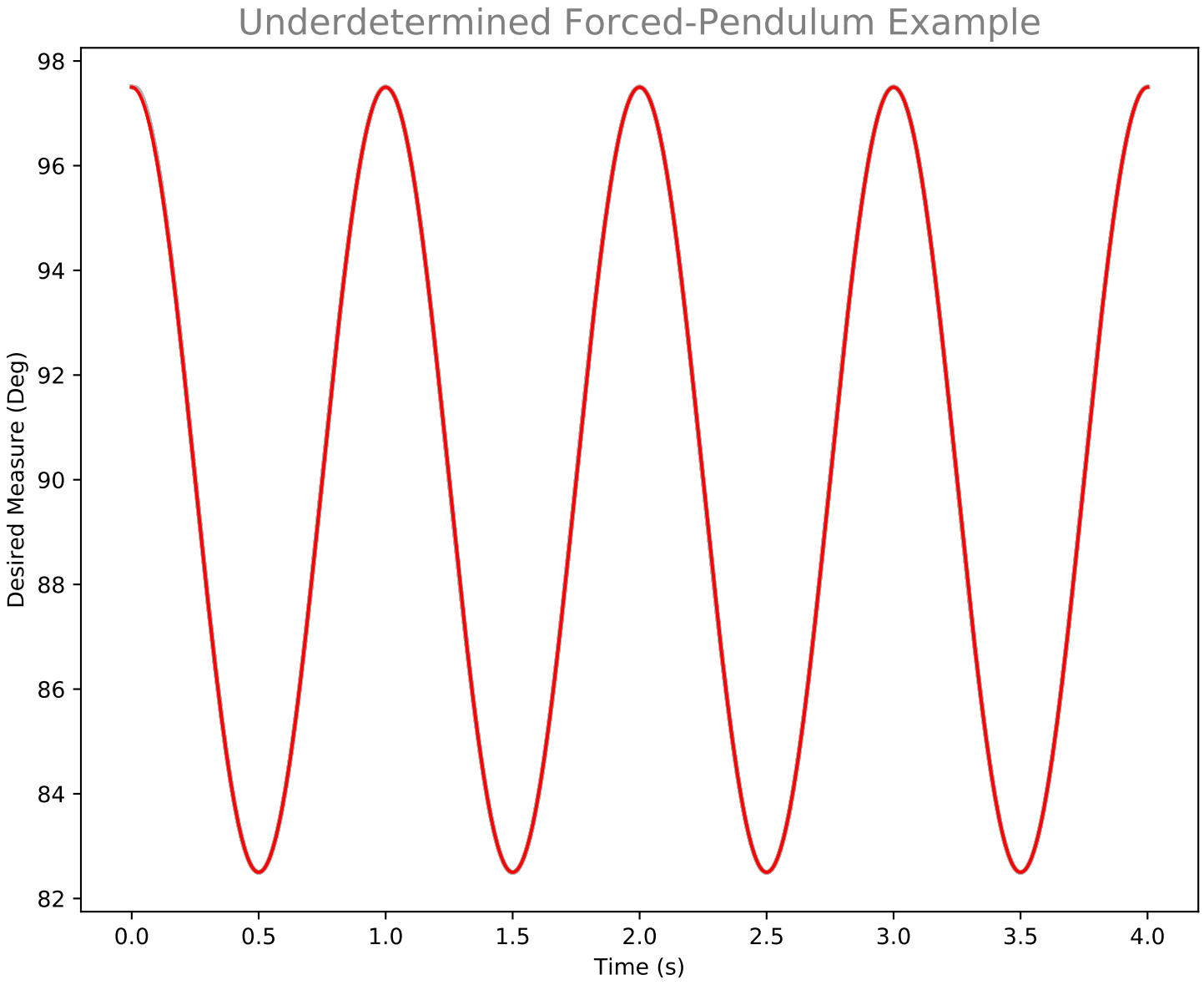
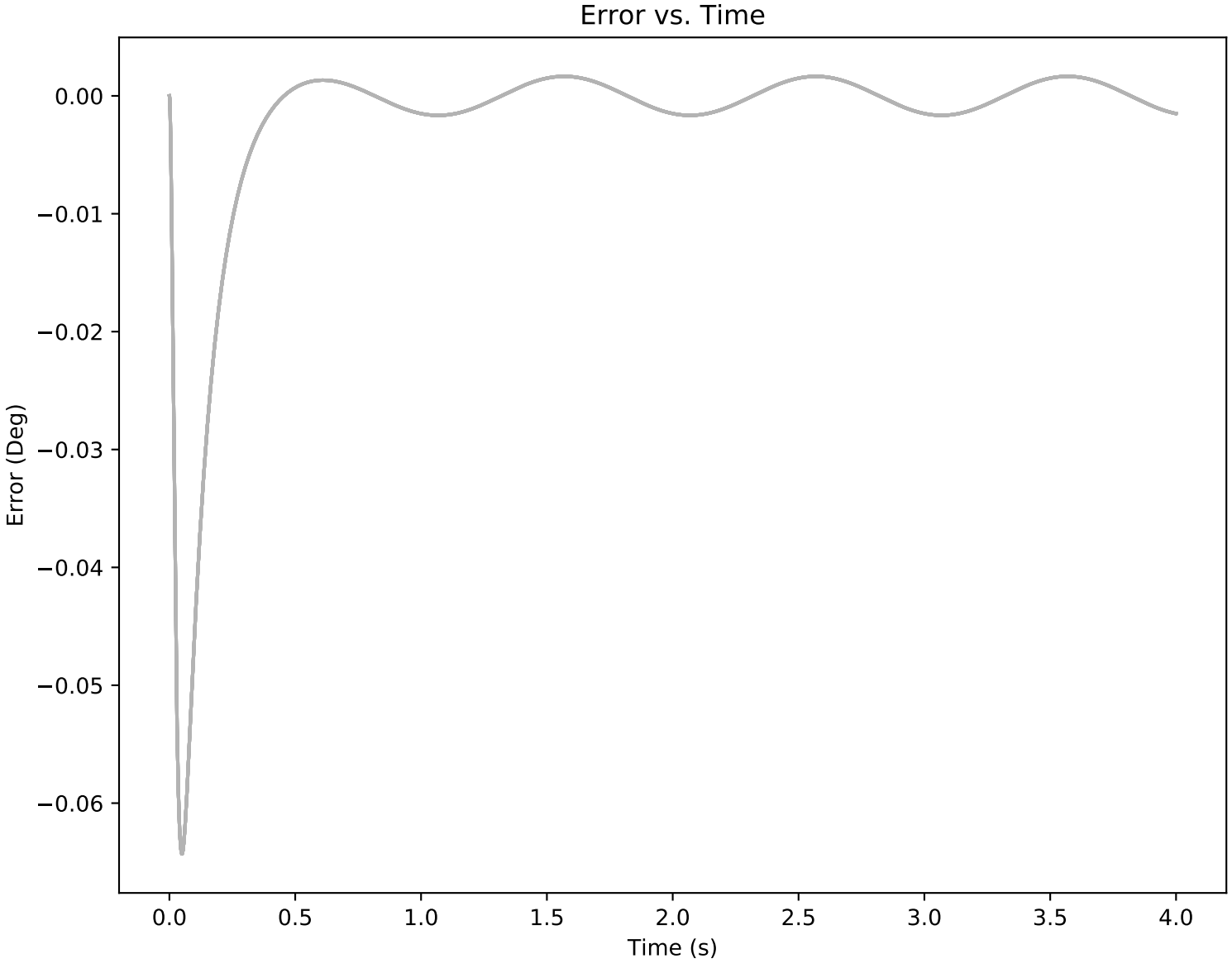
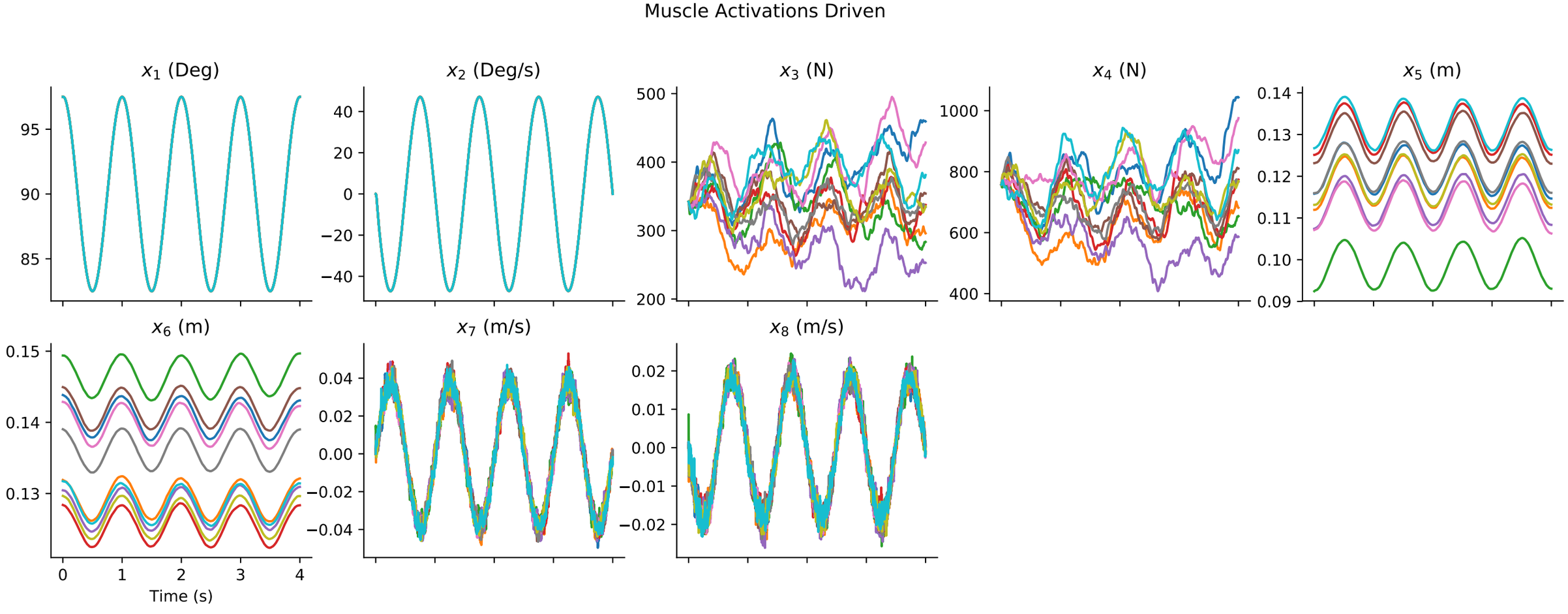
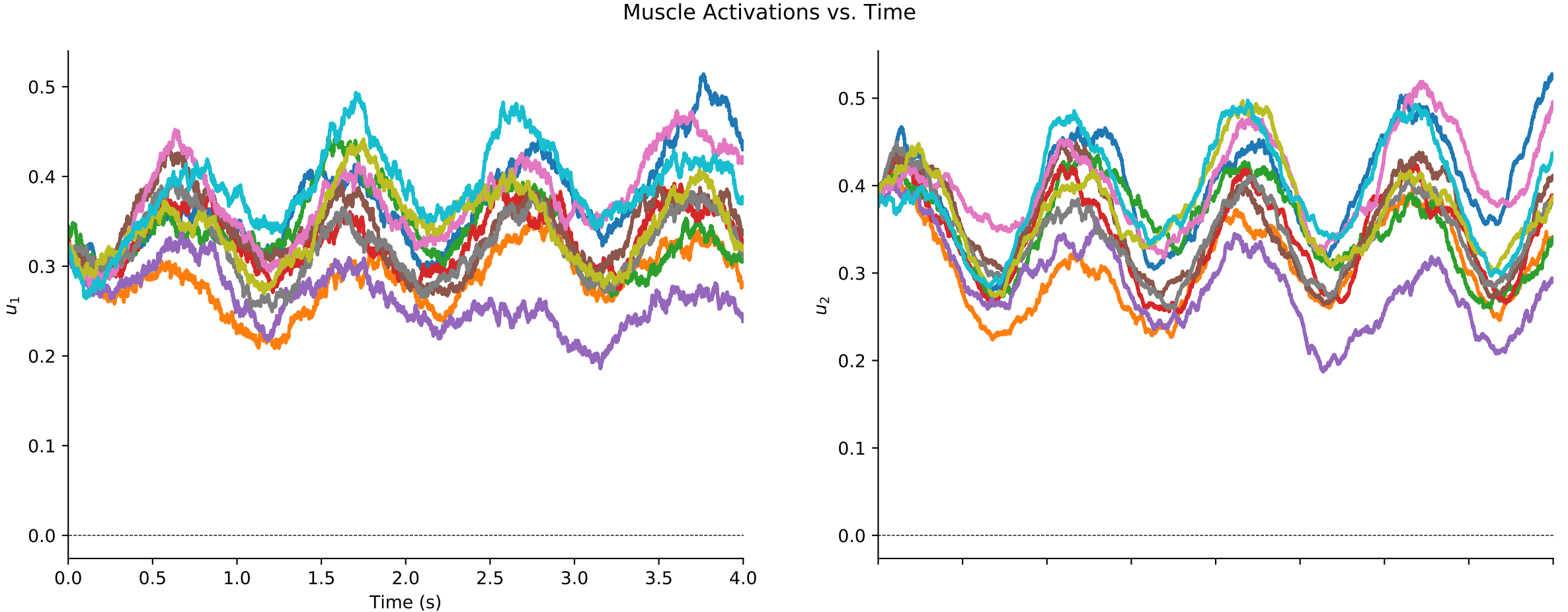
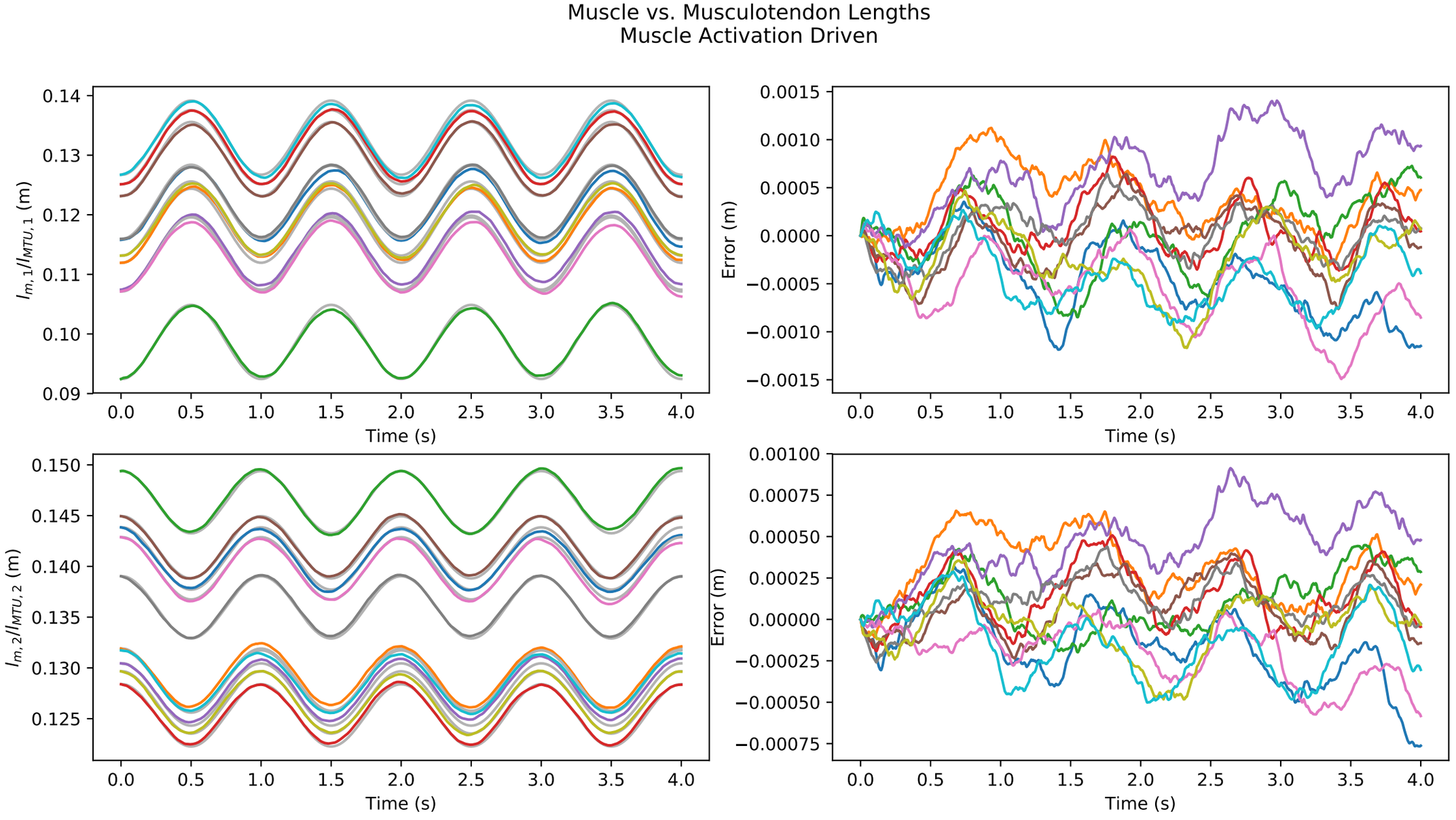
```
X_o = [[ 1.70169602e+00 -0.00000000e+00  3.42126039e+02  7.57722136e+02
   1.15809272e-01  1.43843893e-01  0.00000000e+00  0.00000000e+00]
 [ 1.70169602e+00 -0.00000000e+00  3.42126039e+02  7.57722136e+02
   1.11950201e-01  1.31904323e-01  0.00000000e+00  0.00000000e+00]
 [ 1.70169602e+00 -0.00000000e+00  3.42126039e+02  7.57722136e+02
   9.24440371e-02  1.49393166e-01  0.00000000e+00  0.00000000e+00]
 [ 1.70169602e+00 -0.00000000e+00  3.42126039e+02  7.57722136e+02
   1.25120837e-01  1.28392597e-01  0.00000000e+00  0.00000000e+00]
 [ 1.70169602e+00 -0.00000000e+00  3.42126039e+02  7.57722136e+02
   1.07424894e-01  1.30448019e-01  0.00000000e+00  0.00000000e+00]
 [ 1.70169602e+00 -0.00000000e+00  3.42126039e+02  7.57722136e+02
   1.23139267e-01  1.44949777e-01  0.00000000e+00  0.00000000e+00]
 [ 1.70169602e+00 -0.00000000e+00  3.42126039e+02  7.57722136e+02
   1.07136496e-01  1.42877665e-01  0.00000000e+00  0.00000000e+00]
 [ 1.70169602e+00 -0.00000000e+00  3.42126039e+02  7.57722136e+02
   1.15958531e-01  1.39032467e-01  0.00000000e+00  0.00000000e+00]
 [ 1.70169602e+00 -0.00000000e+00  3.42126039e+02  7.57722136e+02
   1.13151047e-01  1.29666838e-01  0.00000000e+00  0.00000000e+00]
 [ 1.70169602e+00 -0.00000000e+00  3.42126039e+02  7.57722136e+02
   1.26725959e-01  1.31729845e-01  0.00000000e+00  0.00000000e+00]]
U_o = [[0.32211103 0.37850045]
 [0.32290217 0.3779885 ]
 [0.34364931 0.37985676]
 [0.32257374 0.37891822]
 [0.32498918 0.37829586]
 [0.32225778 0.37876612]
 [0.32517106 0.3782865 ]
 [0.32209427 0.37768999]
 [0.32257088 0.37850526]
 [0.32284729 0.3780199 ]]
sigma = 0.000625, mu = 0
```

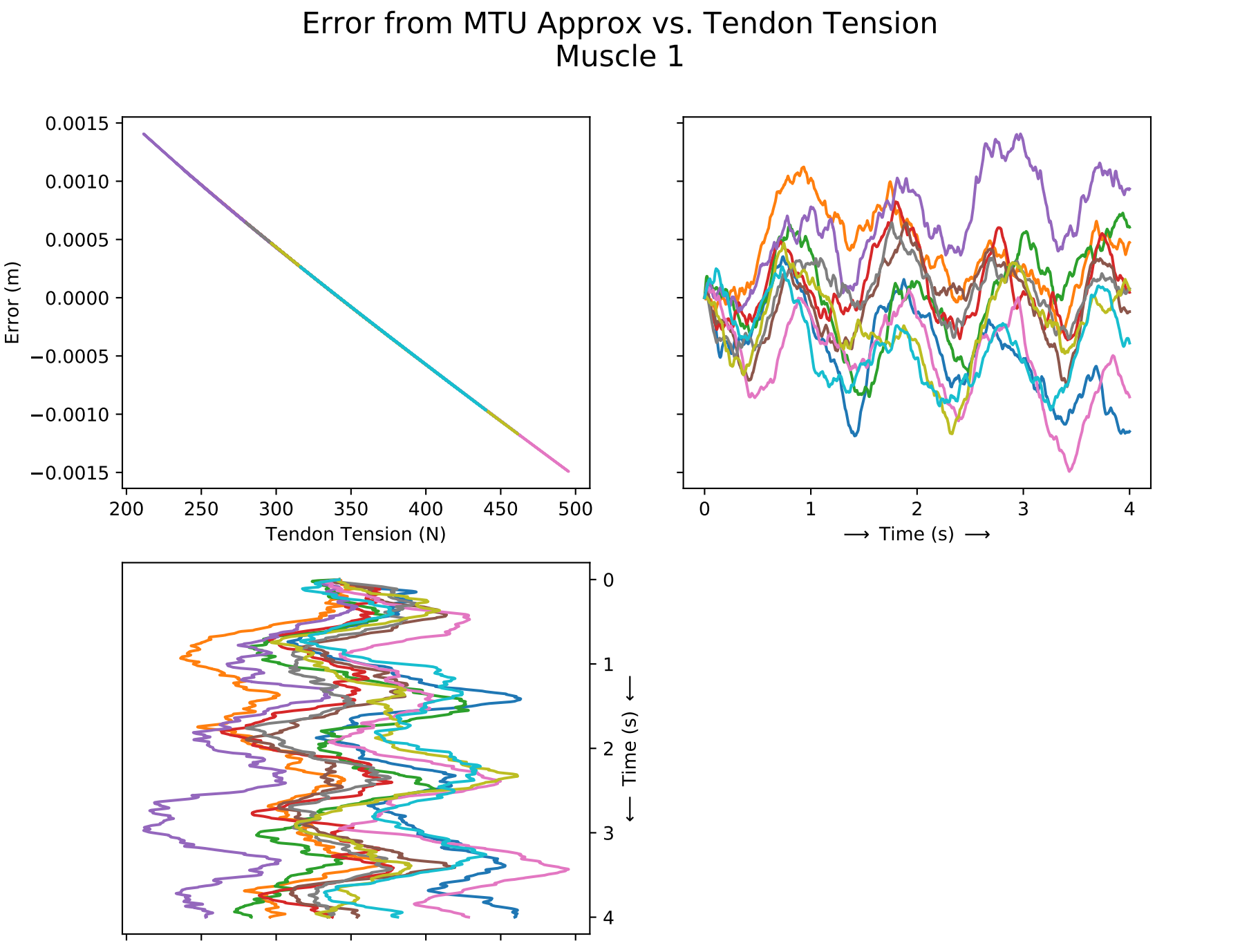

Underdetermined Forced-Pendulum Example
Desired Measure (Deg)
98
96
94
92
90
88
86
84
82
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3.5
4.0
Time (s)

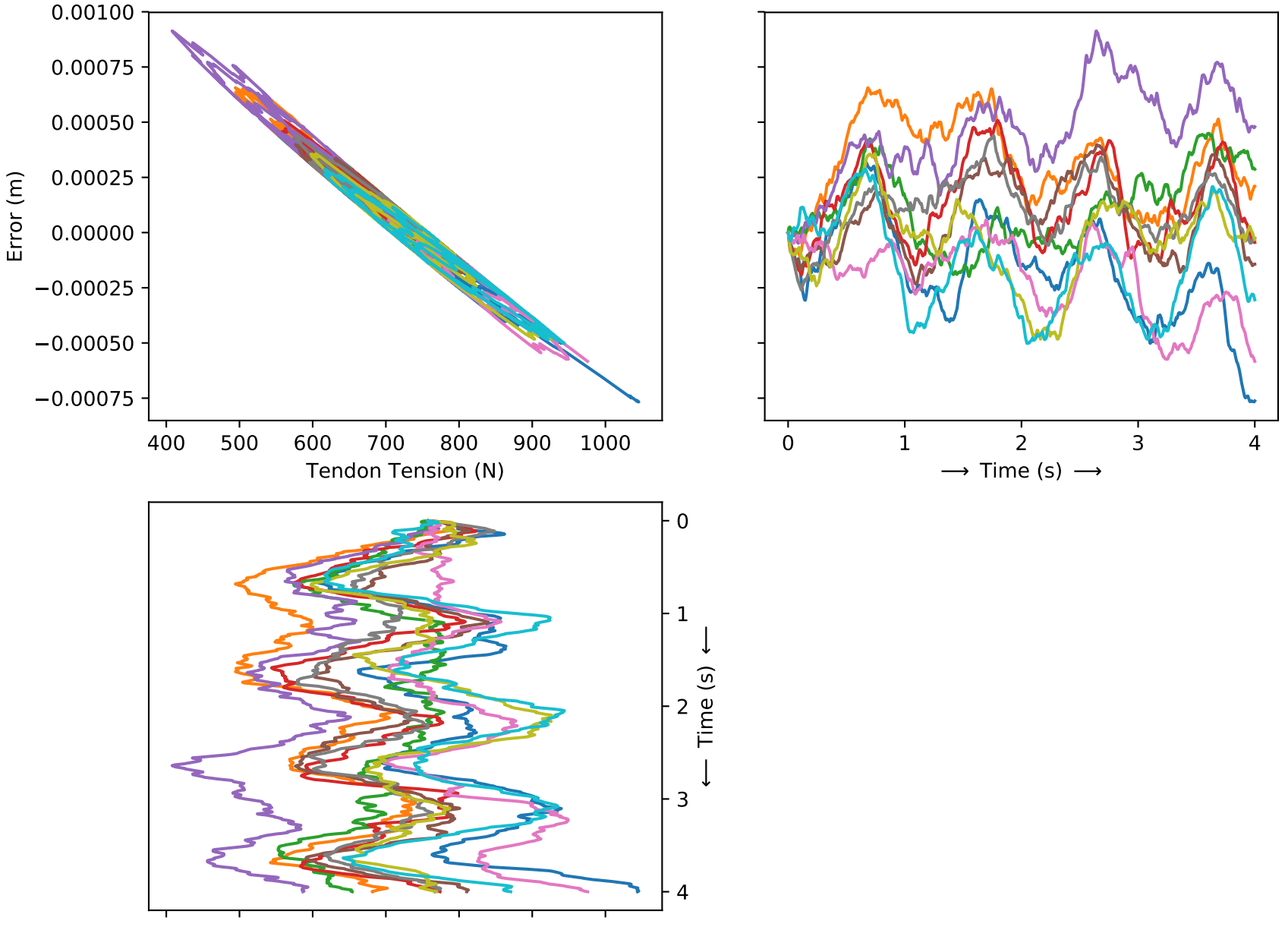

Error vs. Time
0.00
−0.01
−0.02
−0.03
−0.04
−0.05
−0.06
Error (Deg)
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3.5
4.0
Time (s)


Muscle Activations Driven
$x_1$ (Deg)
$x_2$ (Deg/s)
$x_3$ (N)
$x_4$ (N)
$x_5$ (m)
$x_6$ (m)
$x_7$ (m/s)
$x_8$ (m/s)
Time (s)


Muscle Activations vs. Time
$u_1$
$u_2$
0.0
0.1
0.2
0.3
0.4
0.5
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3.5
4.0
Time (s)


Muscle vs. Musculotendon Lengths
Muscle Activation Driven
$l_{m,1}/l_{MTU,1}$ (m)
Error (m)
$l_{m,2}/l_{MTU,2}$ (m)
Error (m)
Time (s)
Time (s)
Time (s)
Time (s)


Error from MTU Approx vs. Tendon Tension
Muscle 1
0.0015
0.0010
0.0005
0.0000
−0.0005
−0.0010
−0.0015
Error (m)
200
250
300
350
400
450
500
Tendon Tension (N)
0
1
2
3
4
⟶ Time (s) ⟶
0
1
2
3
4
⟵ Time (s) ⟵


Error from MTU Approx vs. Tendon Tension
Muscle 2
0.00100
0.00075
0.00050
0.00025
0.00000
−0.00025
−0.00050
−0.00075
Error (m)
400
500
600
700
800
900
1000
Tendon Tension (N)
0
1
2
3
4
⟶ Time (s) ⟶
0
1
2
3
4
⟵ Time (s) ⟵