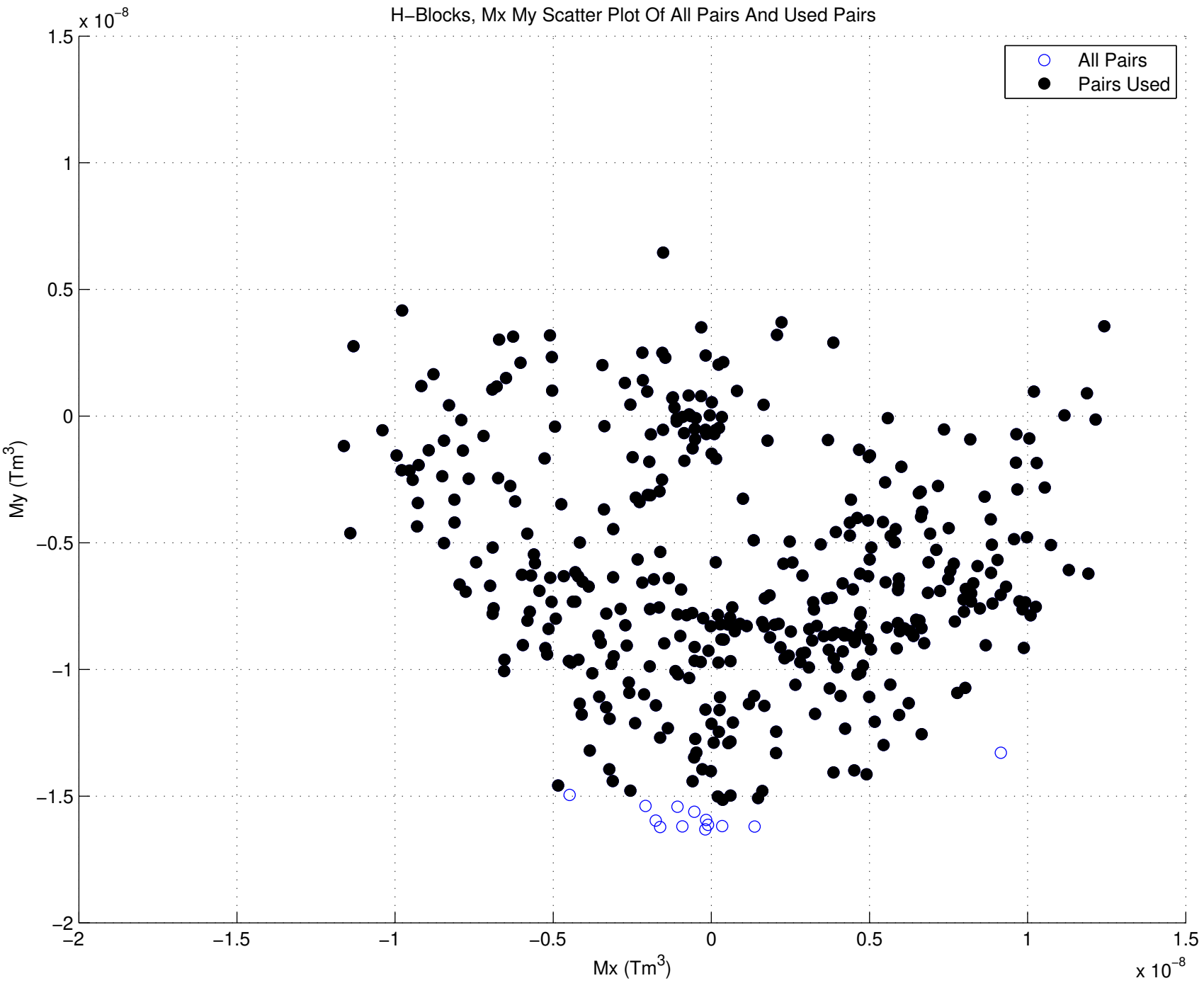
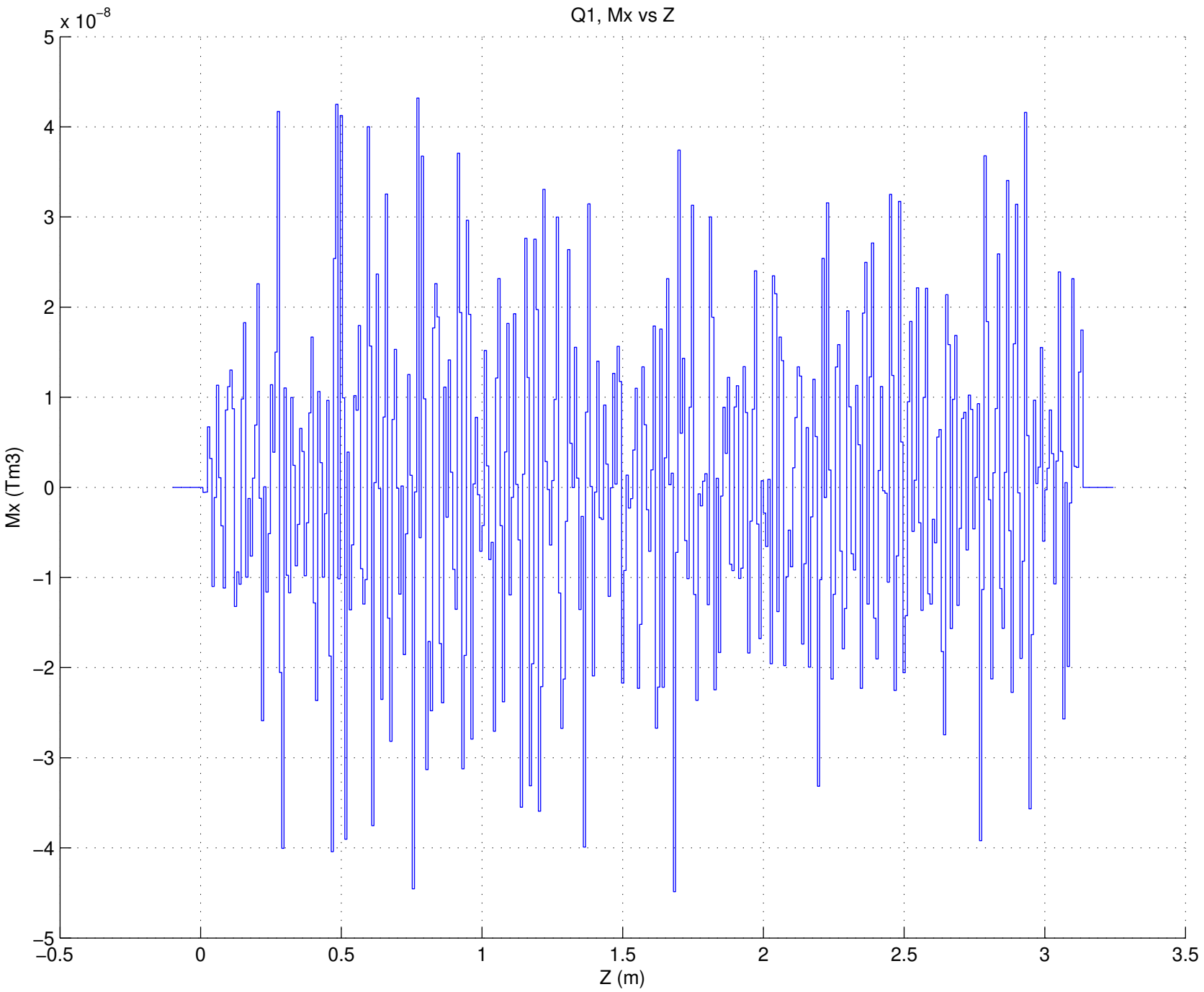
SLAC Magnetic Measurements

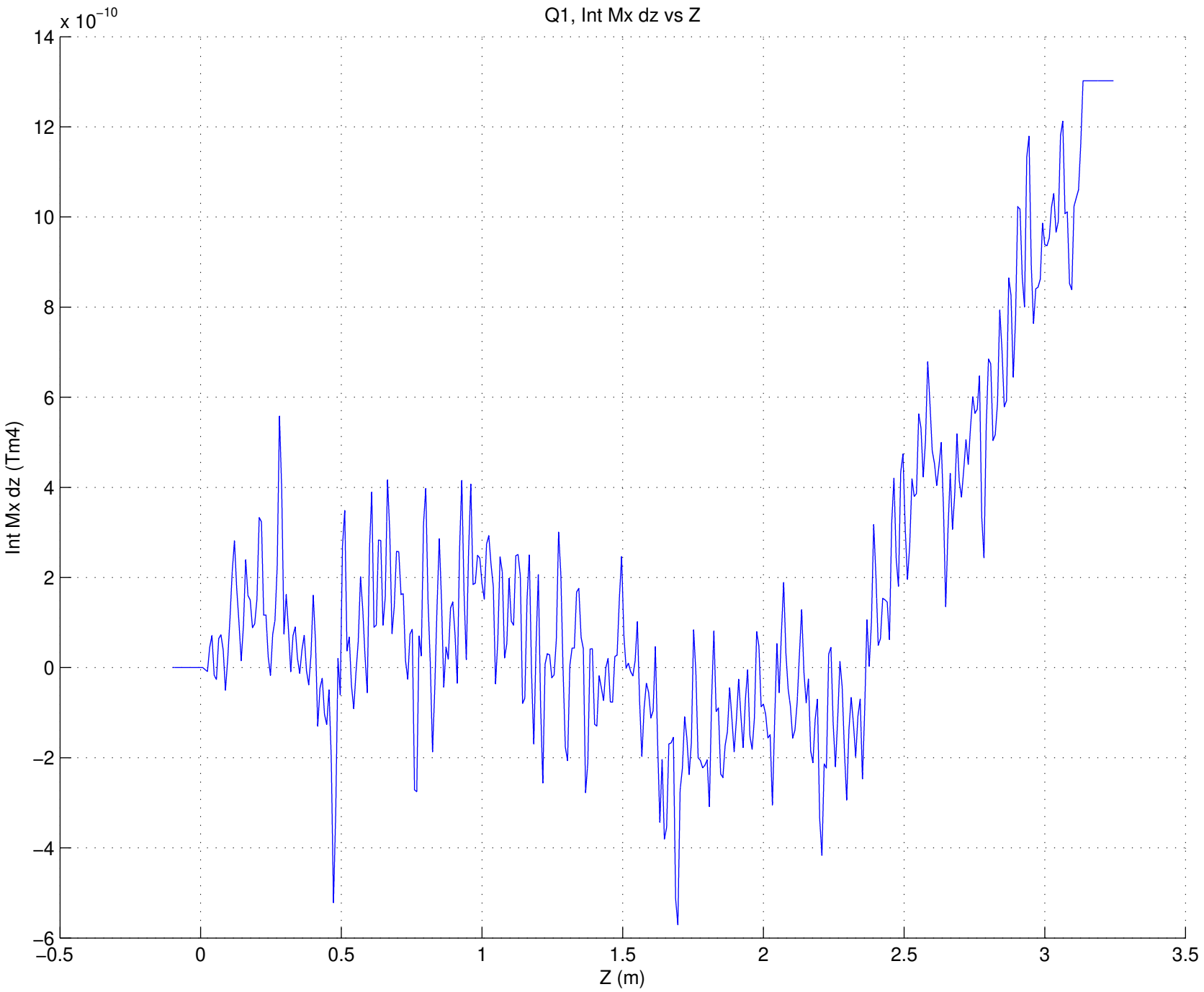
Magnet Block Placement Analysis
−−−−−−−−−−−−−−−−−−−−−−−−−−−−

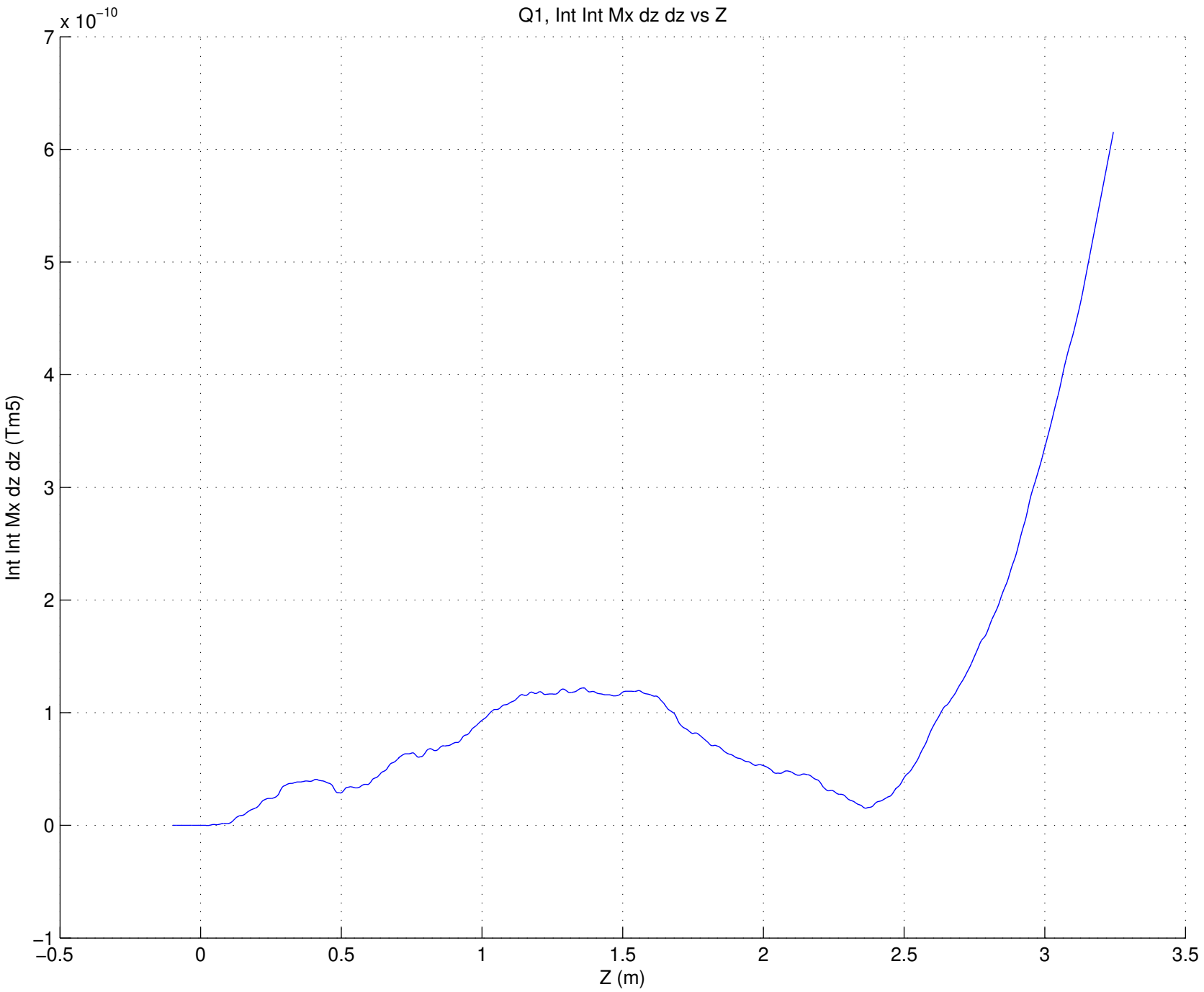
Parameters:
OUTPUT−FILE−DIR =C:\Magdata\Delta 3.2 Block Sort Results

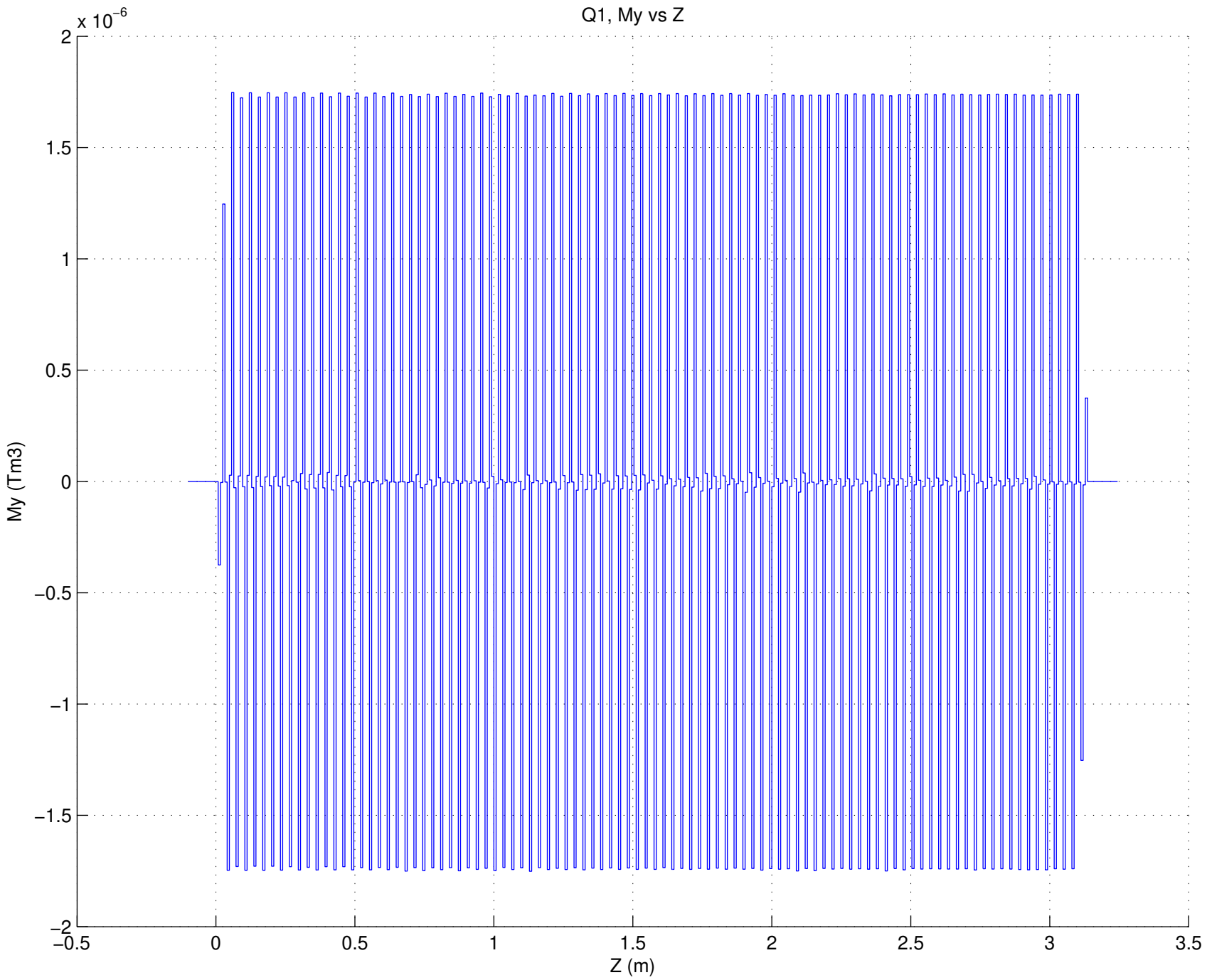

V−Blocks, Mx My Scatter Plot Of All Pairs And Used Pairs
x 10^−9
2
0
−2
−4
−6
−8
−10
−12
−14
−16
−18
My (Tm^3)
All Pairs
Pairs Used
−2
−1.5
−1
−0.5
0
0.5
1
1.5
2
Mx (Tm^3)
x 10^−8

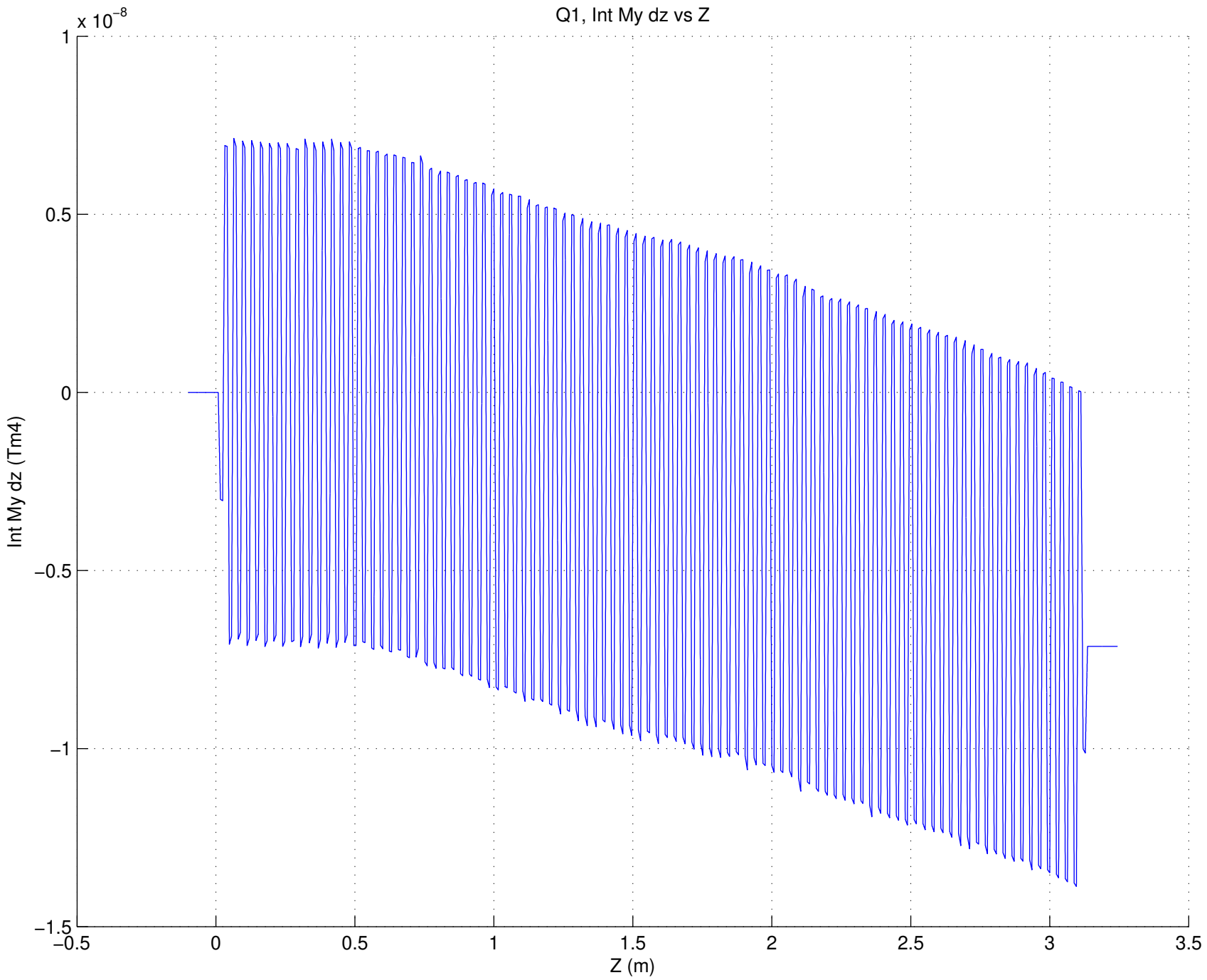

H−Blocks, Mx My Scatter Plot Of All Pairs And Used Pairs
x 10^−8
All Pairs
Pairs Used
My (Tm^3)
Mx (Tm^3)
x 10^−8
1.5
1
0.5
0
−0.5
−1
−1.5
−2
−2
−1.5
−1
−0.5
0
0.5
1
1.5

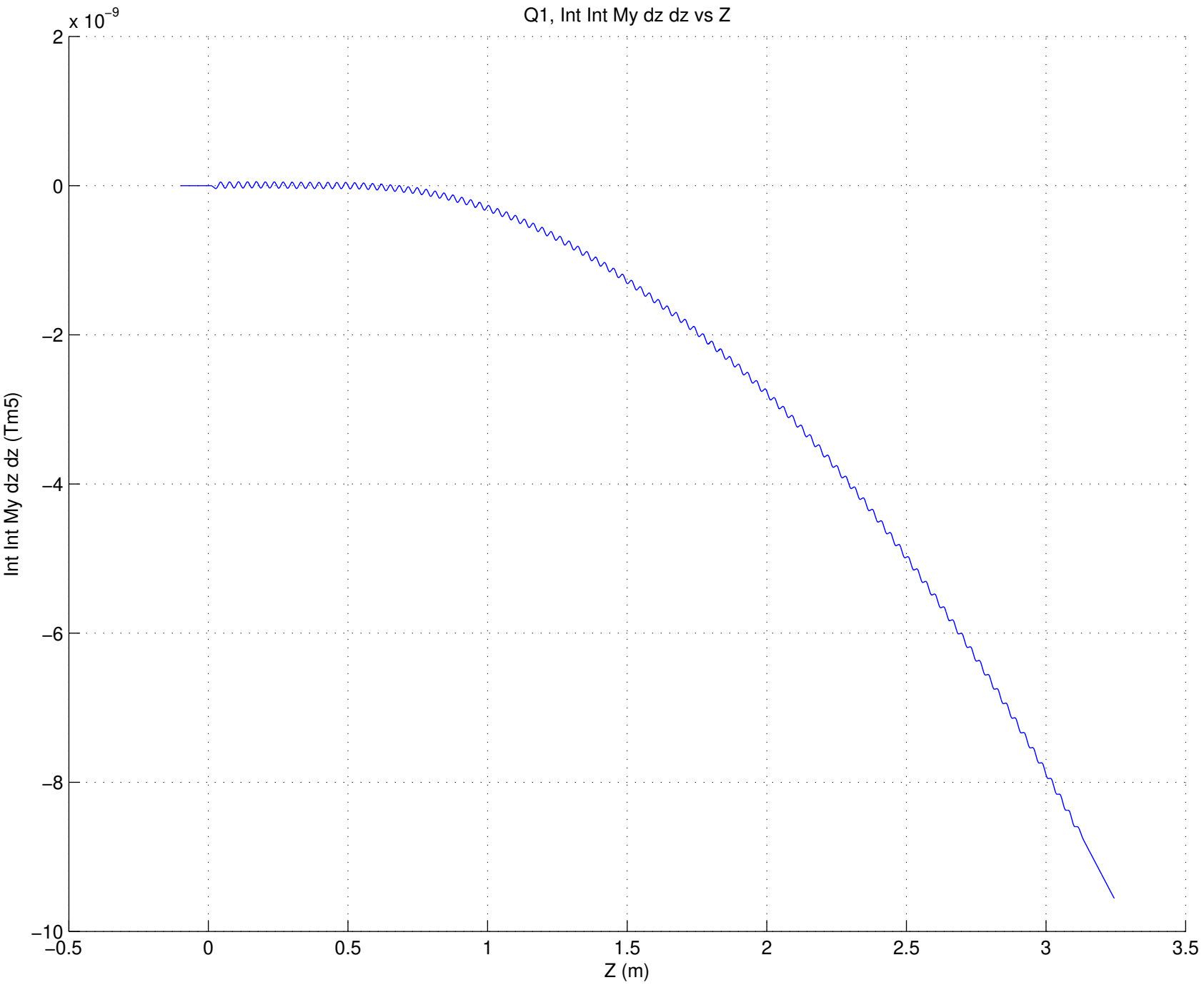

Q1, Mx vs Z
x 10^-8
5
4
3
2
1
0
−1
−2
−3
−4
−5
Mx (Tm3)
−0.5
0
0.5
1
1.5
2
2.5
3
3.5
Z (m)

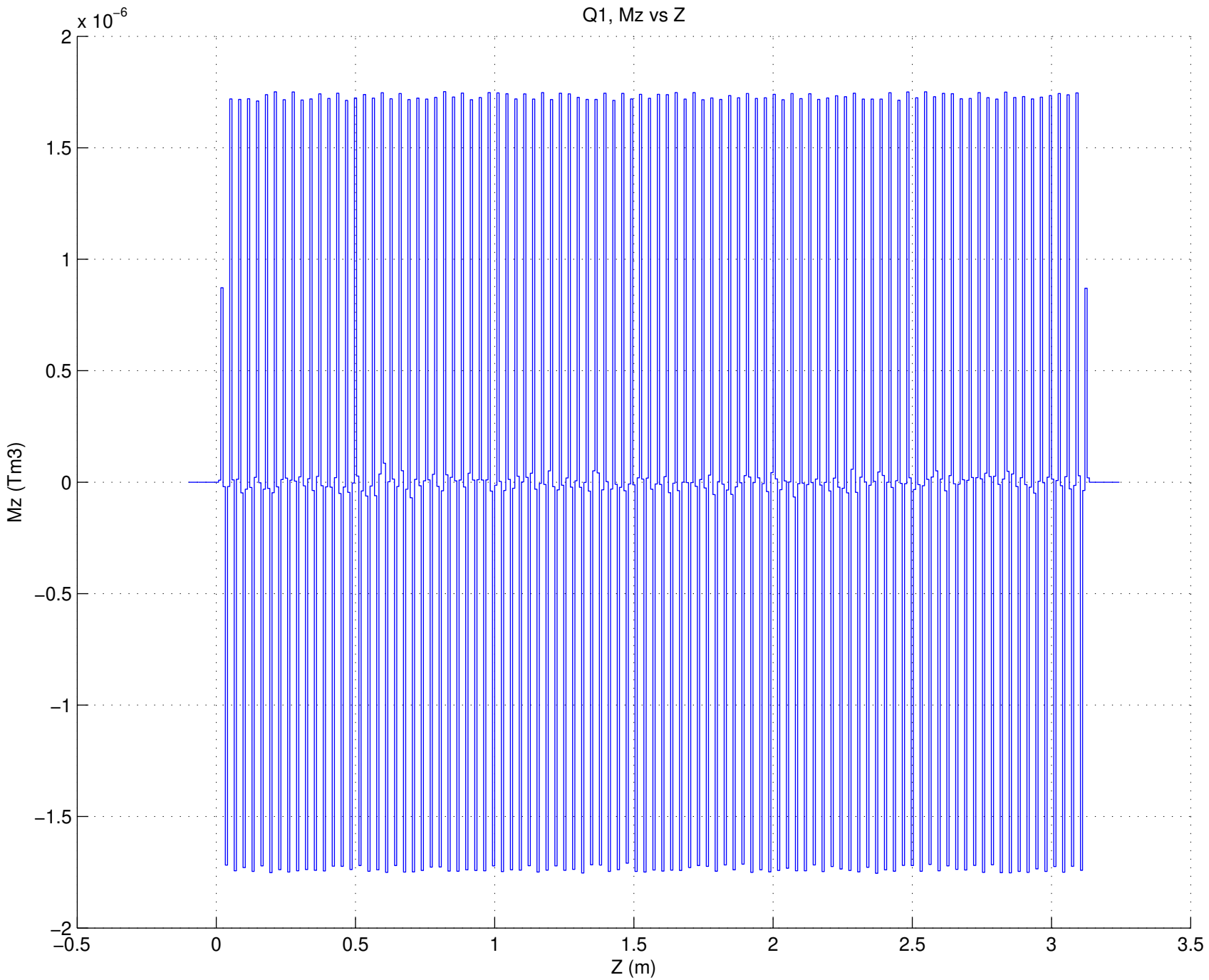

Q1, Int Mx dz vs Z
x 10^-10
14
12
10
8
6
4
2
0
−2
−4
−6
Int Mx dz (Tm4)
−0.5
0
0.5
1
1.5
2
2.5
3
3.5
Z (m)

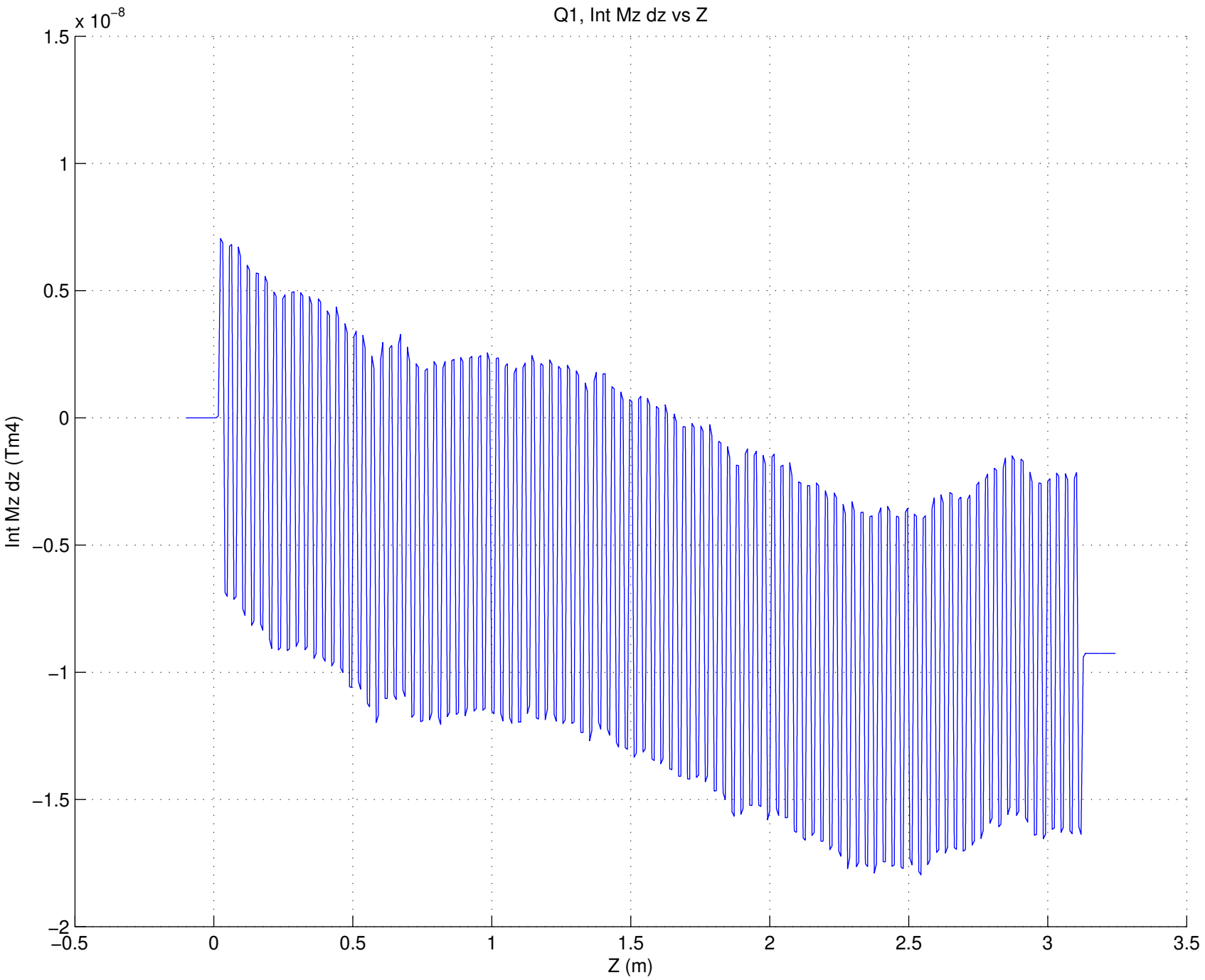

Q1, Int Int Mx dz dz vs Z
x 10^-10
7
6
5
4
3
2
1
0
−1
Int Int Mx dz dz (Tm5)
−0.5
0
0.5
1
1.5
2
2.5
3
3.5
Z (m)

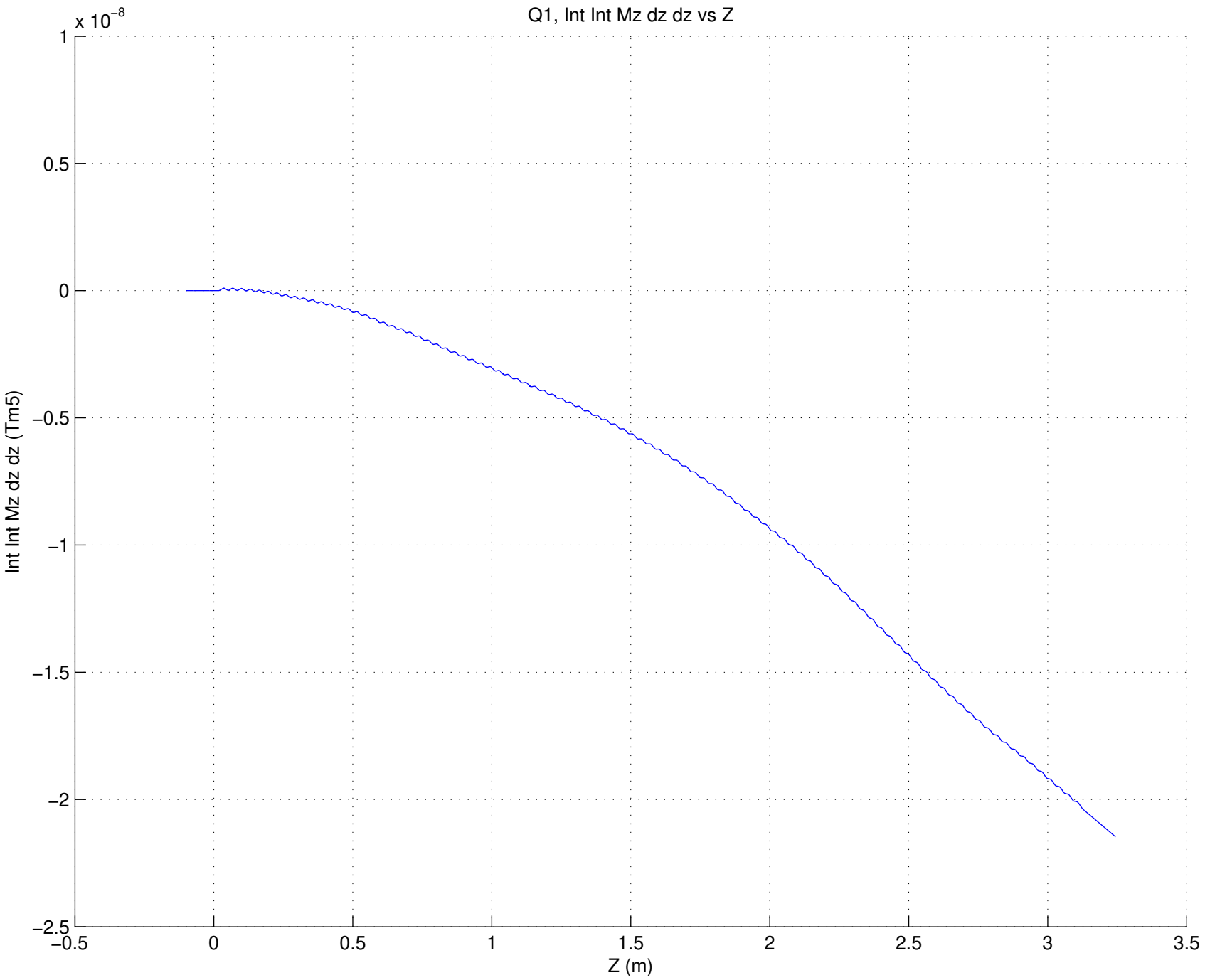

Q1, My vs Z
x 10^-6
2
1.5
1
0.5
0
−0.5
−1
−1.5
−2
My (Tm3)
−0.5
0
0.5
1
1.5
2
2.5
3
3.5
Z (m)

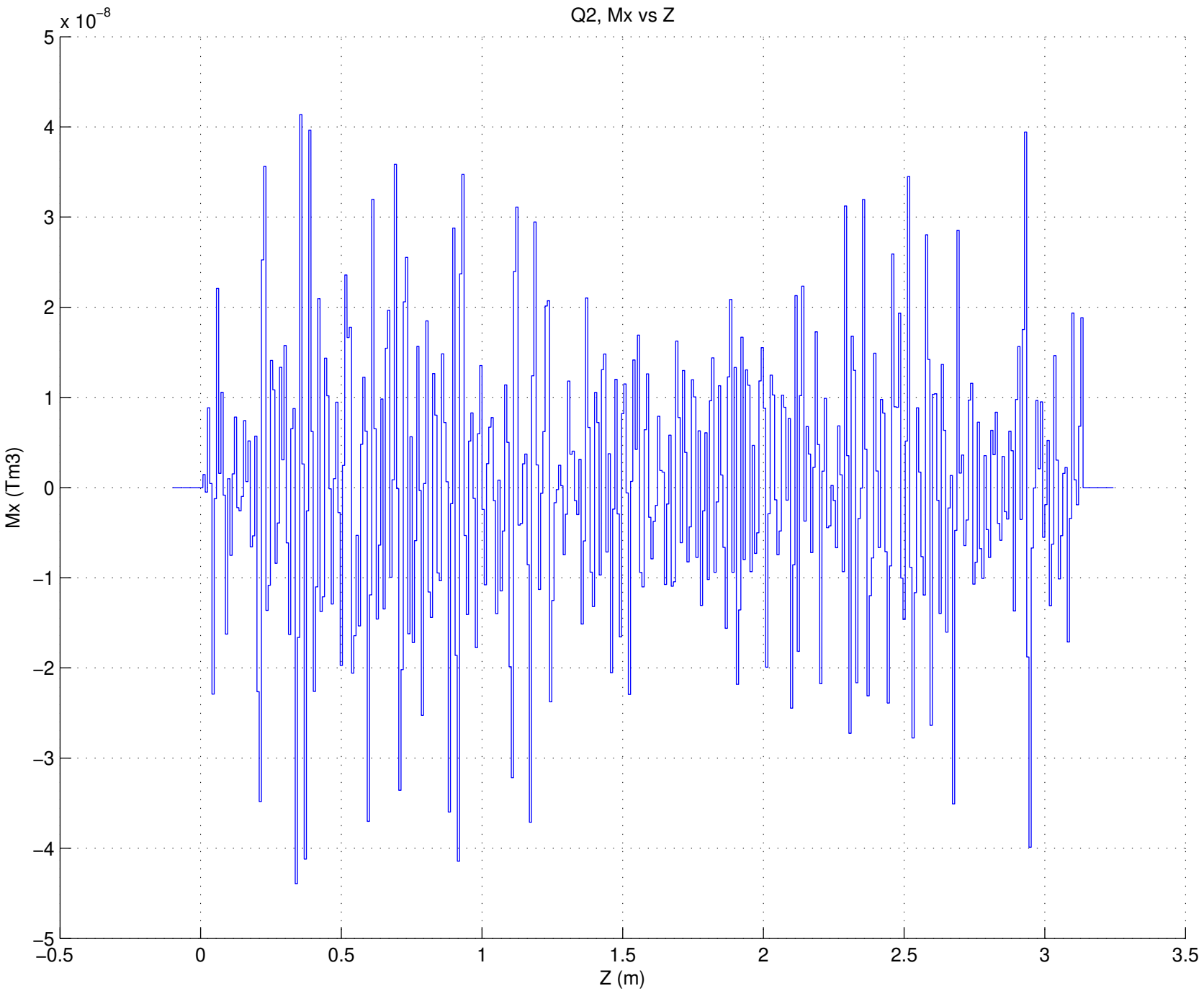

Q1, Int My dz vs Z
x 10^-8
1
0.5
0
−0.5
−1
−1.5
Int My dz (Tm4)
−0.5
0
0.5
1
1.5
2
2.5
3
3.5
Z (m)

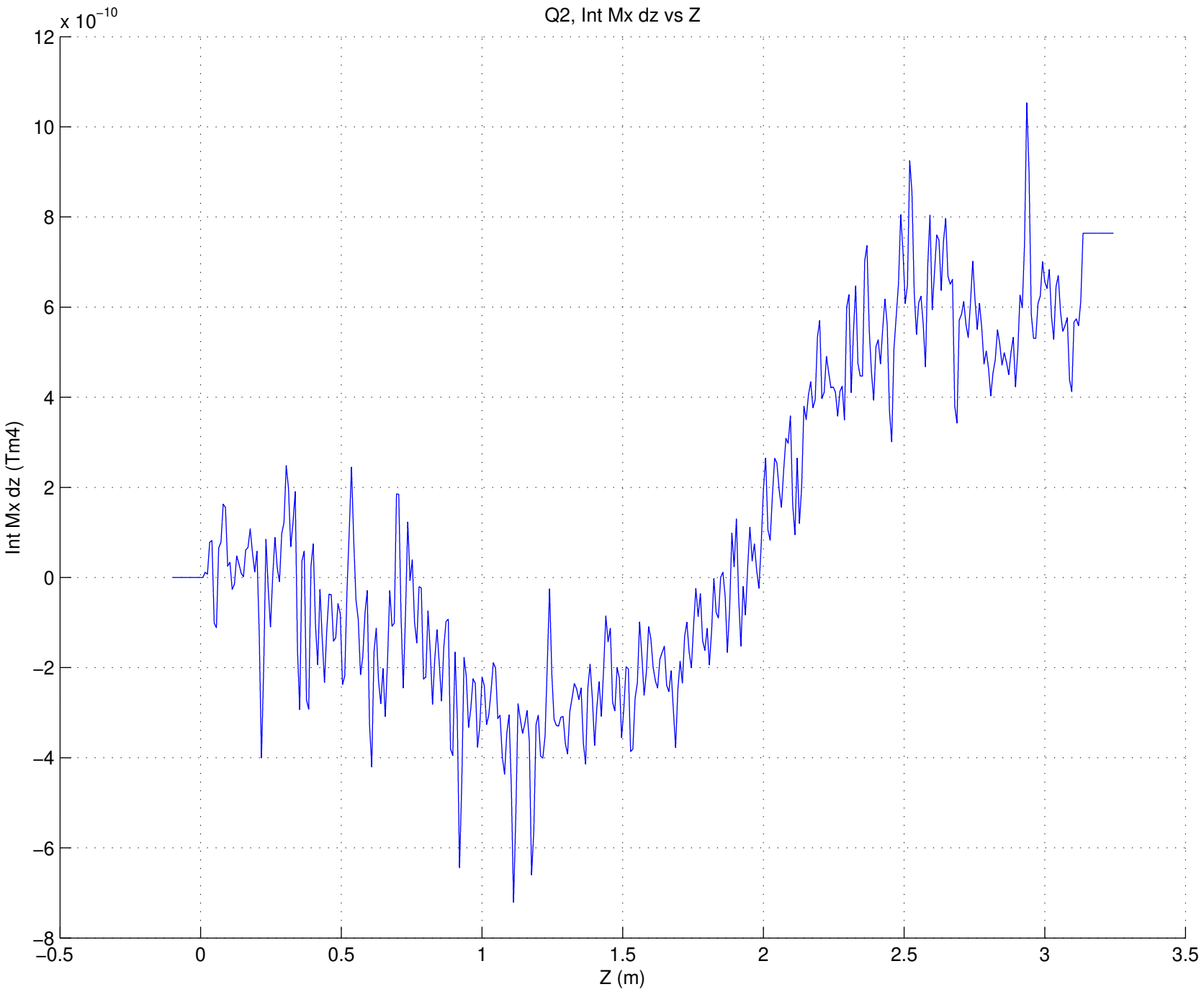

Q1, Int Int My dz dz vs Z
x 10^-9
2
0
−2
−4
−6
−8
−10
Int Int My dz dz (Tm5)
−0.5
0
0.5
1
1.5
2
2.5
3
3.5
Z (m)

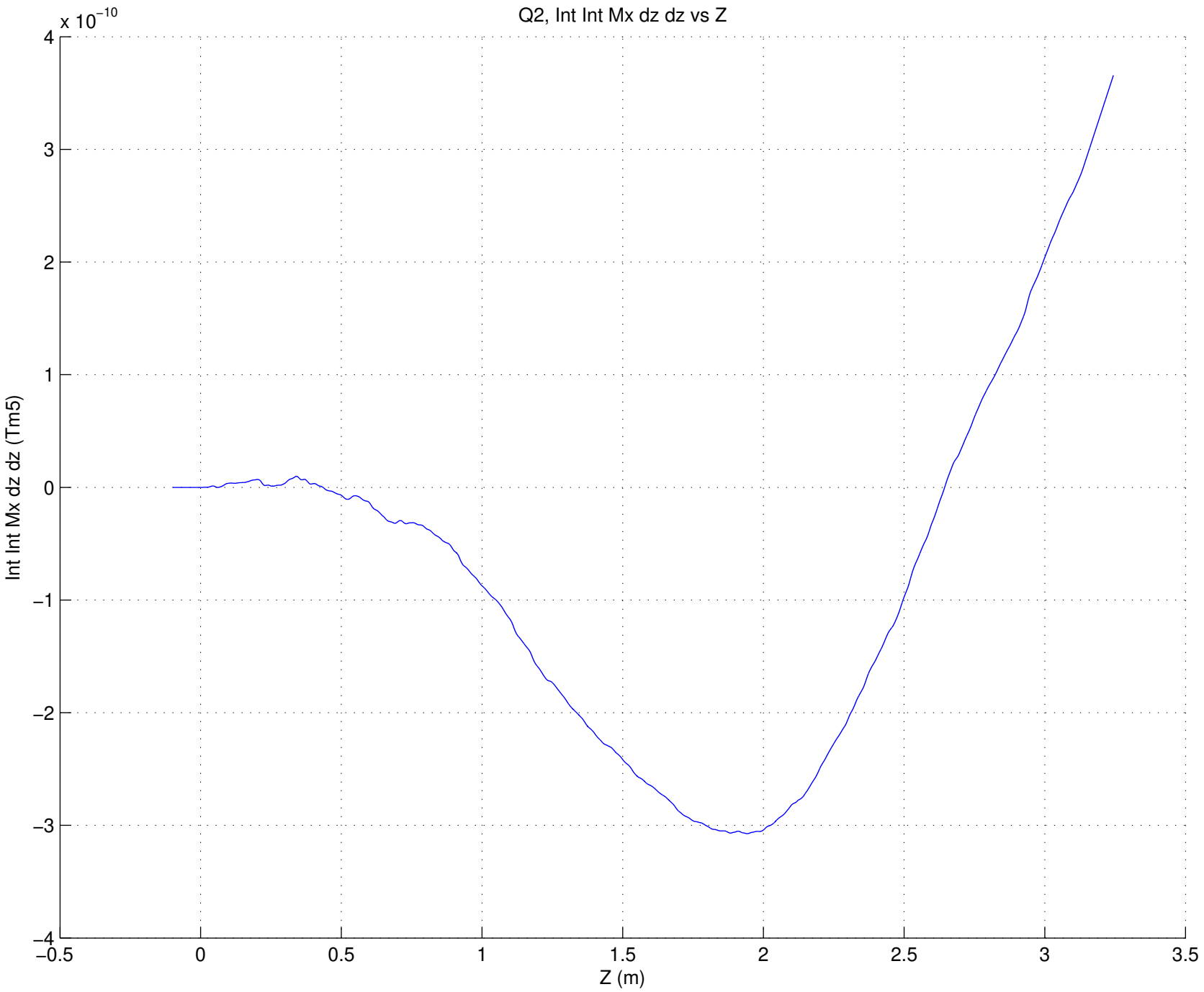

Q1, Mz vs Z
x 10^-6
2
1.5
1
0.5
0
−0.5
−1
−1.5
−2
Mz (Tm3)
−0.5
0
0.5
1
1.5
2
2.5
3
3.5
Z (m)

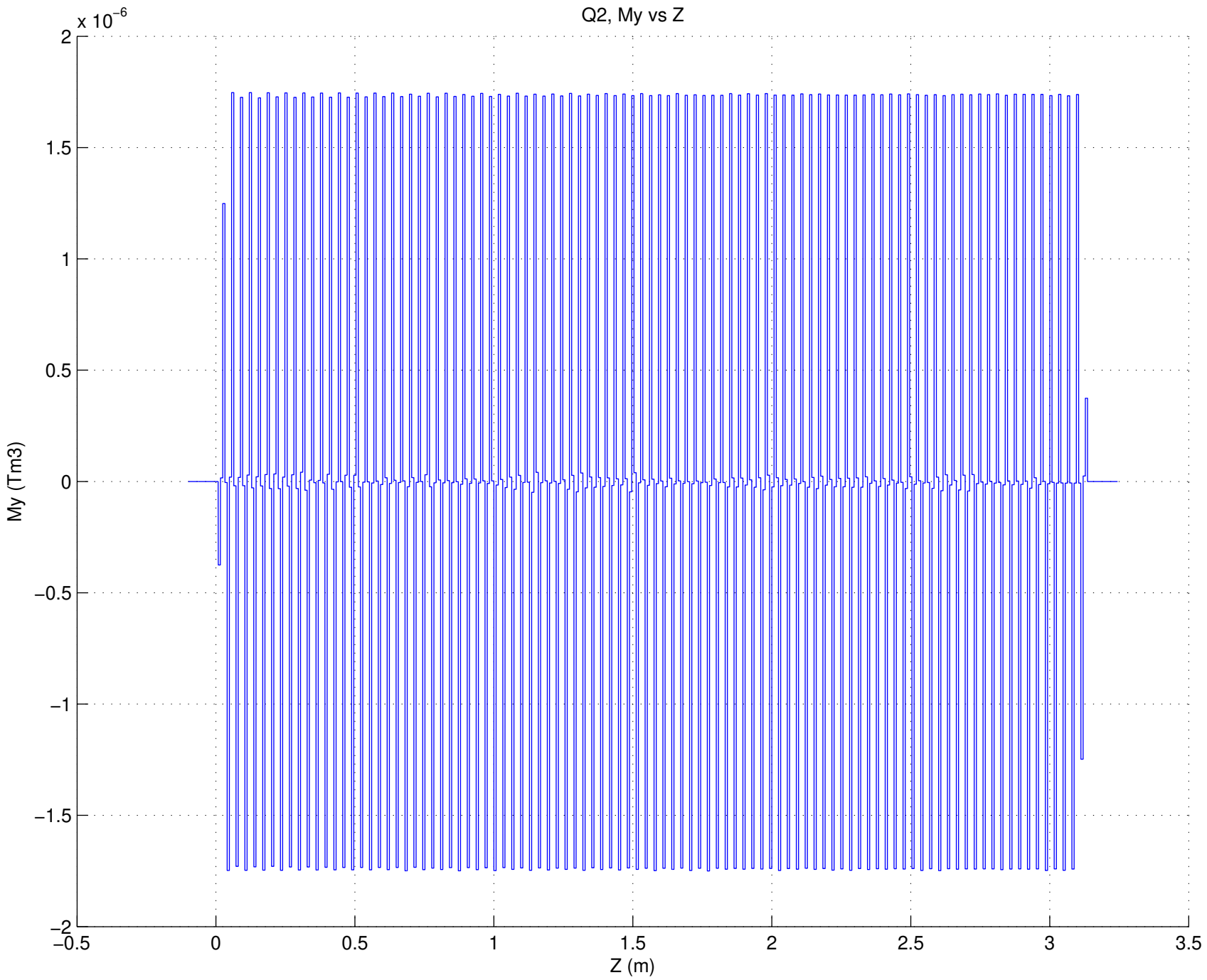

Q1, Int Mz dz vs Z
x 10^-8
1.5
1
0.5
0
−0.5
−1
−1.5
−2
Int Mz dz (Tm4)
−0.5
0
0.5
1
1.5
2
2.5
3
3.5
Z (m)

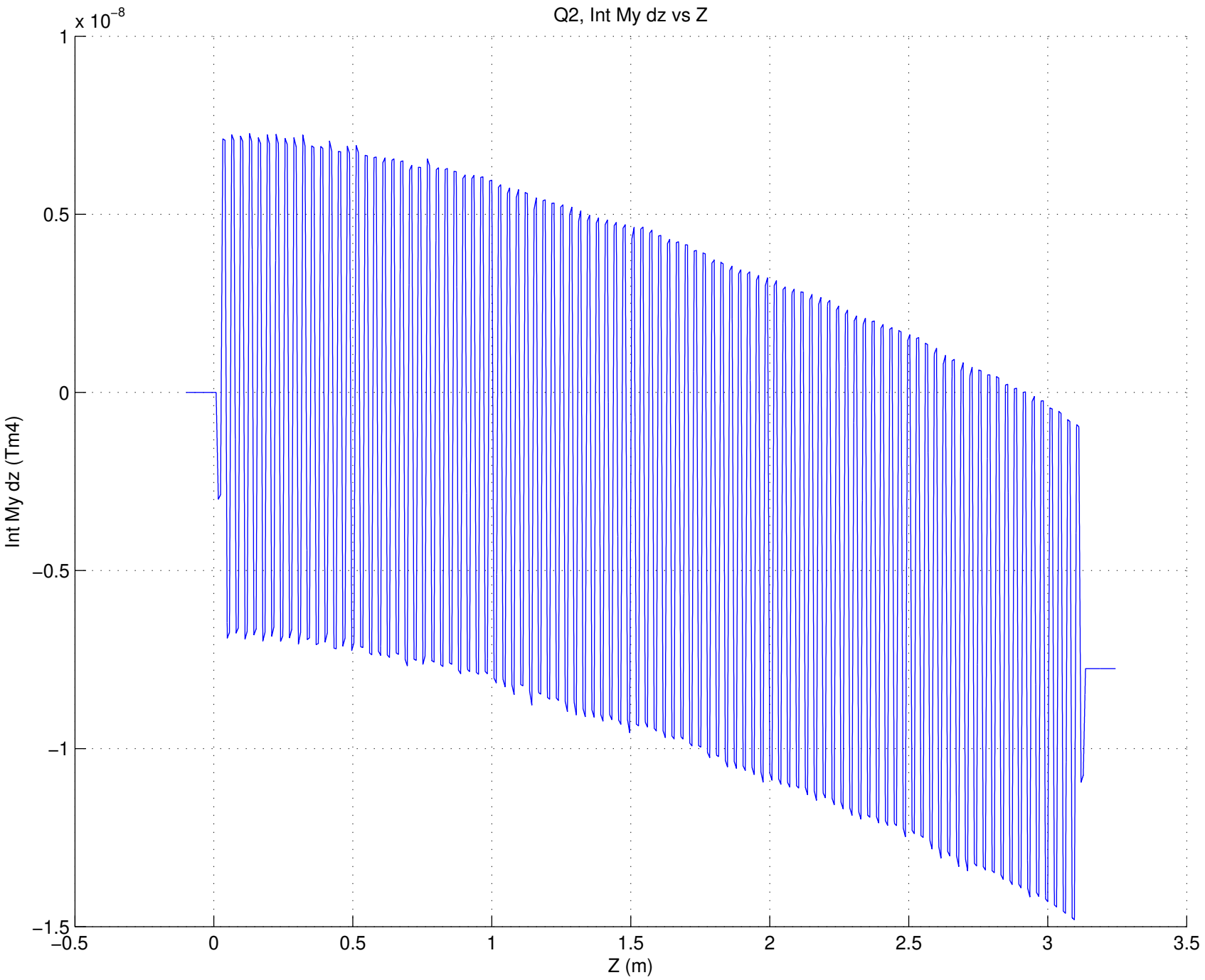

Q1, Int Int Mz dz dz vs Z
x 10^-8
1
0.5
0
−0.5
−1
−1.5
−2
−2.5
Int Int Mz dz dz (Tm5)
−0.5
0
0.5
1
1.5
2
2.5
3
3.5
Z (m)

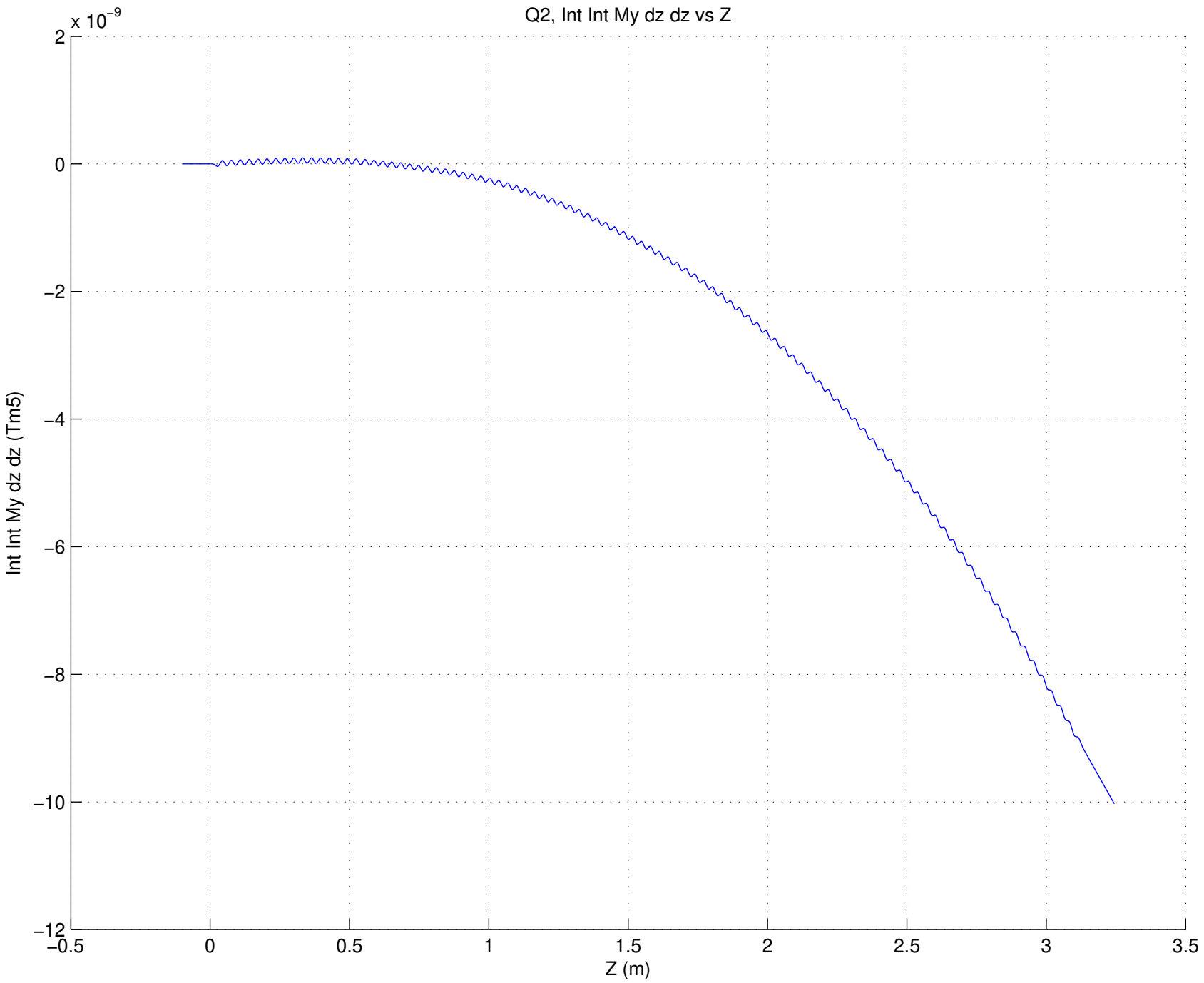

Q2, Mx vs Z
x 10^-8
5
4
3
2
1
0
−1
−2
−3
−4
−5
Mx (Tm3)
−0.5
0
0.5
1
1.5
2
2.5
3
3.5
Z (m)

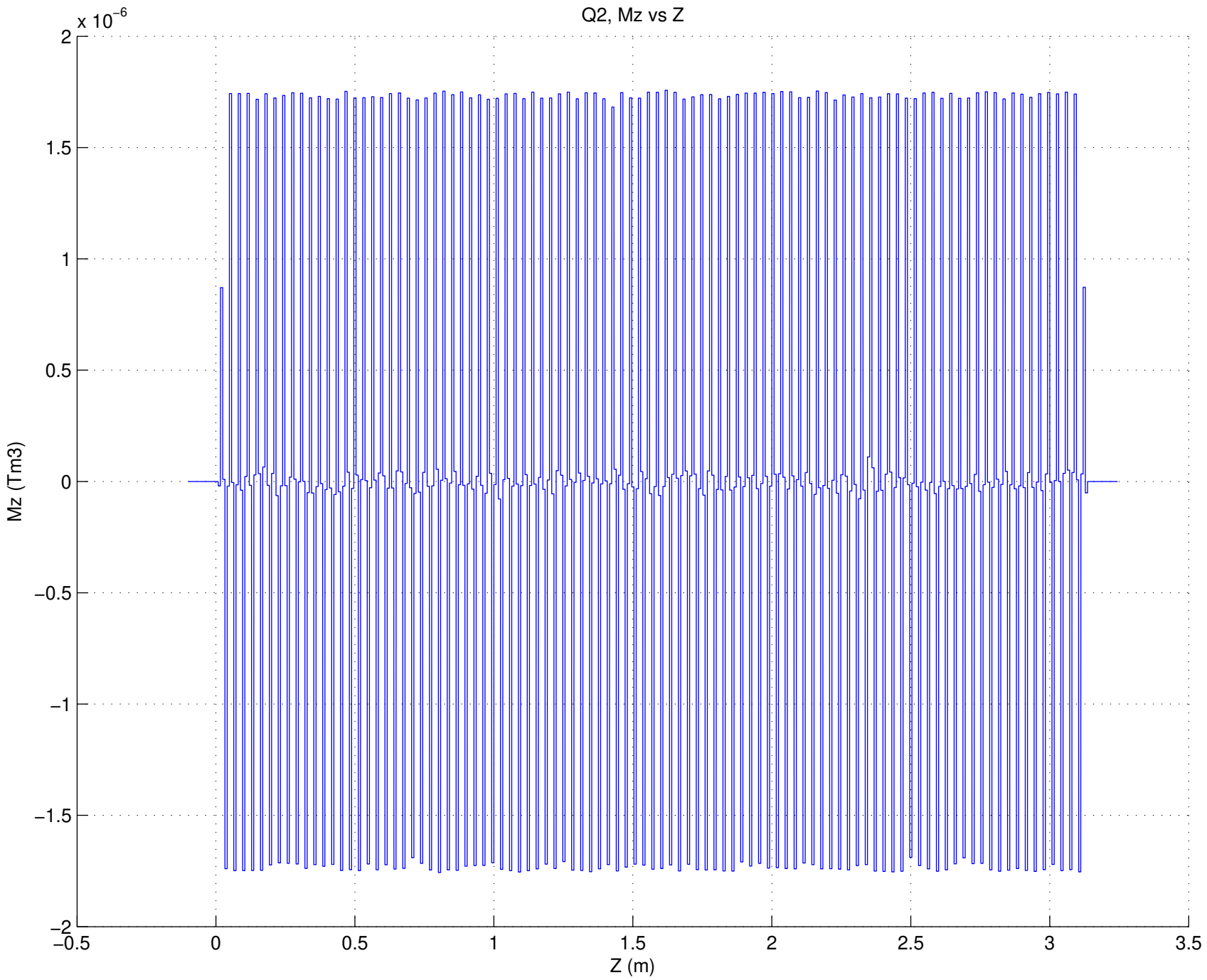

Q2, Int Mx dz vs Z
x 10^-10
12
10
8
6
4
2
0
−2
−4
−6
−8
Int Mx dz (Tm4)
−0.5
0
0.5
1
1.5
2
2.5
3
3.5
Z (m)

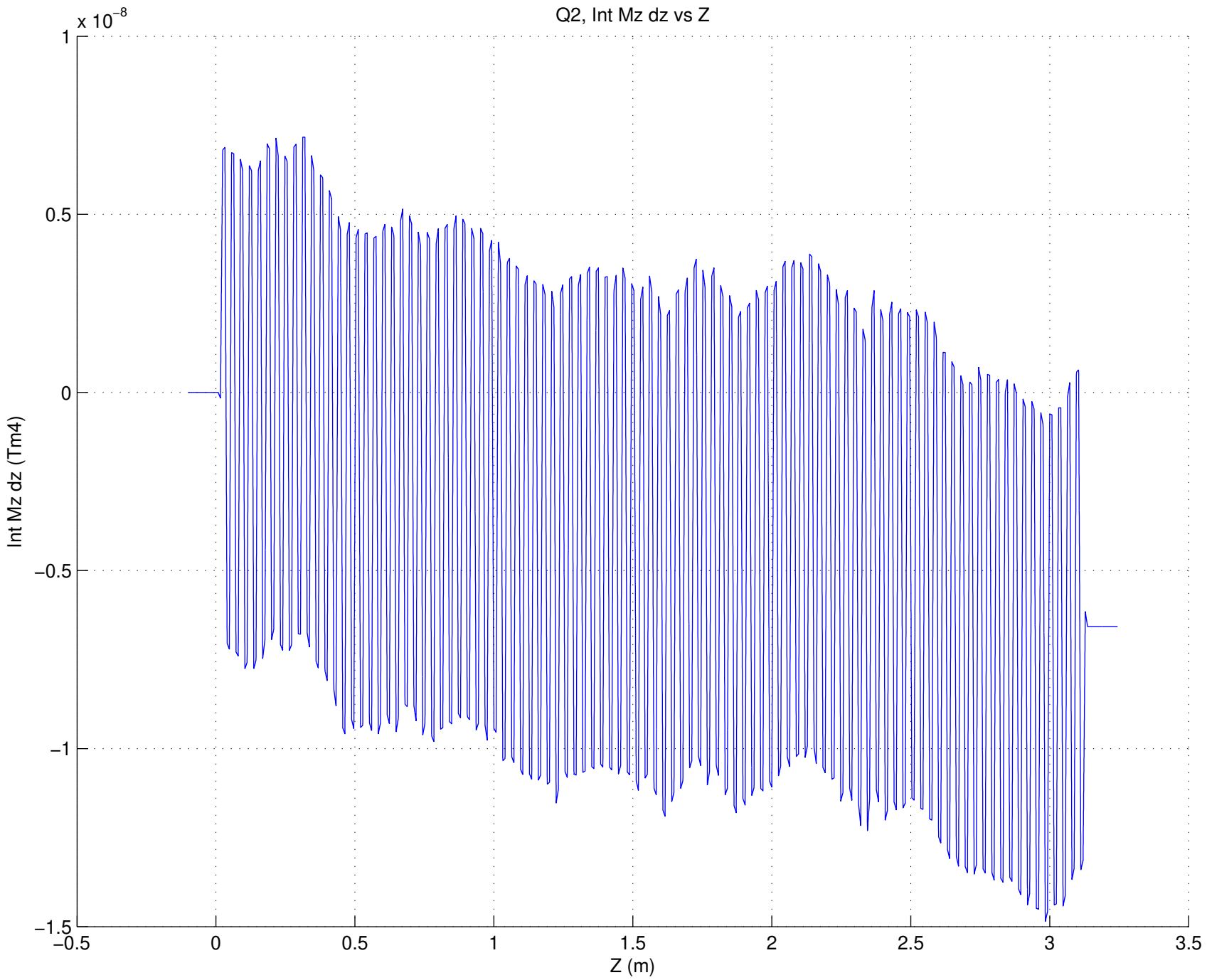

Q2, Int Int Mx dz dz vs Z
x 10^-10
4
3
2
1
0
−1
−2
−3
−4
−0.5
0
0.5
1
1.5
2
2.5
3
3.5
Int Int Mx dz dz (Tm5)
Z (m)

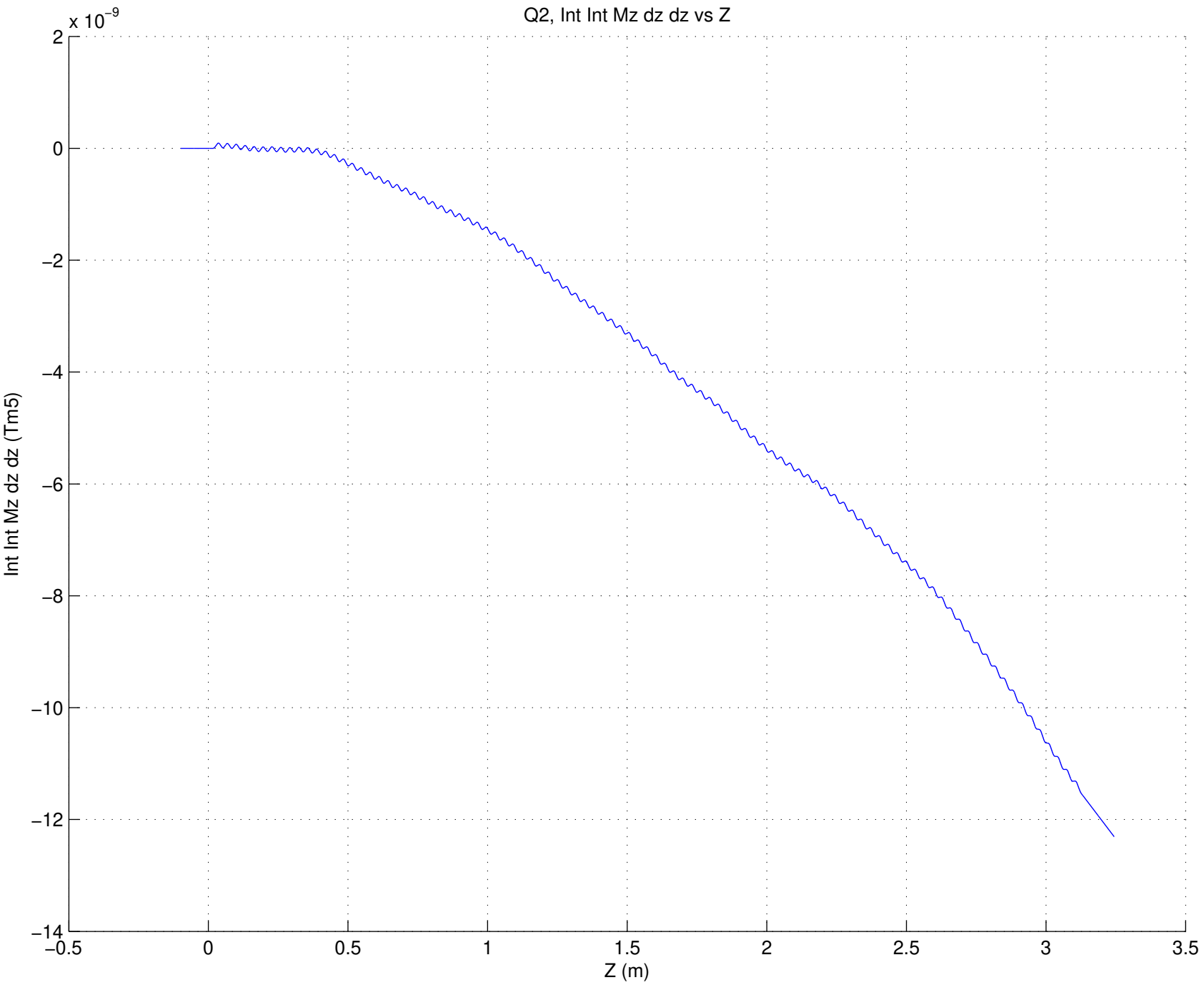

Q2, My vs Z
x 10^-6
2
1.5
1
0.5
0
−0.5
−1
−1.5
−2
My (Tm3)
−0.5
0
0.5
1
1.5
2
2.5
3
3.5
Z (m)

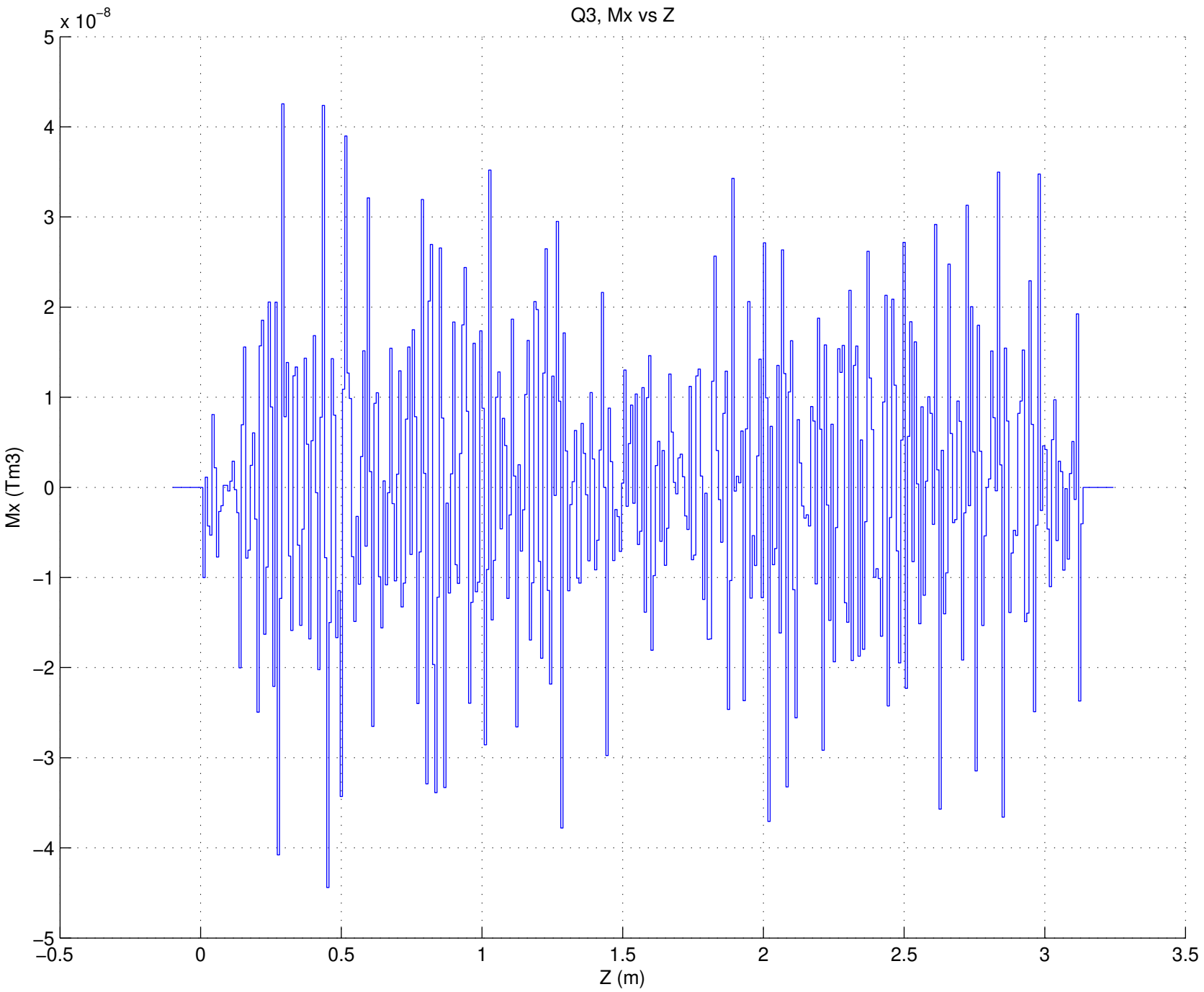

Q2, Int My dz vs Z
x 10^-8
1
0.5
0
−0.5
−1
−1.5
Int My dz (Tm4)
−0.5
0
0.5
1
1.5
2
2.5
3
3.5
Z (m)

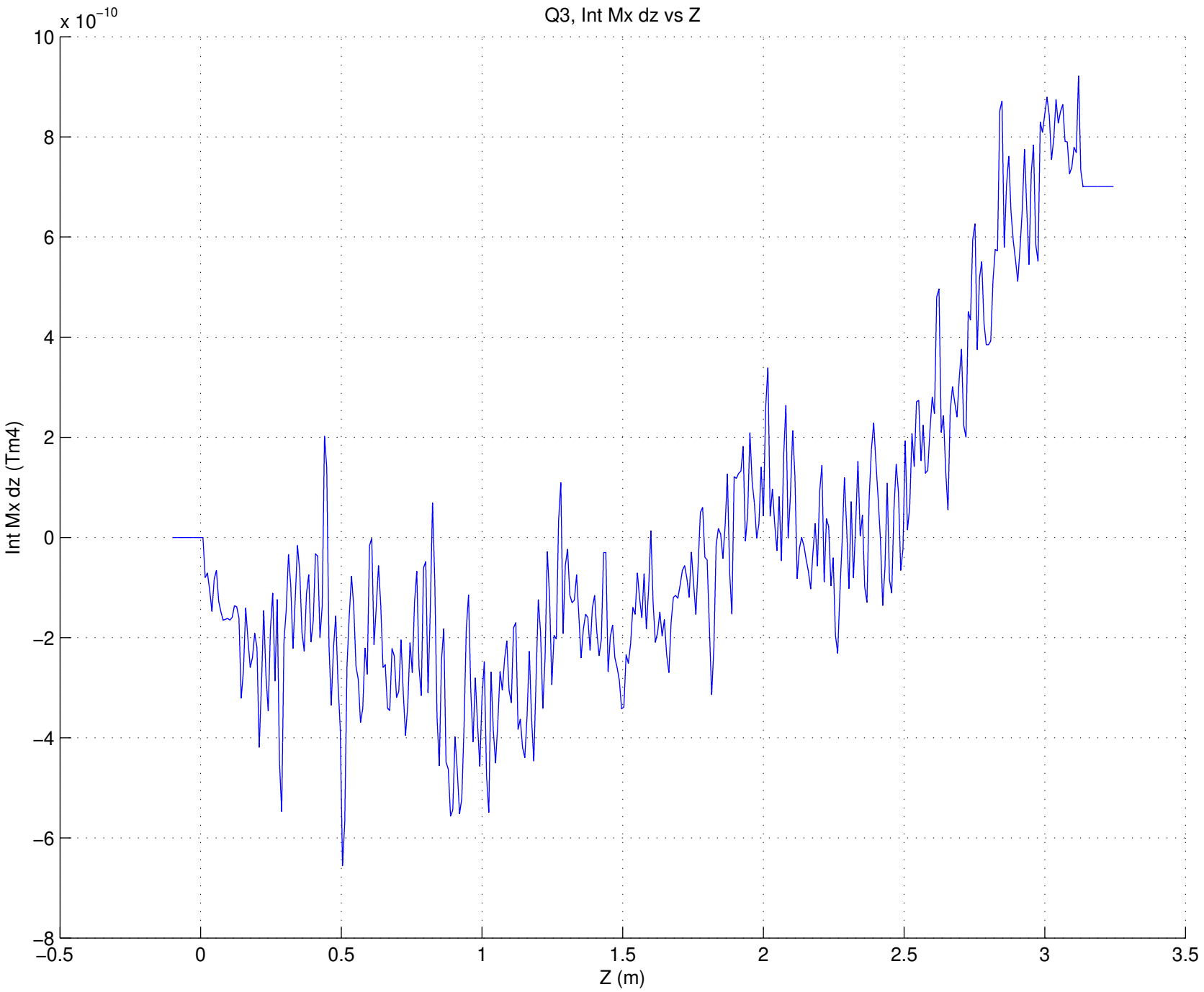

Q2, Int Int My dz dz vs Z
x 10^-9
2
0
−2
−4
−6
−8
−10
−12
Int Int My dz dz (Tm5)
−0.5
0
0.5
1
1.5
2
2.5
3
3.5
Z (m)

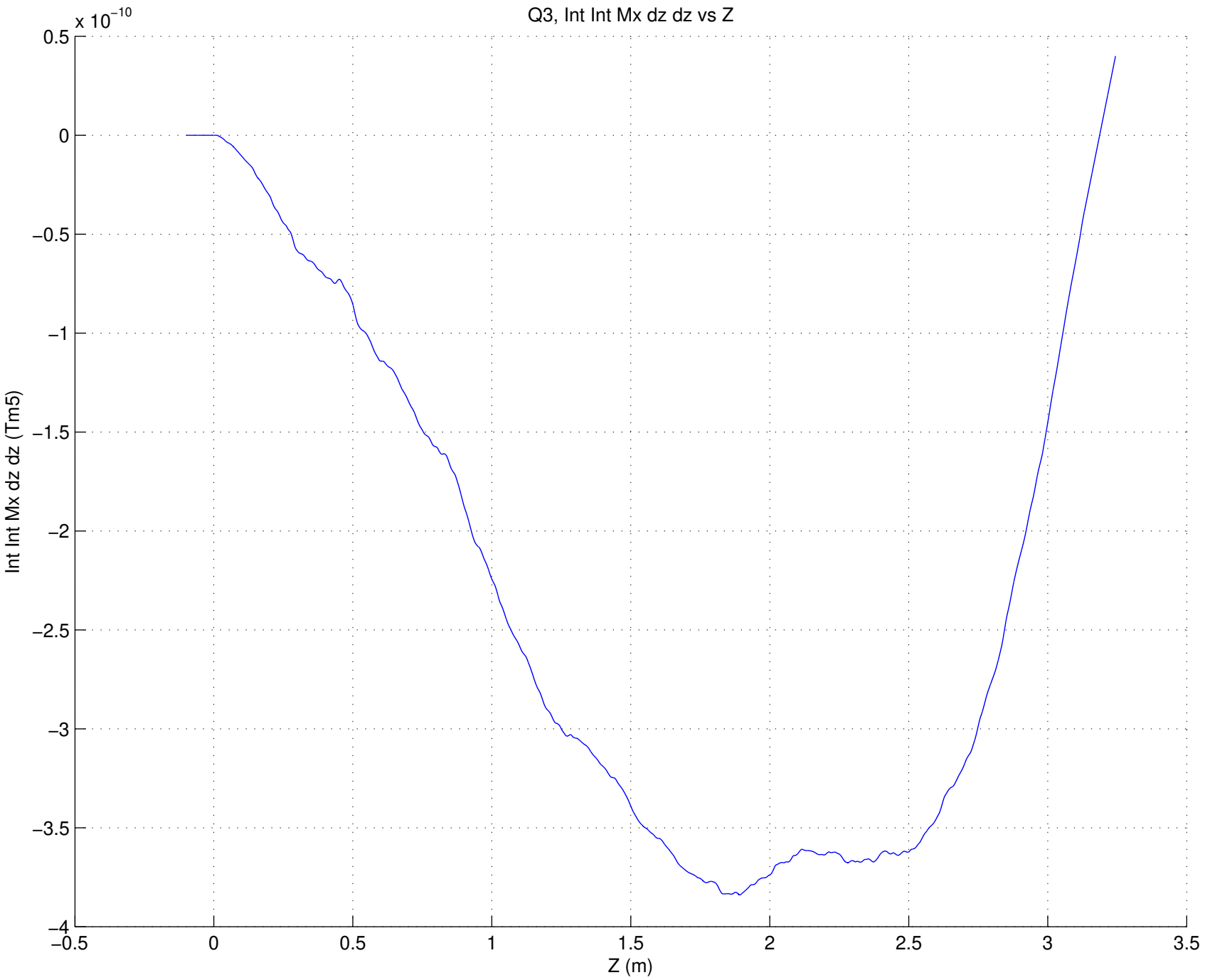

Q2, Mz vs Z
x 10^-6
2
1.5
1
0.5
0
−0.5
−1
−1.5
−2
Mz (Tm3)
−0.5
0
0.5
1
1.5
2
2.5
3
3.5
Z (m)

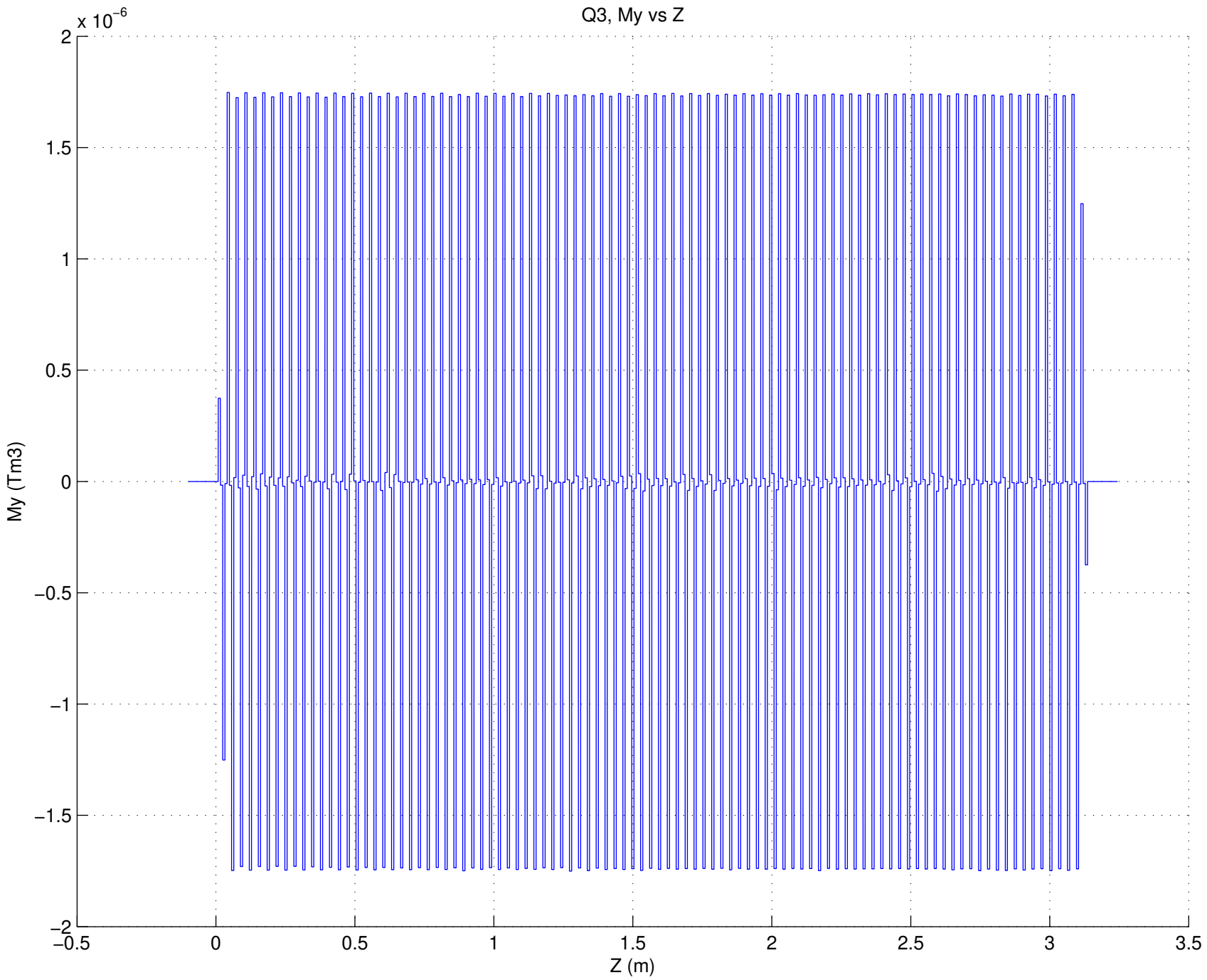

Q2, Int Mz dz vs Z
x 10^-8
1
0.5
0
−0.5
−1
−1.5
Int Mz dz (Tm4)
−0.5
0
0.5
1
1.5
2
2.5
3
3.5
Z (m)

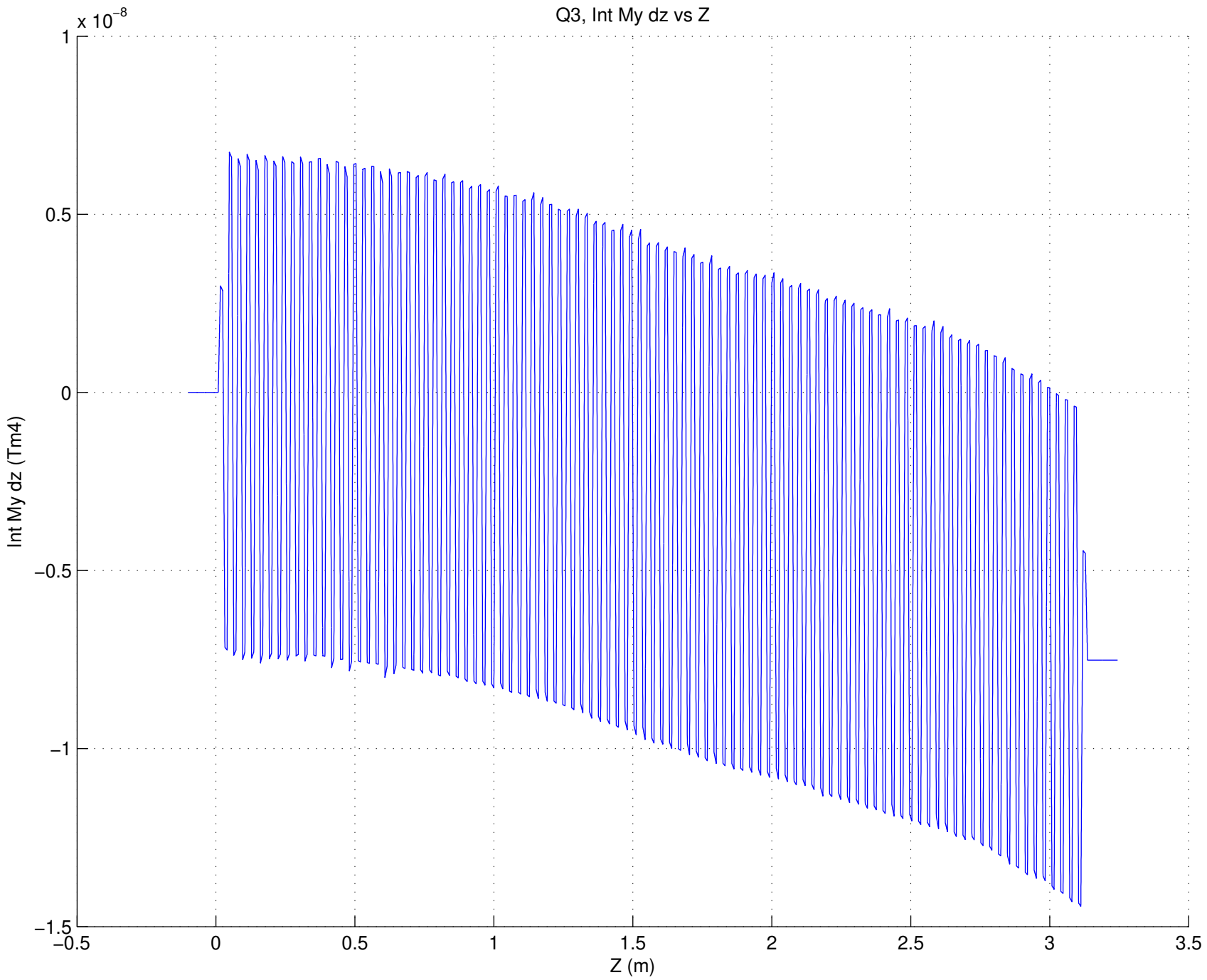

Q2, Int Int Mz dz dz vs Z
x 10^-9
2
0
−2
−4
−6
−8
−10
−12
−14
Int Int Mz dz dz (Tm5)
−0.5
0
0.5
1
1.5
2
2.5
3
3.5
Z (m)

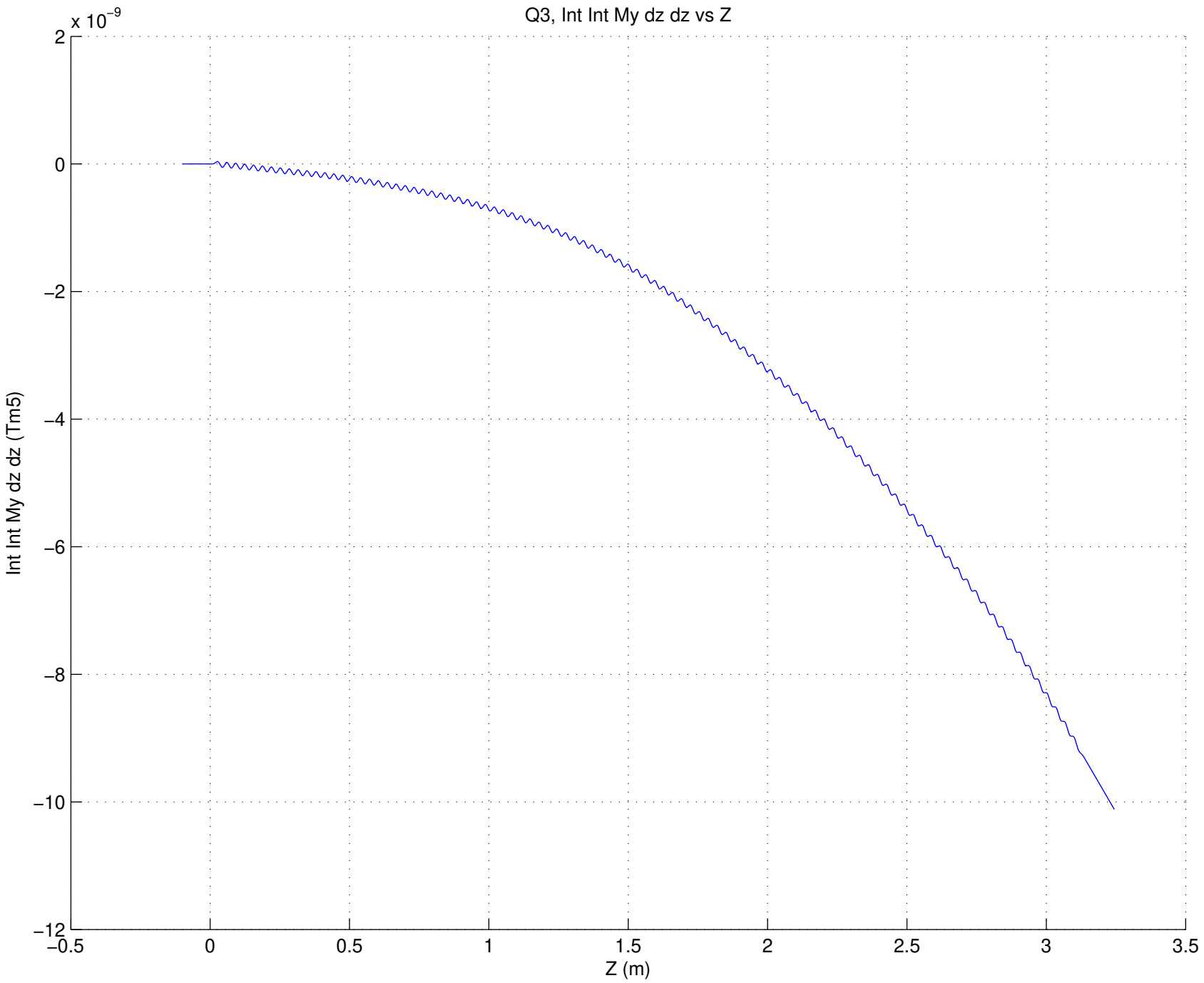

Q3, Mx vs Z
x 10^-8
5
4
3
2
1
0
−1
−2
−3
−4
−5
Mx (Tm3)
−0.5
0
0.5
1
1.5
2
2.5
3
3.5
Z (m)

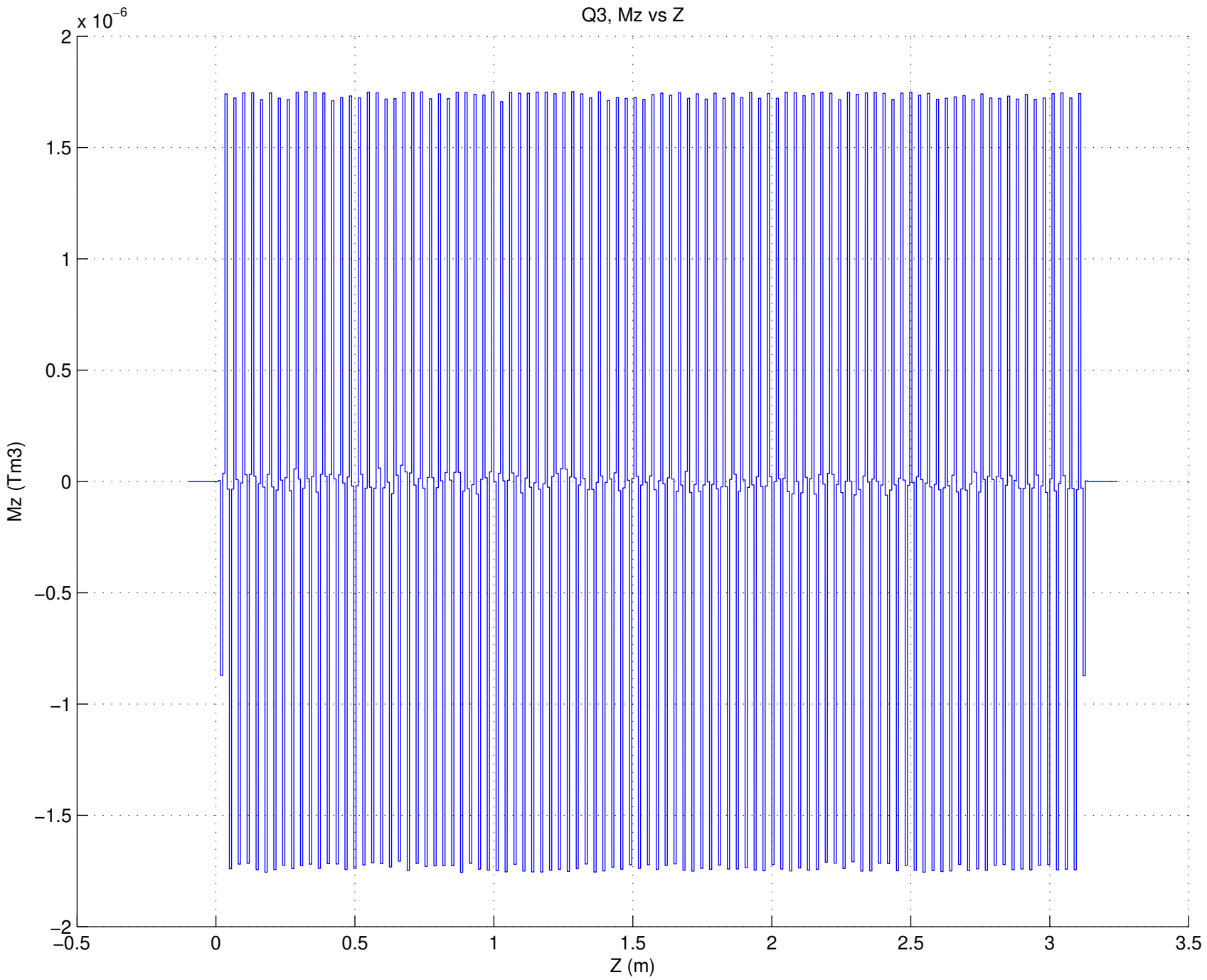

Q3, Int Mx dz vs Z
x 10^-10
Int Mx dz (Tm4)
Z (m)
10
8
6
4
2
0
−2
−4
−6
−8
−0.5
0
0.5
1
1.5
2
2.5
3
3.5

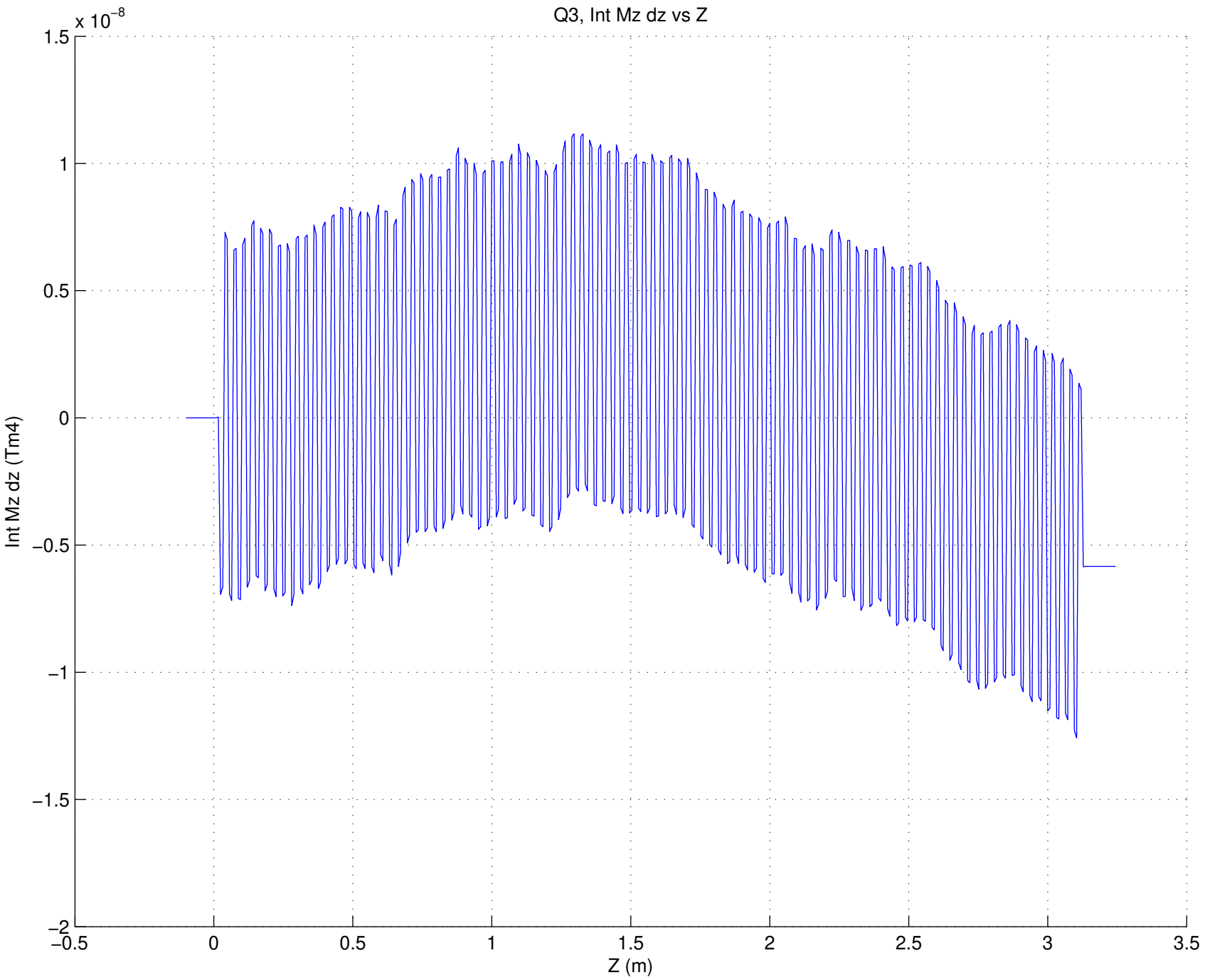

Q3, Int Int Mx dz dz vs Z
x 10^−10
0.5
0
−0.5
−1
−1.5
−2
−2.5
−3
−3.5
−4
Int Int Mx dz dz (Tm5)
−0.5
0
0.5
1
1.5
2
2.5
3
3.5
Z (m)

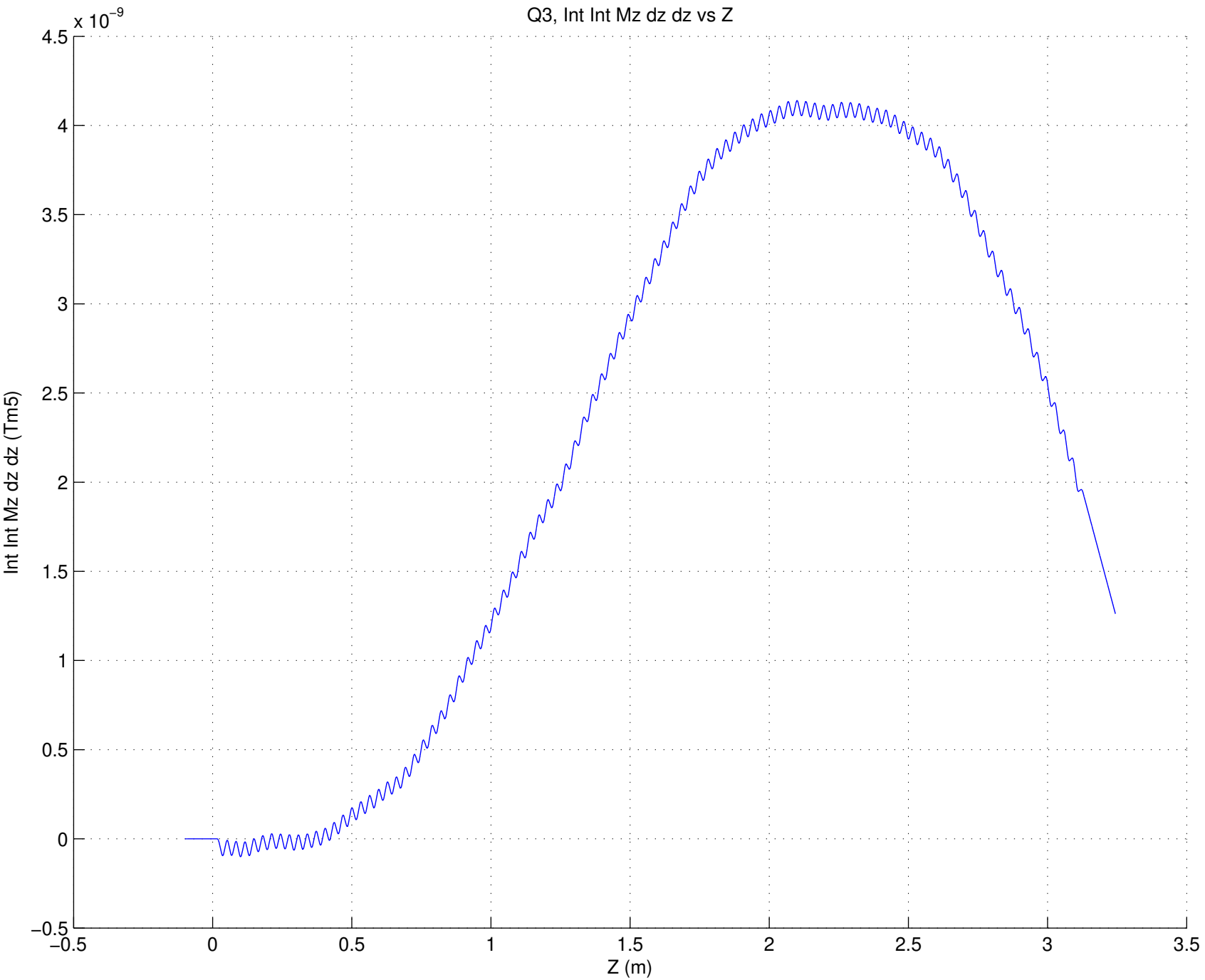

Q3, My vs Z
x 10^-6
2
1.5
1
0.5
0
−0.5
−1
−1.5
−2
My (Tm3)
−0.5
0
0.5
1
1.5
2
2.5
3
3.5
Z (m)

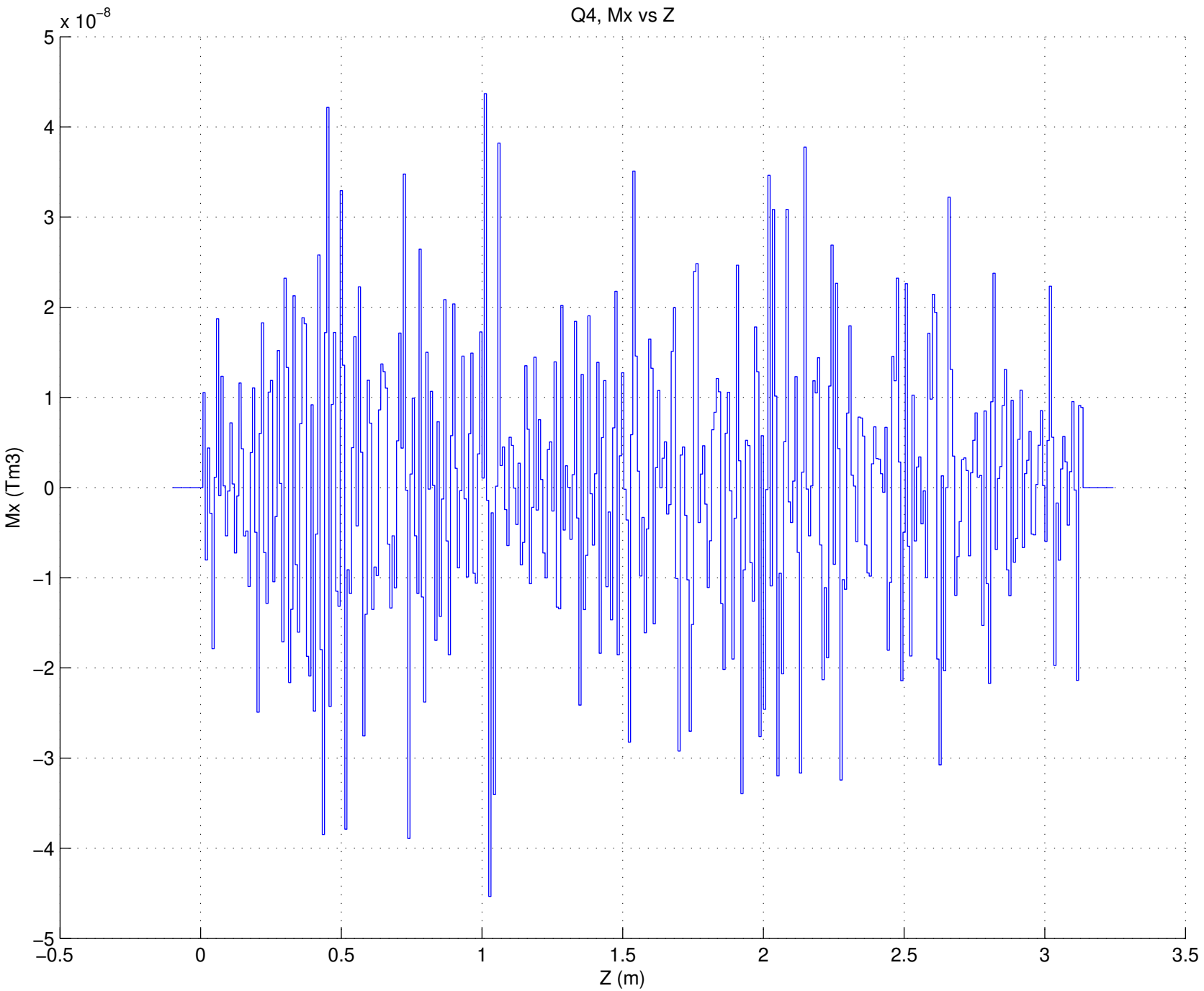

Q3, Int My dz vs Z
x 10^-8
1
0.5
0
−0.5
−1
−1.5
Int My dz (Tm4)
−0.5
0
0.5
1
1.5
2
2.5
3
3.5
Z (m)

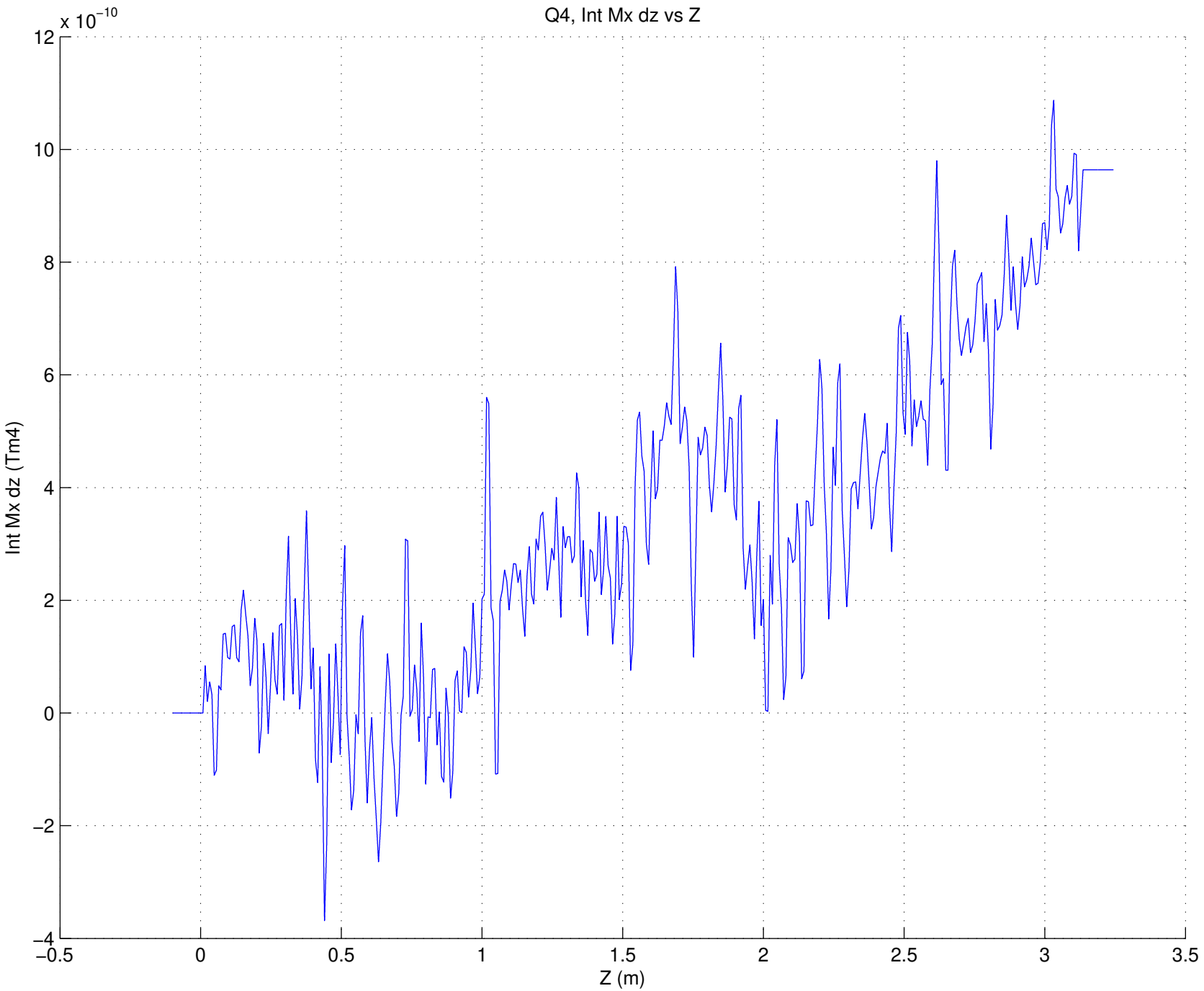

Q3, Int Int My dz dz vs Z
x 10^-9
2
0
−2
−4
−6
−8
−10
−12
Int Int My dz dz (Tm5)
−0.5
0
0.5
1
1.5
2
2.5
3
3.5
Z (m)

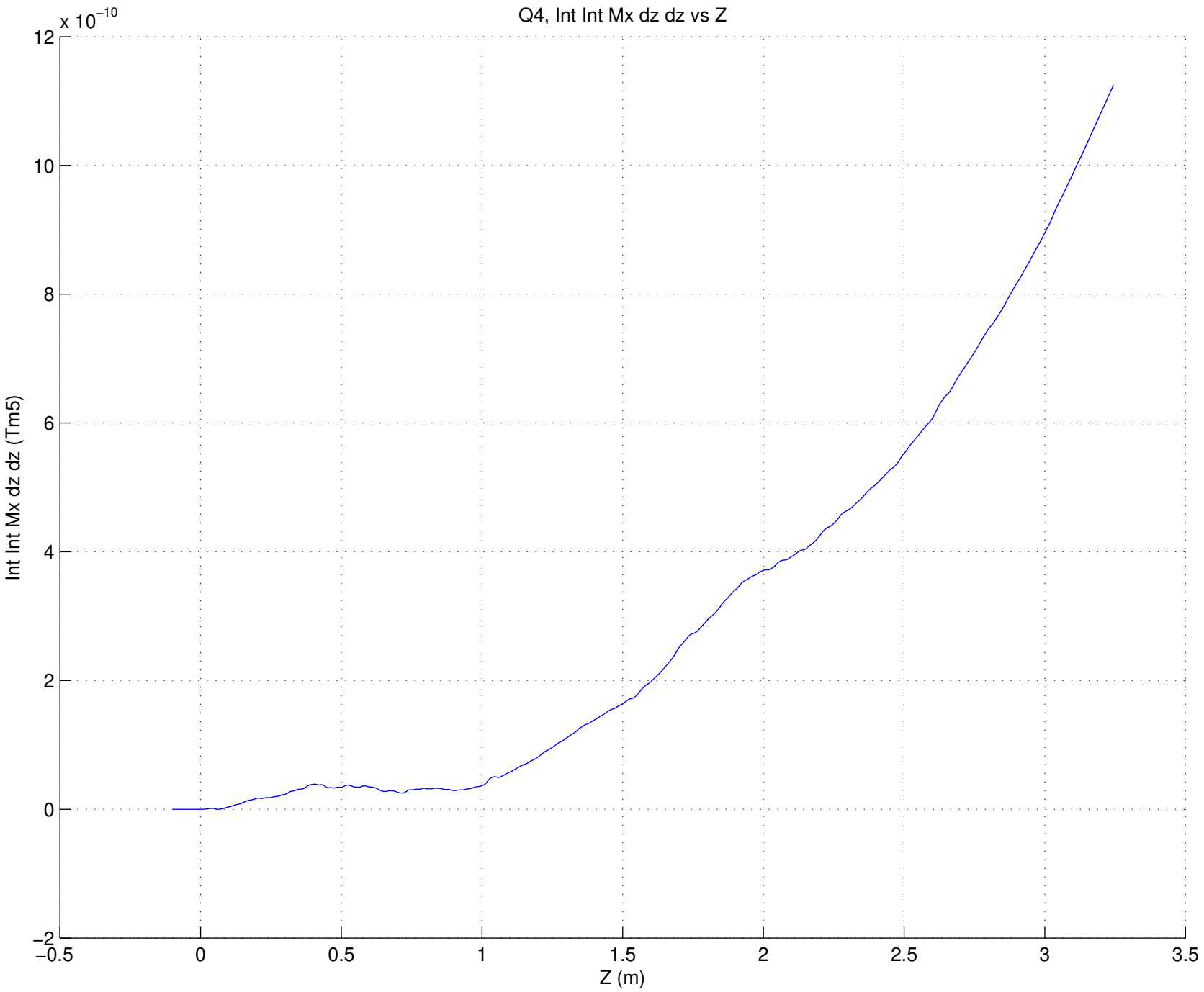

Q3, Mz vs Z
x 10^-6
2
1.5
1
0.5
0
−0.5
−1
−1.5
−2
Mz (Tm3)
−0.5
0
0.5
1
1.5
2
2.5
3
3.5
Z (m)

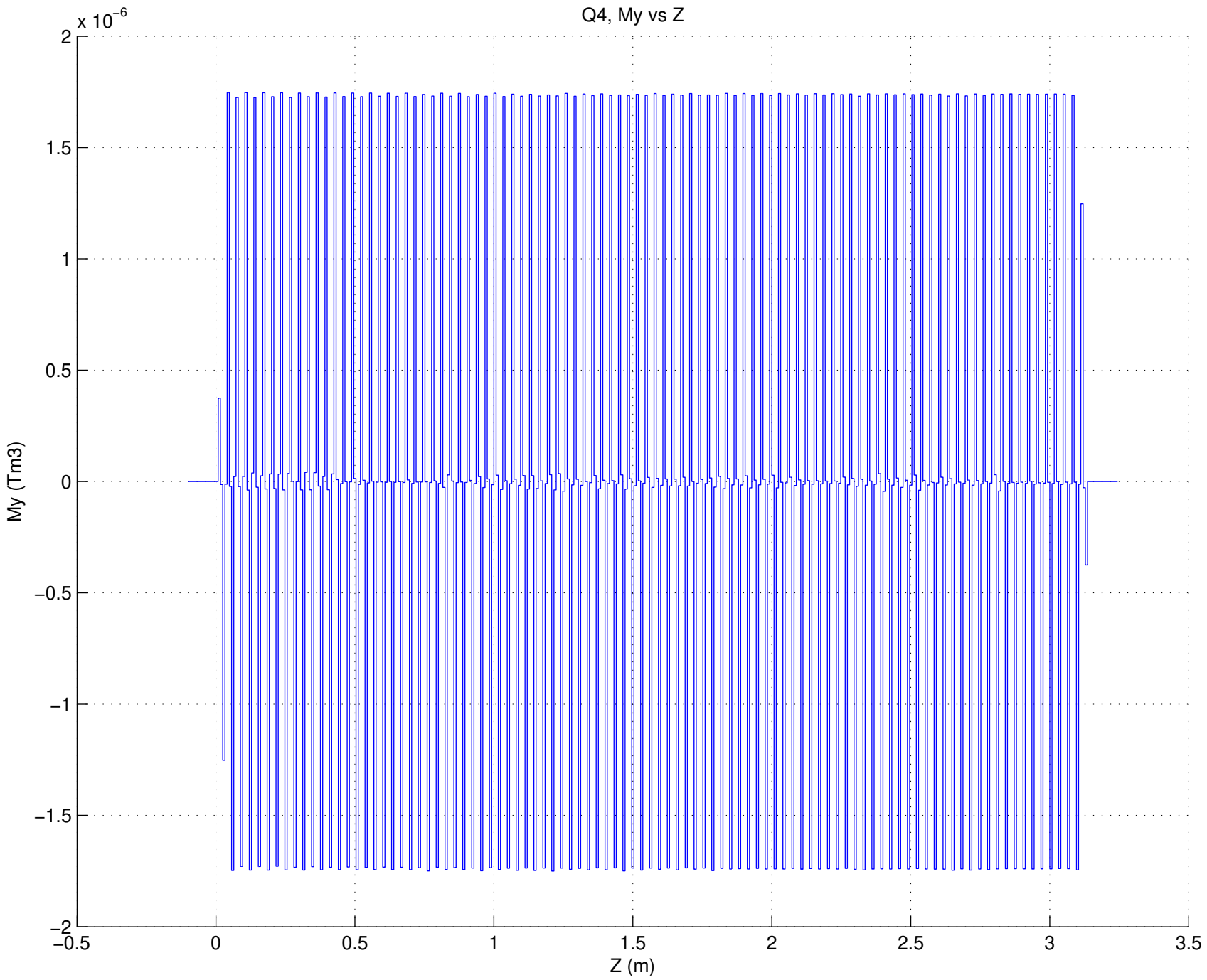

Q3, Int Mz dz vs Z
x 10^-8
1.5
1
0.5
0
−0.5
−1
−1.5
−2
Int Mz dz (Tm4)
−0.5
0
0.5
1
1.5
2
2.5
3
3.5
Z (m)

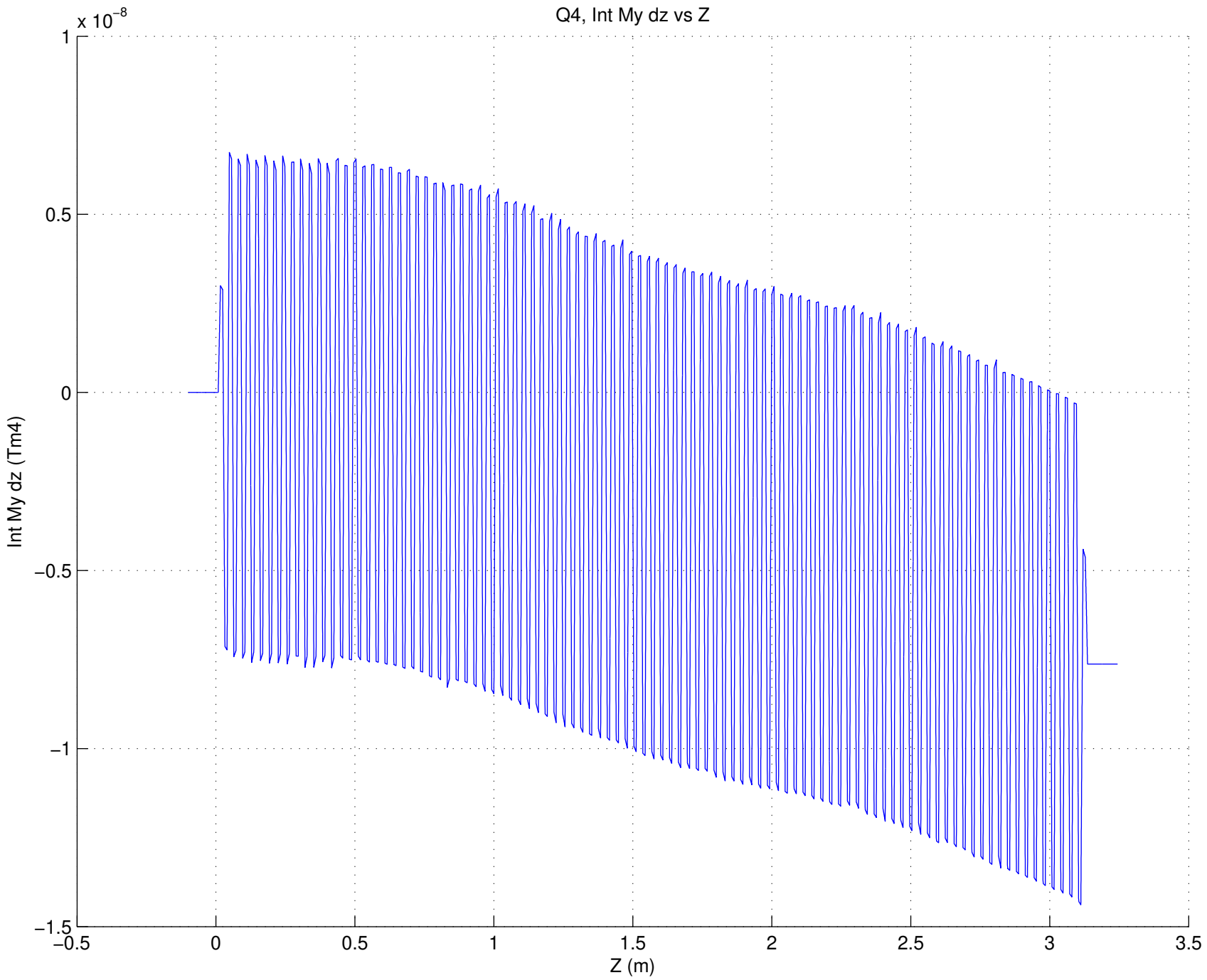

Q3, Int Int Mz dz dz vs Z
x 10^-9
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
−0.5
Int Int Mz dz dz (Tm5)
−0.5
0
0.5
1
1.5
2
2.5
3
3.5
Z (m)

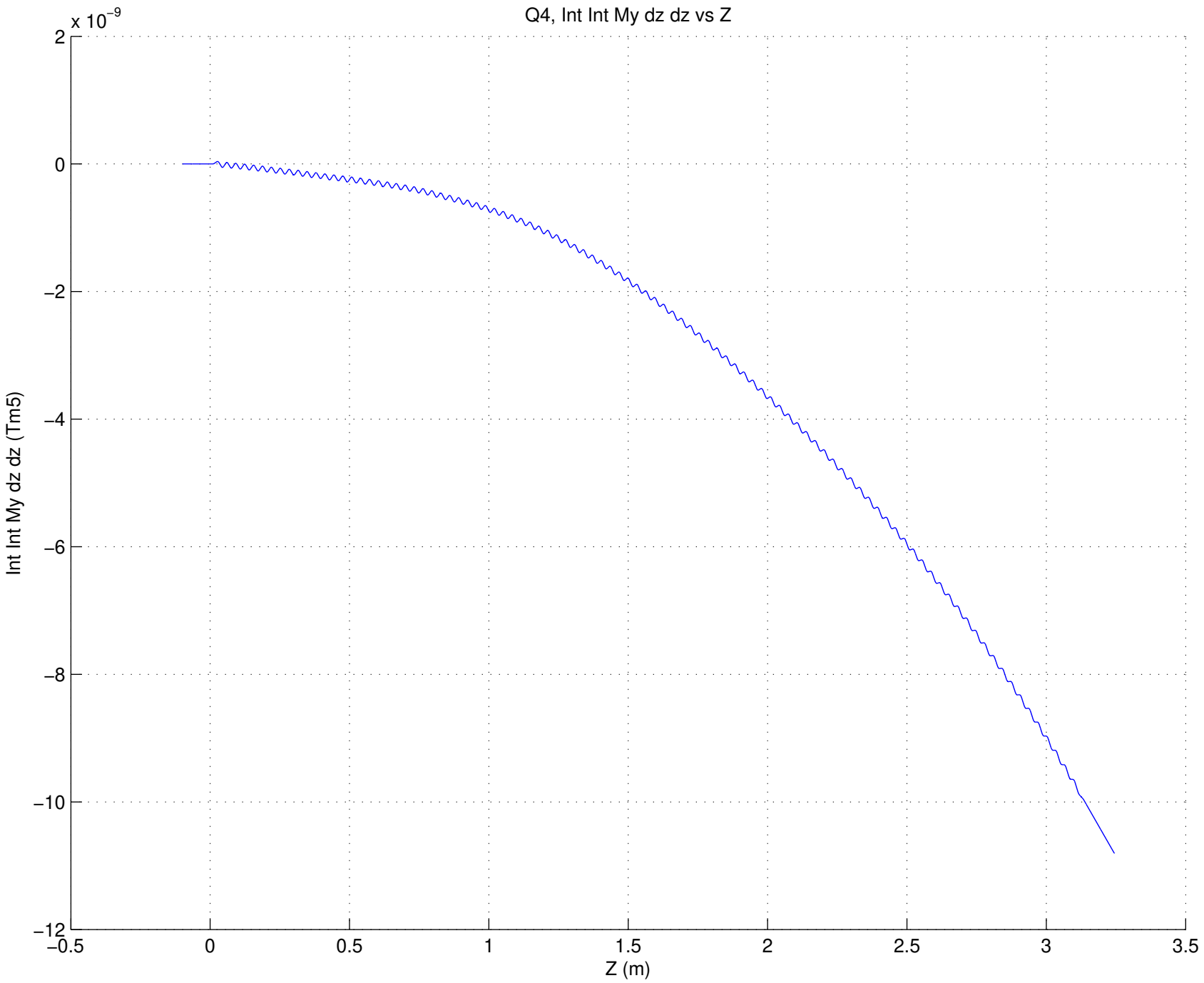

Q4, Mx vs Z
x 10^-8
Mx (Tm3)
Z (m)
5
4
3
2
1
0
−1
−2
−3
−4
−5
−0.5
0
0.5
1
1.5
2
2.5
3
3.5

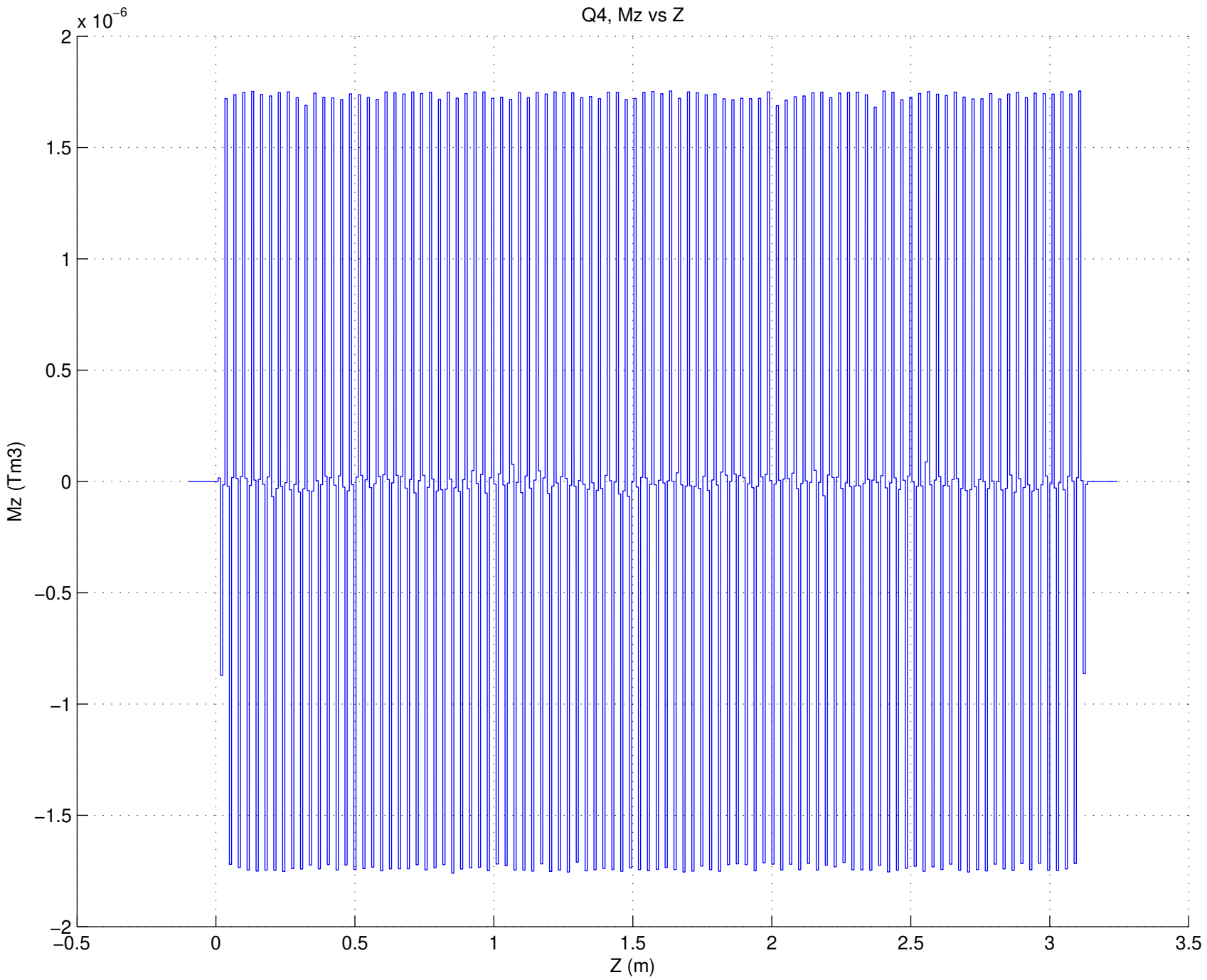

Q4, Int Mx dz vs Z
x 10^-10
12
10
8
6
4
2
0
−2
−4
Int Mx dz (Tm4)
−0.5
0
0.5
1
1.5
2
2.5
3
3.5
Z (m)

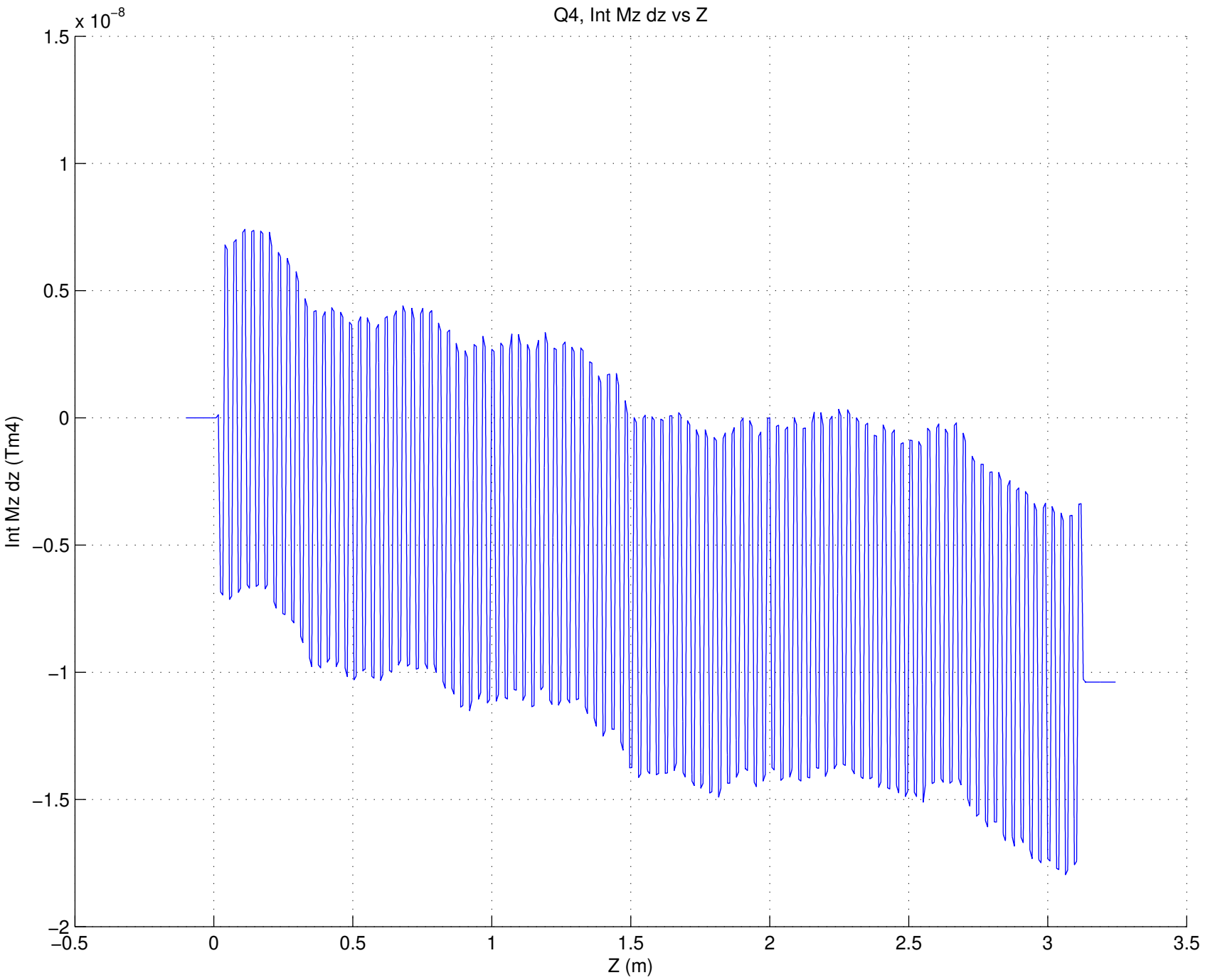

Q4, Int Int Mx dz dz vs Z
x 10^-10
12
10
8
6
4
2
0
−2
−0.5
0
0.5
1
1.5
2
2.5
3
3.5
Int Int Mx dz dz (Tm5)
Z (m)

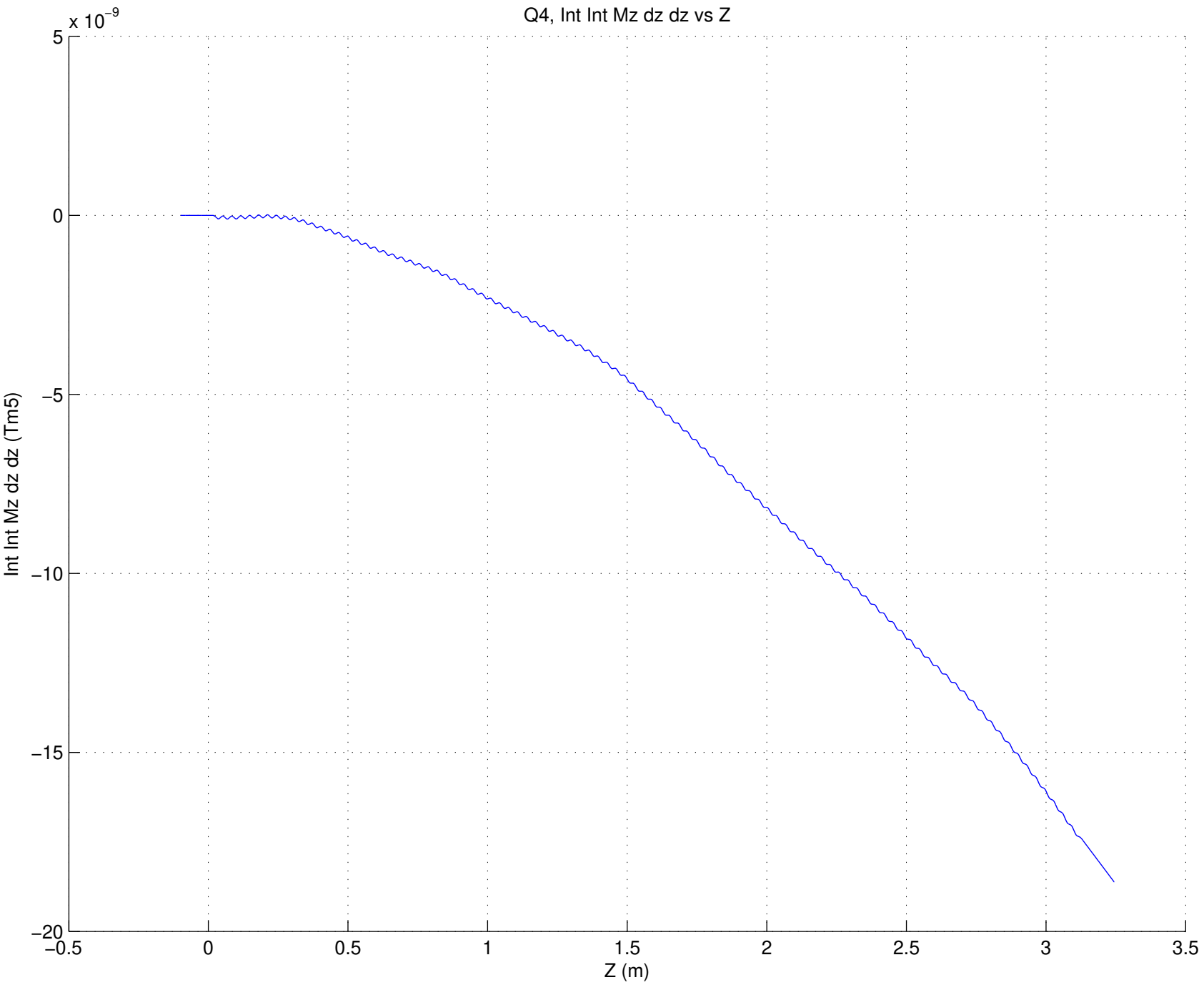

Q4, My vs Z
x 10^-6
2
1.5
1
0.5
0
−0.5
−1
−1.5
−2
My (Tm3)
−0.5
0
0.5
1
1.5
2
2.5
3
3.5
Z (m)

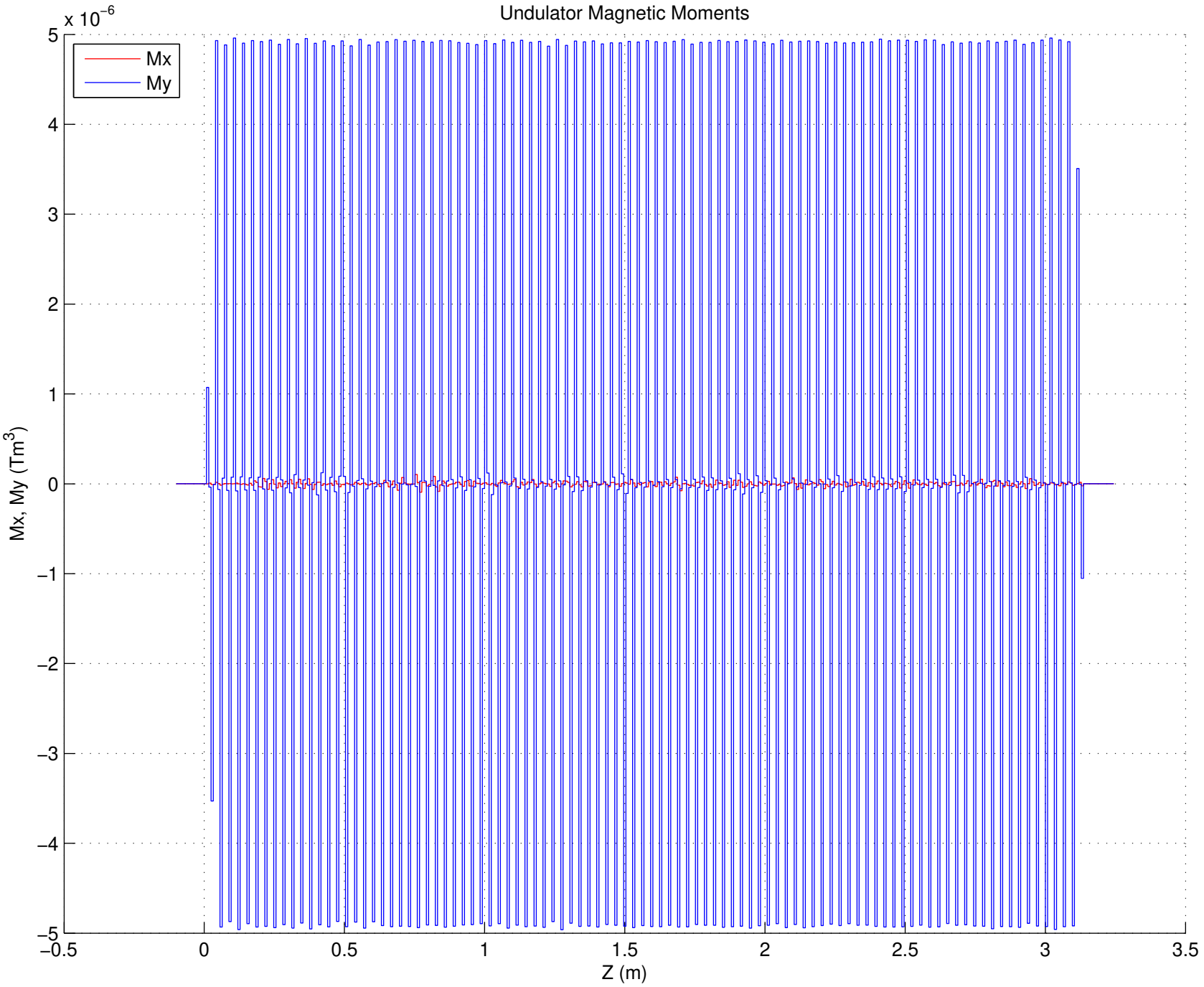

Q4, Int My dz vs Z
x 10^-8
1
0.5
0
−0.5
−1
−1.5
Int My dz (Tm4)
−0.5
0
0.5
1
1.5
2
2.5
3
3.5
Z (m)

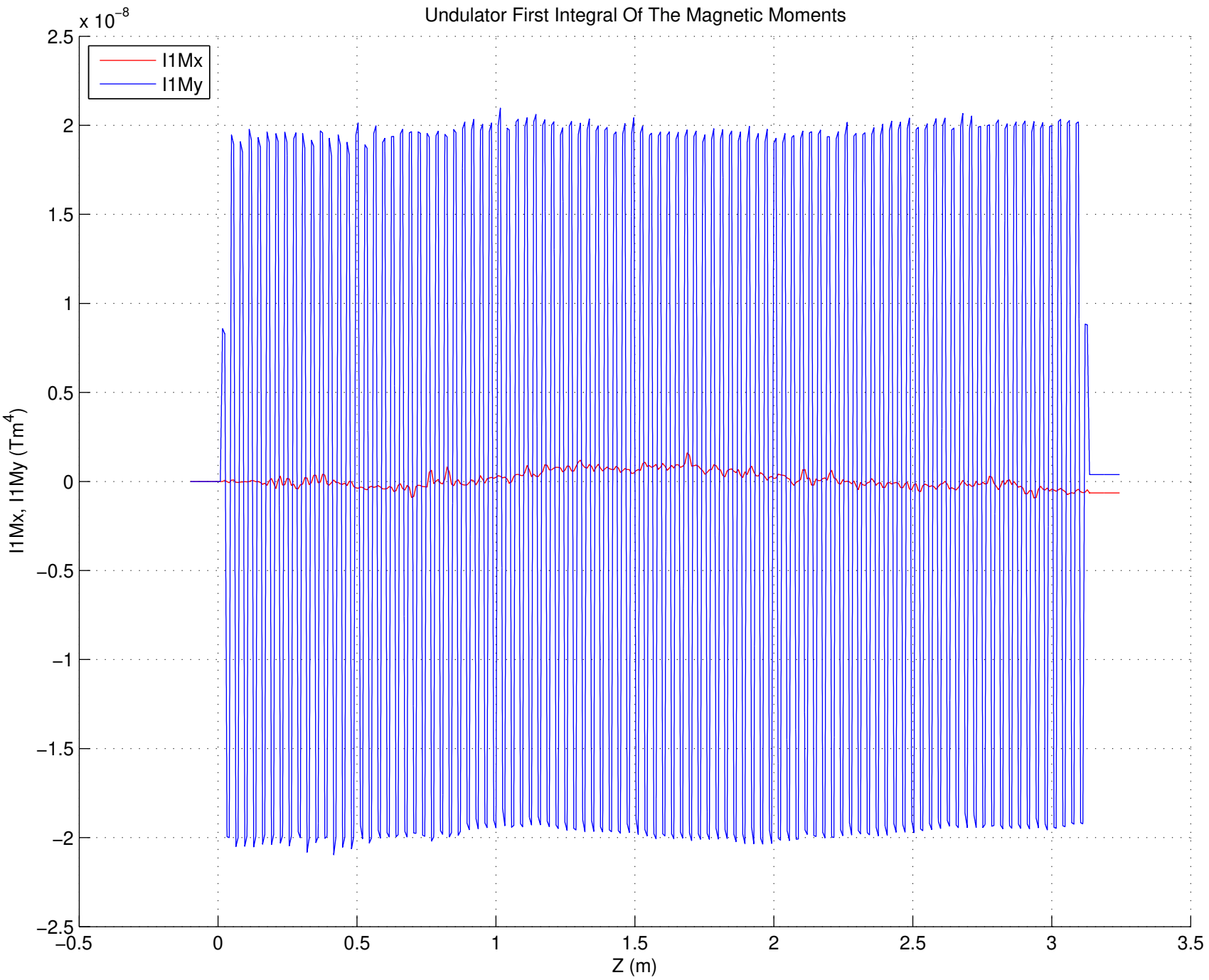

Q4, Int Int My dz dz vs Z
x 10^-9
2
0
−2
−4
−6
−8
−10
−12
Int Int My dz dz (Tm5)
−0.5
0
0.5
1
1.5
2
2.5
3
3.5
Z (m)

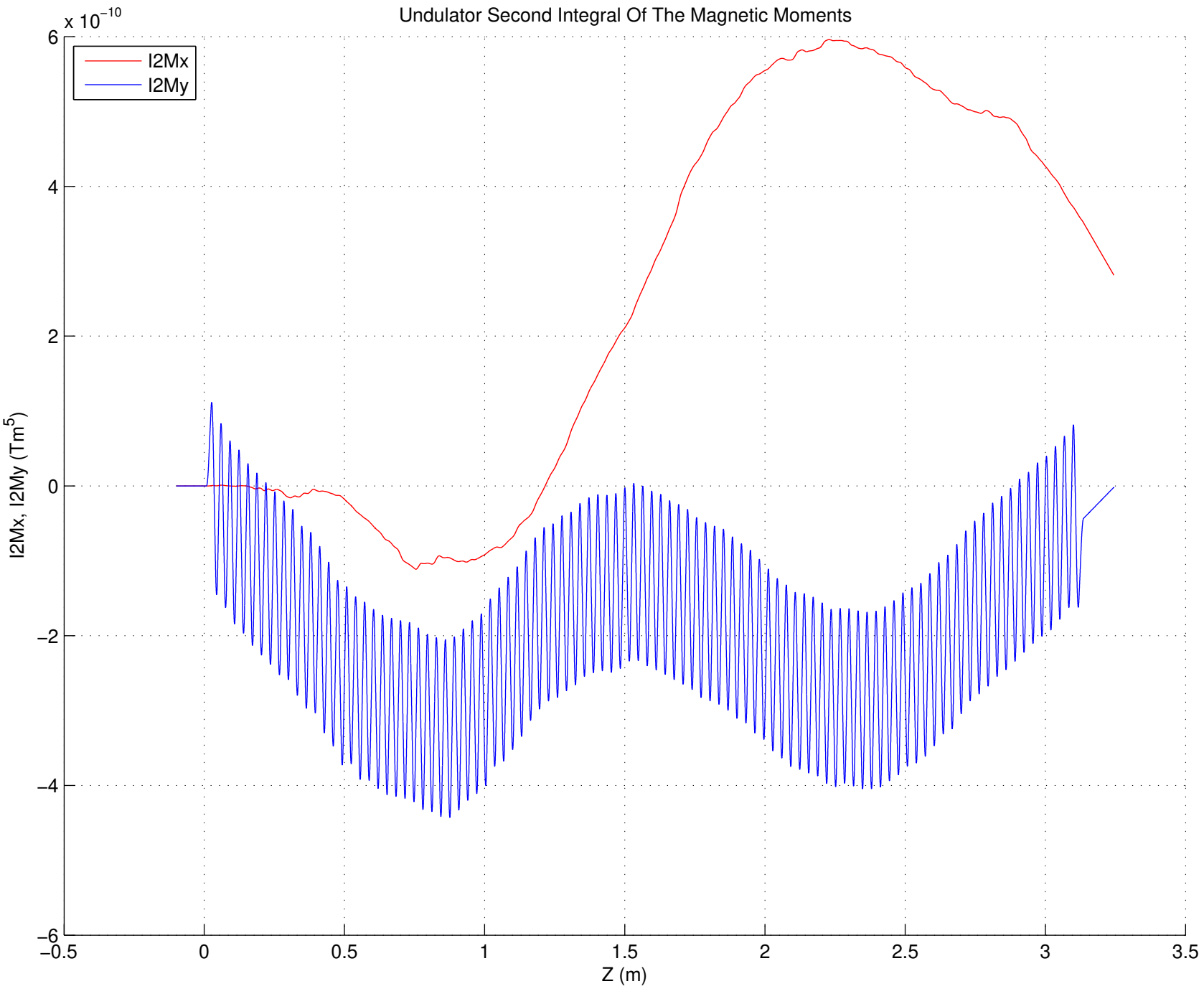

Q4, Mz vs Z
x 10^-6
2
1.5
1
0.5
0
−0.5
−1
−1.5
−2
Mz (Tm3)
−0.5
0
0.5
1
1.5
2
2.5
3
3.5
Z (m)


Q4, Int Mz dz vs Z
x 10^-8
1.5
1
0.5
0
−0.5
−1
−1.5
−2
Int Mz dz (Tm4)
−0.5
0
0.5
1
1.5
2
2.5
3
3.5
Z (m)


Q4, Int Int Mz dz dz vs Z
x 10^-9
5
0
−5
−10
−15
−20
Int Int Mz dz dz (Tm5)
−0.5
0
0.5
1
1.5
2
2.5
3
3.5
Z (m)


Undulator Magnetic Moments
x 10^-6
Mx
My
Mx, My (Tm^3)
Z (m)
5
4
3
2
1
0
−1
−2
−3
−4
−5
−0.5
0
0.5
1
1.5
2
2.5
3
3.5


Undulator First Integral Of The Magnetic Moments
x 10^-8
I1Mx
I1My
I1Mx, I1My (Tm^4)
Z (m)
2.5
2
1.5
1
0.5
0
−0.5
−1
−1.5
−2
−2.5
−0.5
0
0.5
1
1.5
2
2.5
3
3.5


Undulator Second Integral Of The Magnetic Moments
x 10^-10
I2Mx
I2My
I2Mx, I2My (Tm^5)
Z (m)
6
4
2
0
−2
−4
−6
−0.5
0
0.5
1
1.5
2
2.5
3
3.5