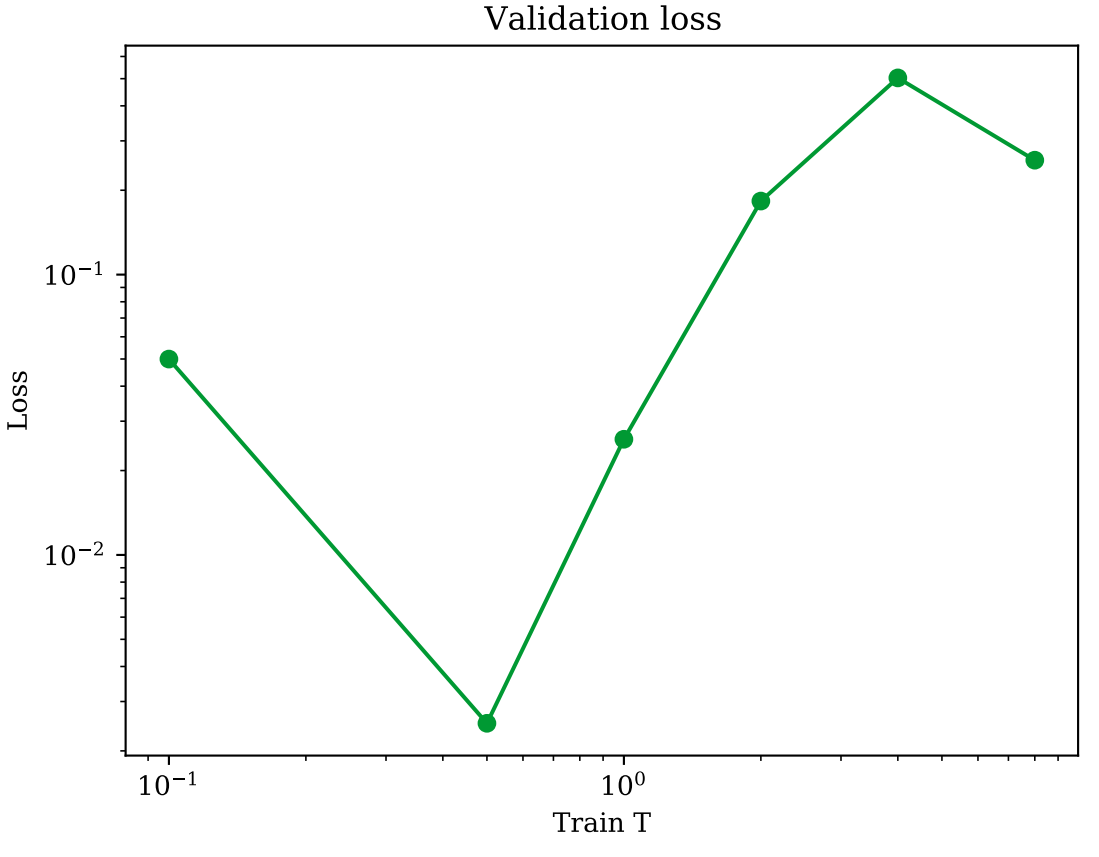
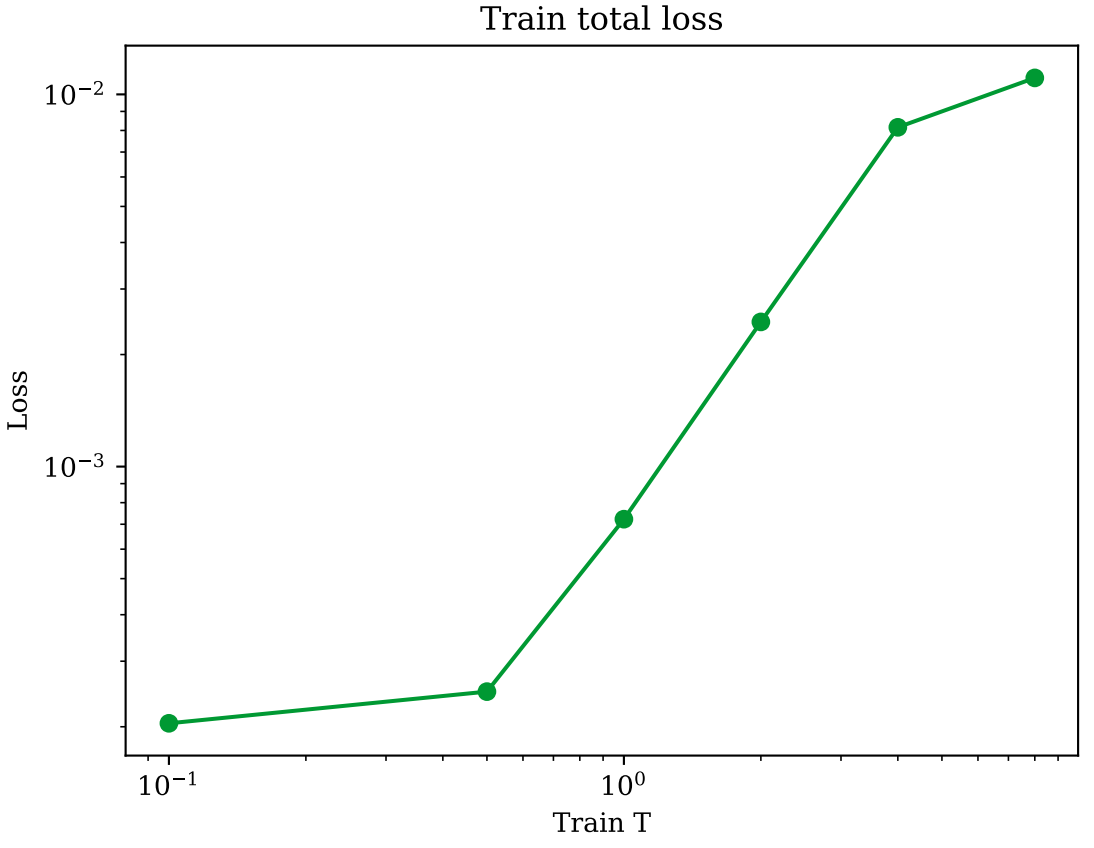
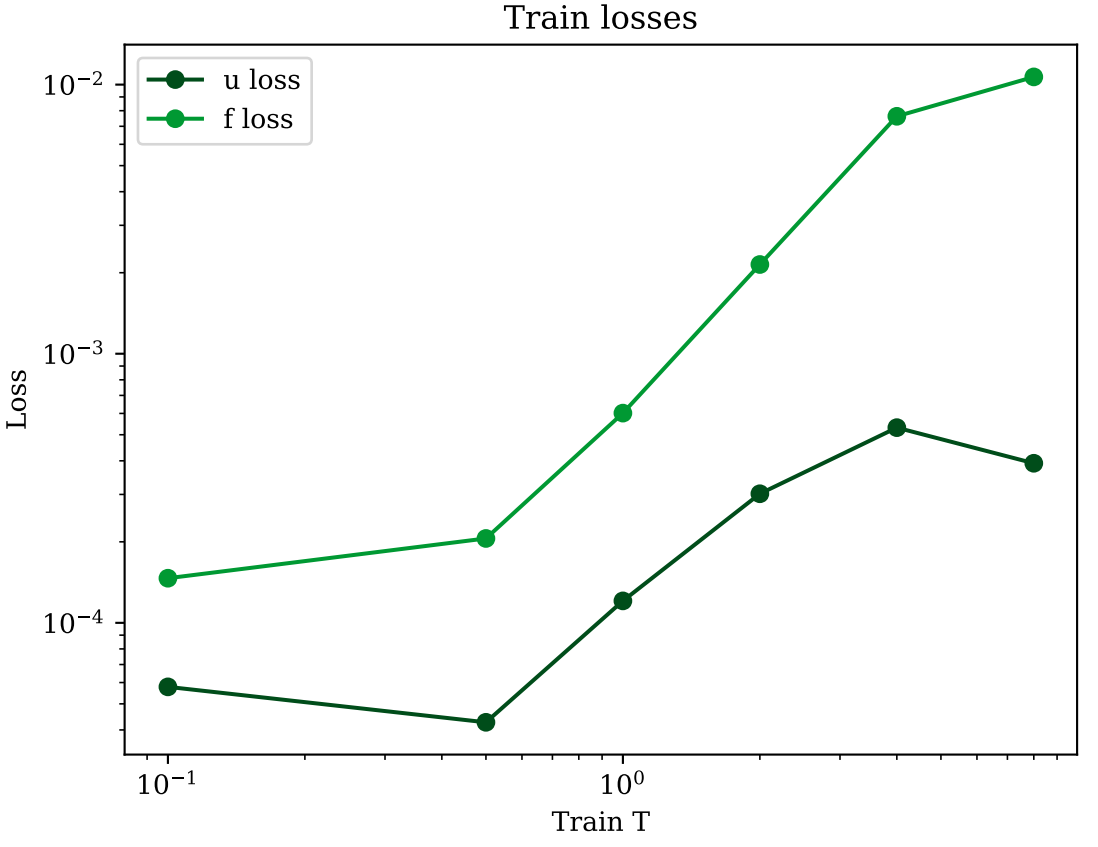
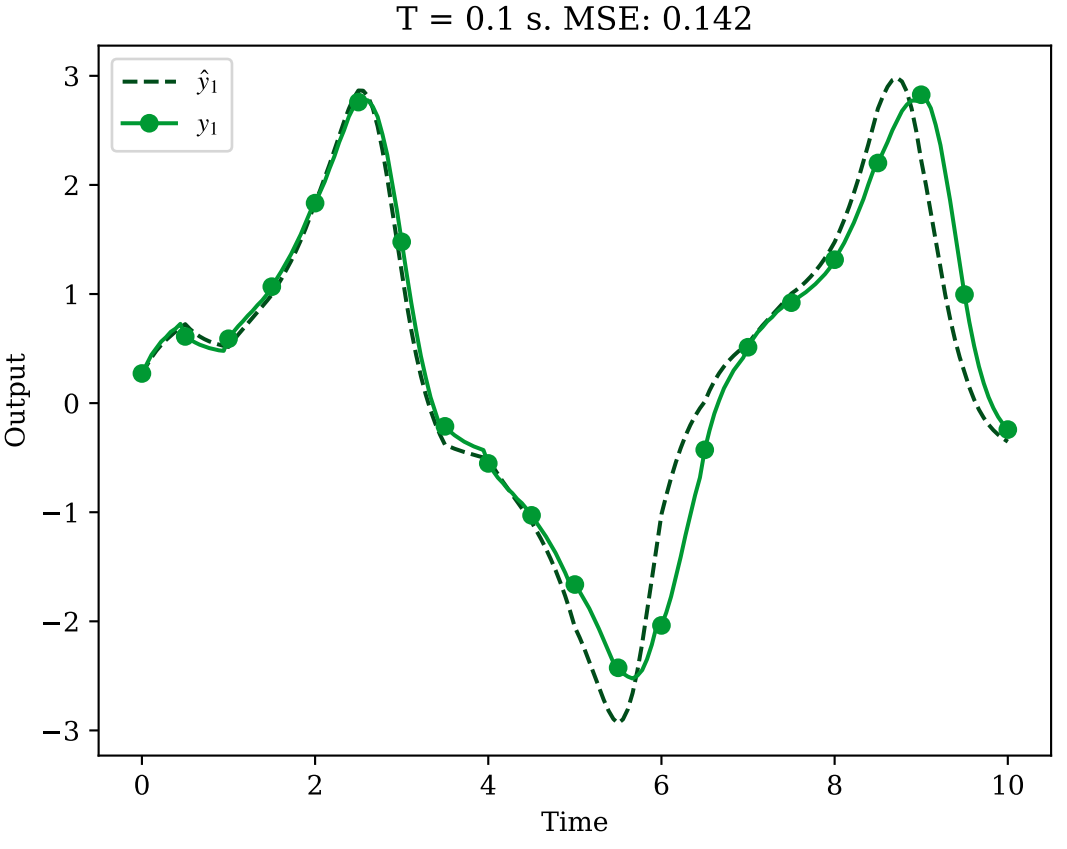
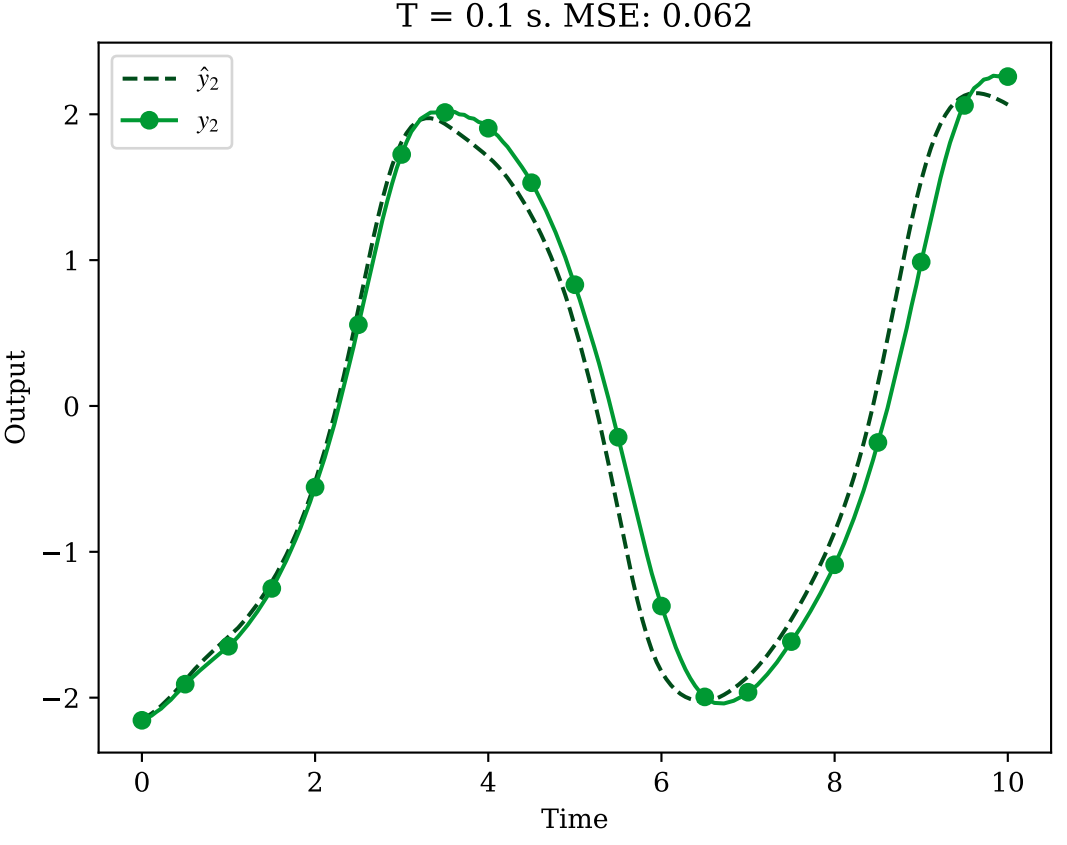
Neural network's T test:
Test duration -> 7:02:26.406525
Adam epochs -> 500
Max L-BFGS iterations -> 2000
Train Nu -> 1000
Train Nf -> 100000
Validation points -> 1810
Validation T -> 0.5 s
Test points -> 181
Test T -> 0.5 s

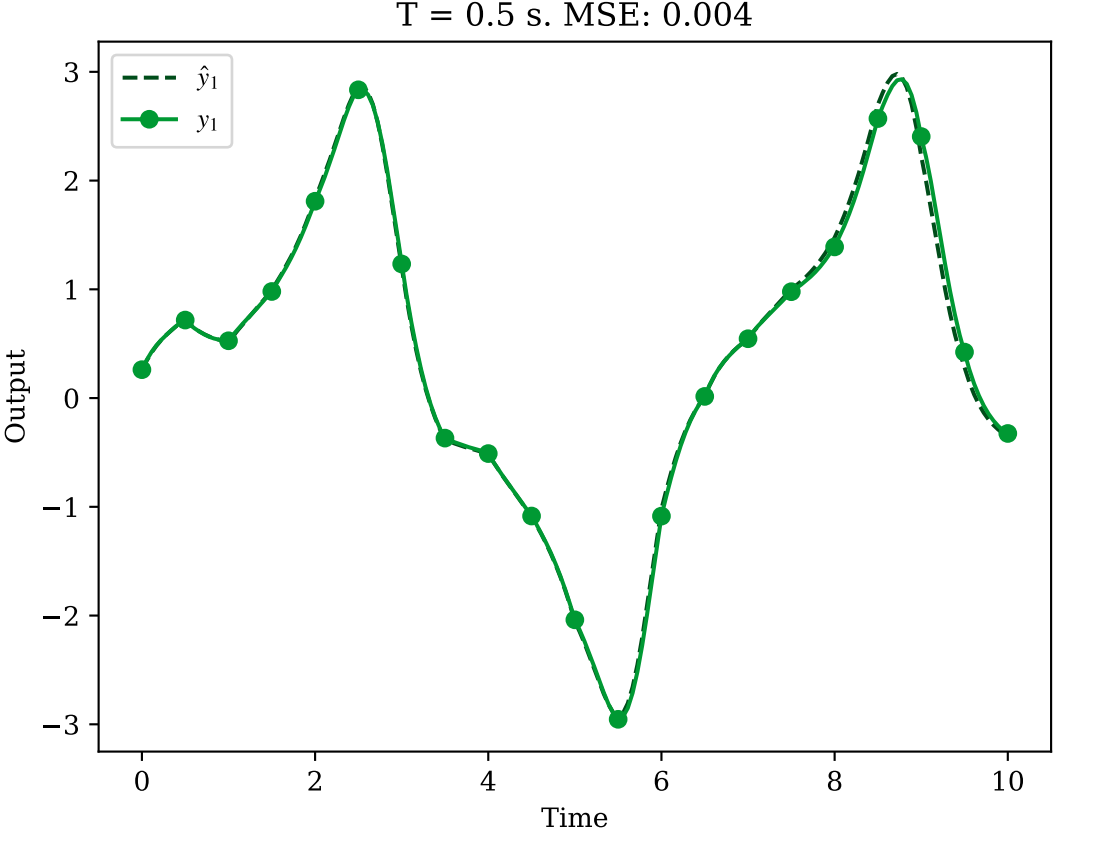

Validation loss
Loss
10^{-1}
10^{-2}
10^{-1}
10^{0}
Train T

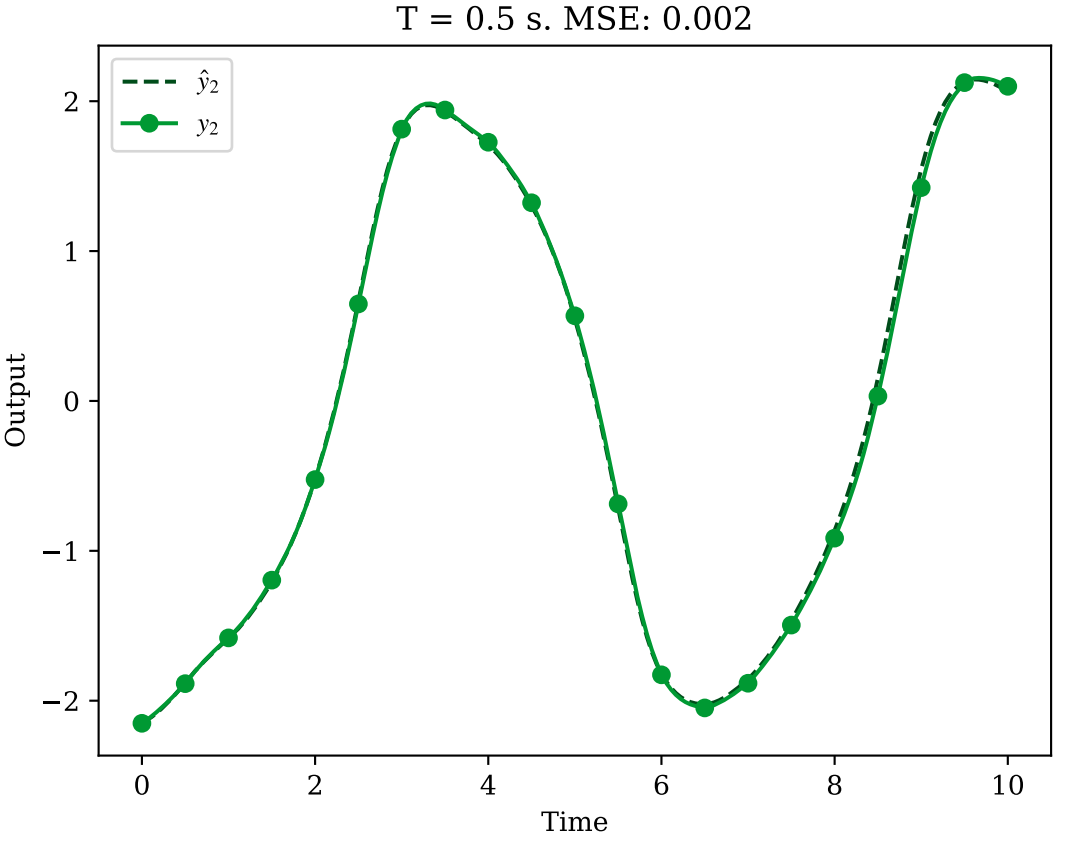

Train total loss
Loss
10^{-2}
10^{-3}
10^{-1}
10^{0}
Train T

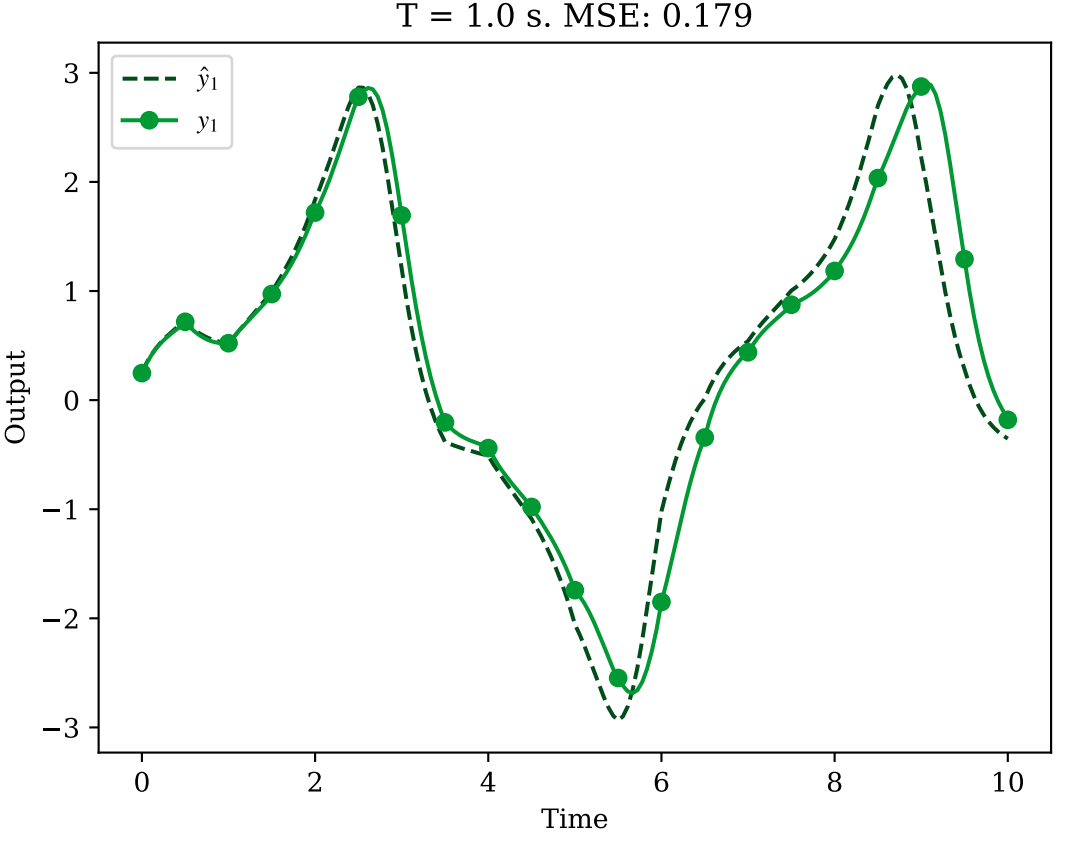

Train losses
u loss
f loss
10^{-2}
10^{-3}
10^{-4}
Loss
10^{-1}
10^{0}
Train T

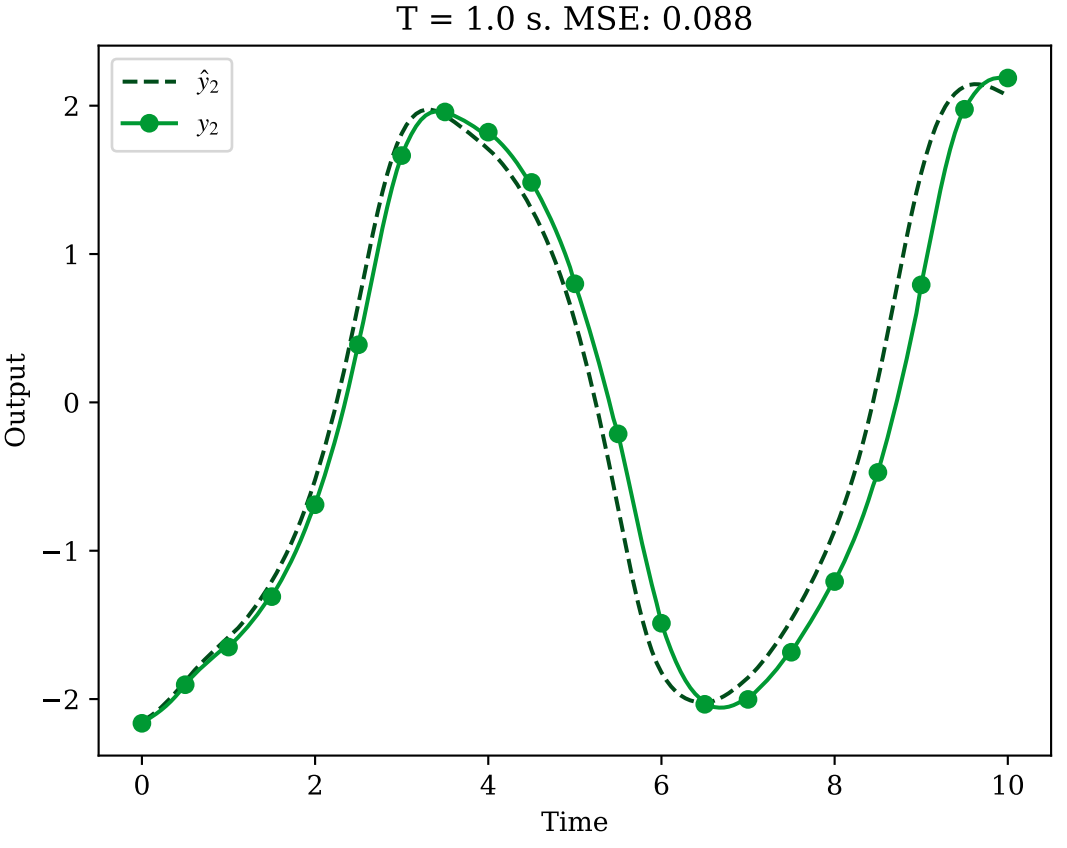

T = 0.1 s. MSE: 0.142
$\hat{y}_1$
y_1
Output
Time
3
2
1
0
−1
−2
−3
0
2
4
6
8
10

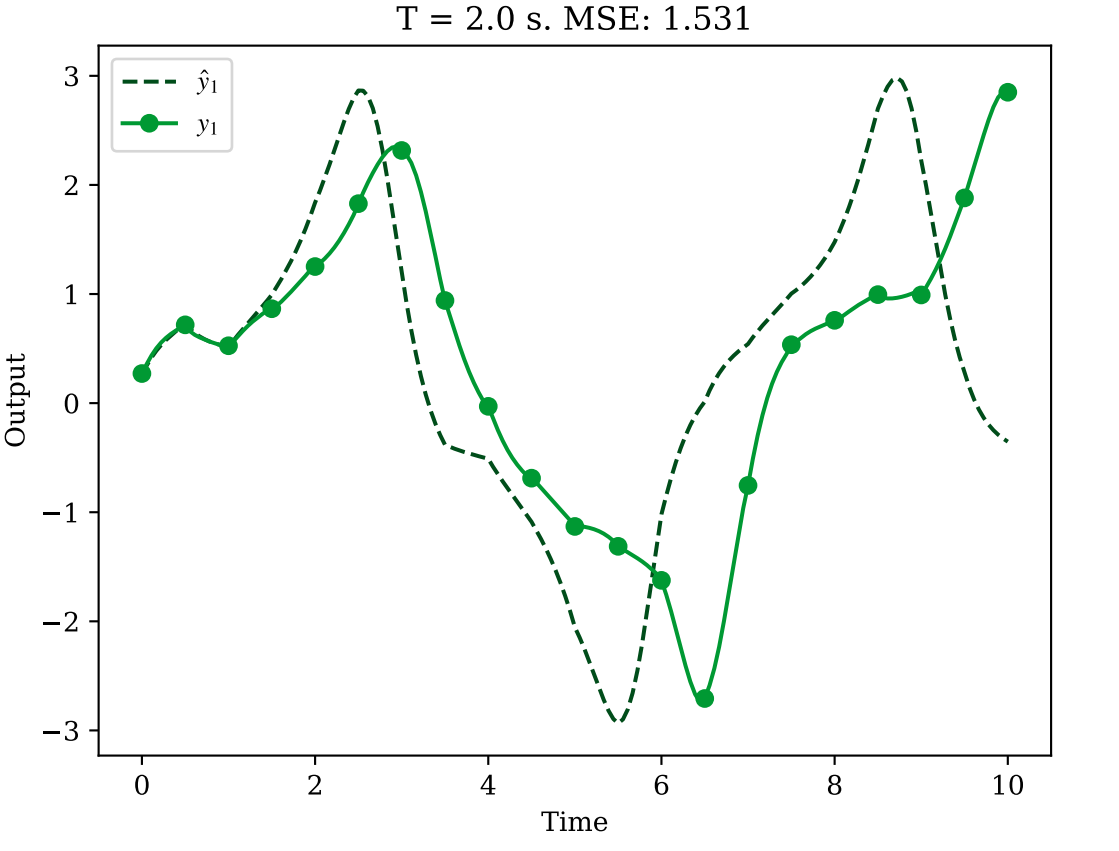

T = 0.1 s. MSE: 0.062
$\hat{y}_2$
y_2
Output
Time
2
1
0
−1
−2
0
2
4
6
8
10

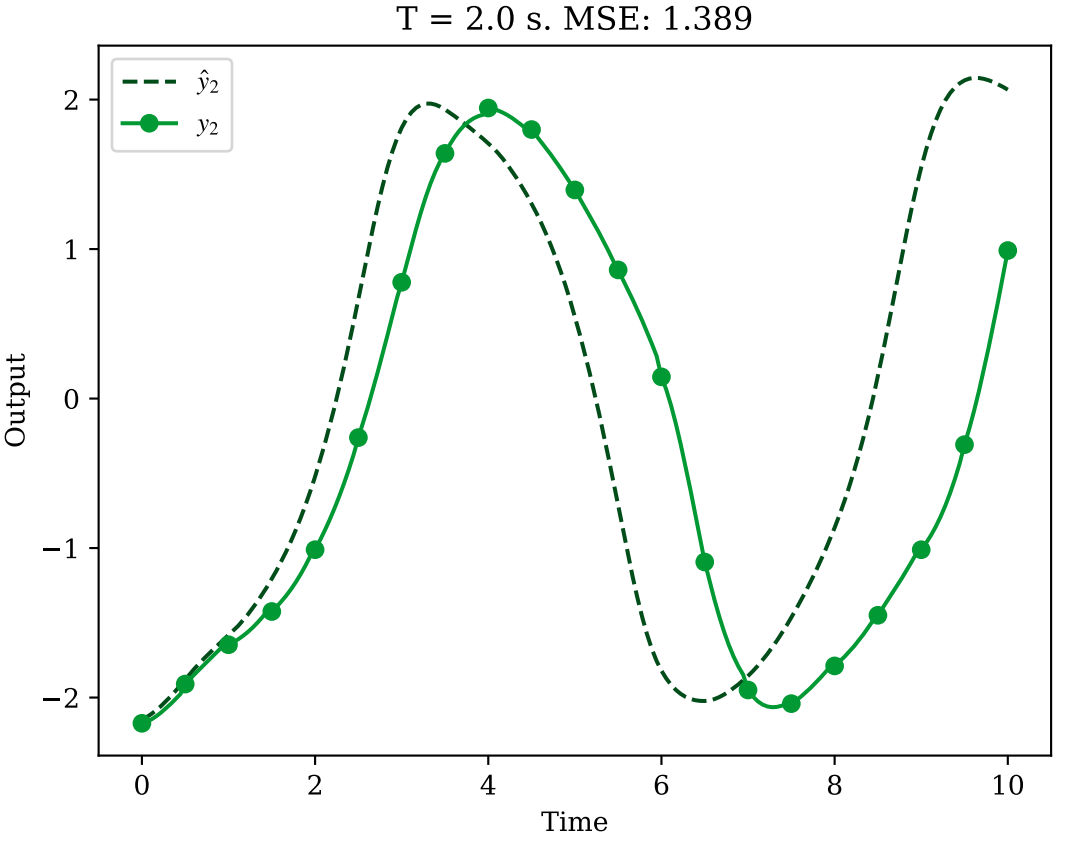

T = 0.5 s. MSE: 0.004
$\hat{y}_1$
y_1
Output
Time
3
2
1
0
−1
−2
−3
0
2
4
6
8
10

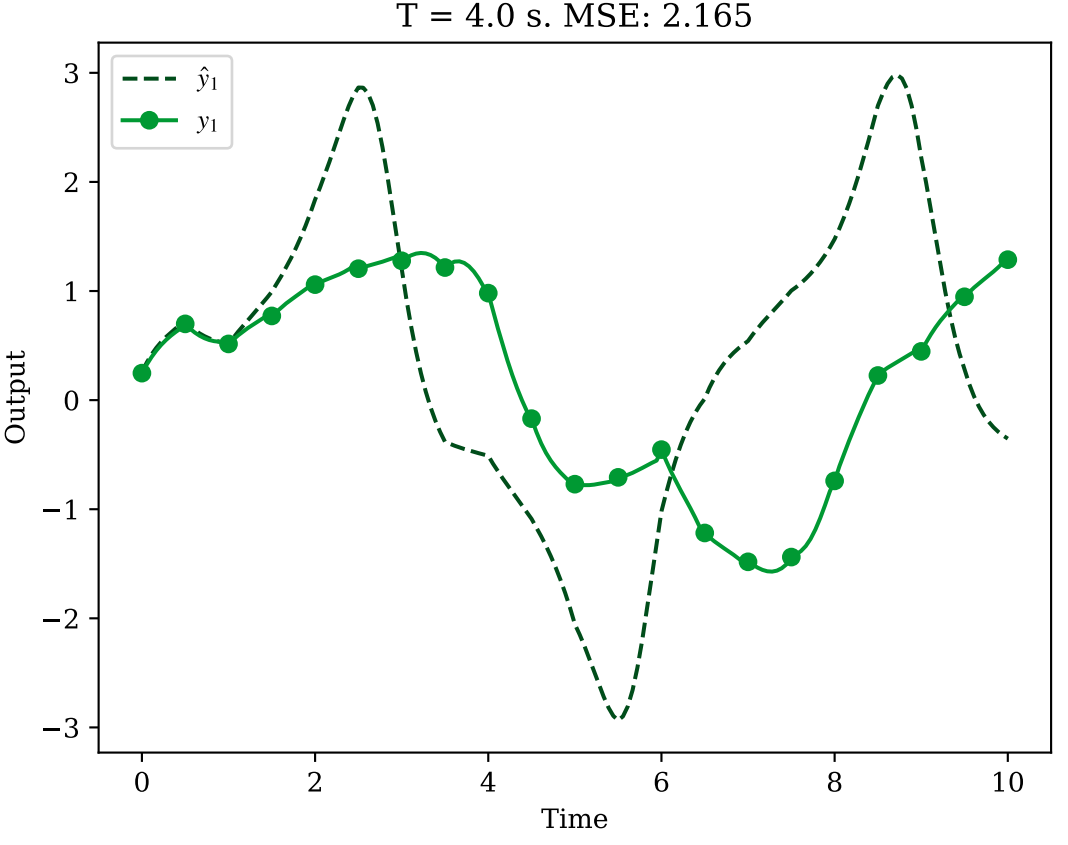

T = 0.5 s. MSE: 0.002
$\hat{y}_2$
y_2
Output
Time
2
1
0
−1
−2
0
2
4
6
8
10

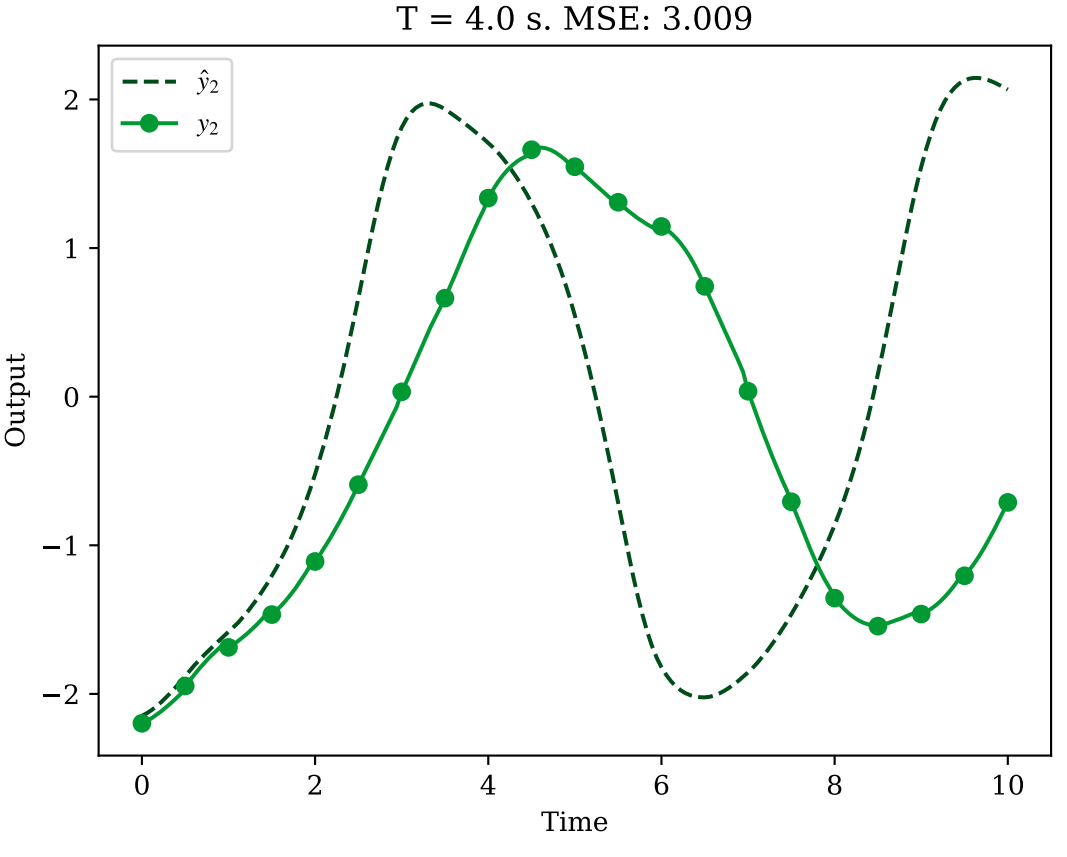

T = 1.0 s. MSE: 0.179
$\hat{y}_1$
y_1
Output
Time
3
2
1
0
−1
−2
−3
0
2
4
6
8
10

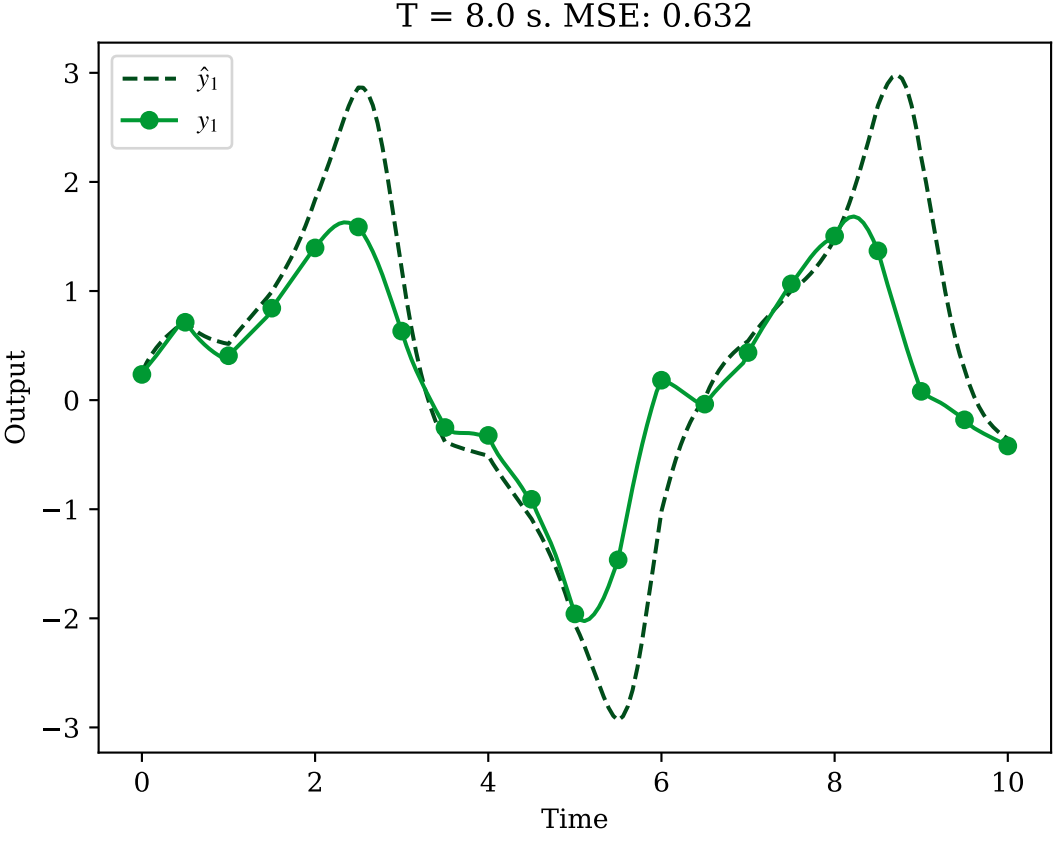

T = 1.0 s. MSE: 0.088
$\hat{y}_2$
y_2
Output
Time
2
1
0
−1
−2
0
2
4
6
8
10

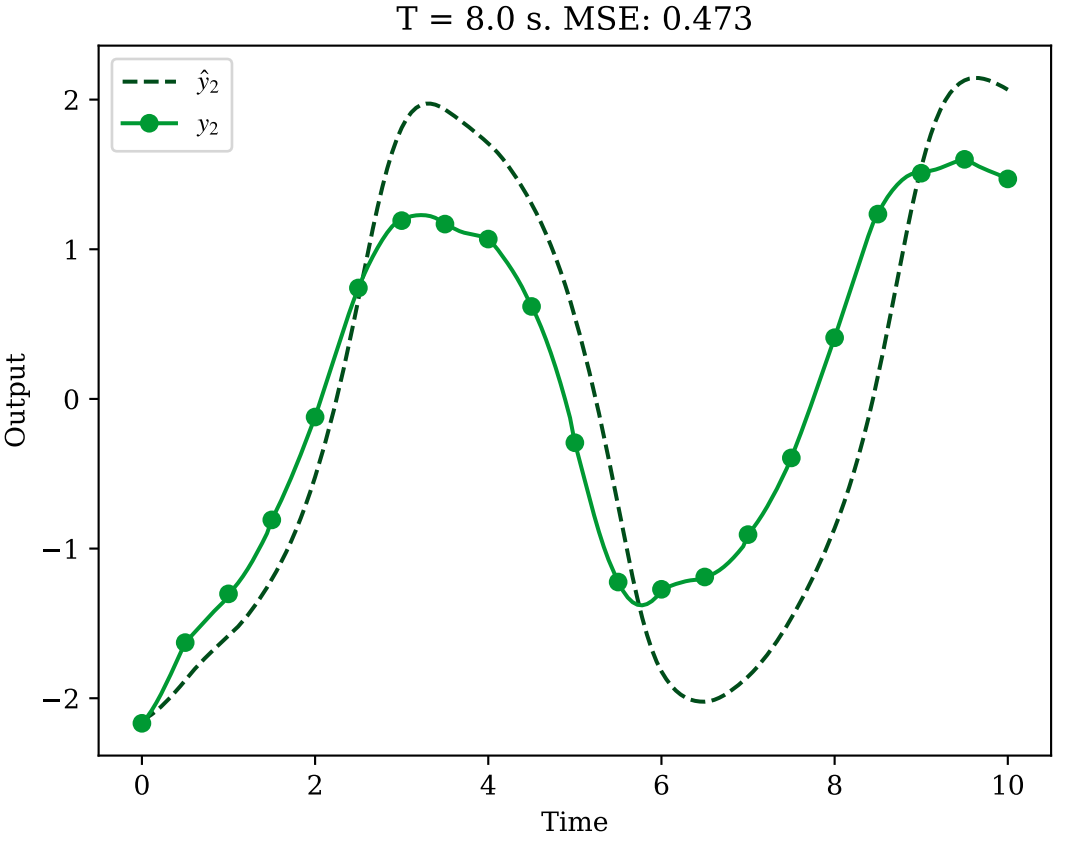

T = 2.0 s. MSE: 1.531
$\hat{y}_1$
y_1
Output
Time
3
2
1
0
−1
−2
−3
0
2
4
6
8
10


T = 2.0 s. MSE: 1.389
$\hat{y}_2$
y_2
Output
Time
2
1
0
−1
−2
0
2
4
6
8
10


T = 4.0 s. MSE: 2.165
$\hat{y}_1$
y_1
Output
Time
3
2
1
0
−1
−2
−3
0
2
4
6
8
10


T = 4.0 s. MSE: 3.009
$\hat{y}_2$
y_2
Output
Time
2
1
0
−1
−2
0
2
4
6
8
10


T = 8.0 s. MSE: 0.632
$\hat{y}_1$
y_1
Output
Time
3
2
1
0
−1
−2
−3
0
2
4
6
8
10


T = 8.0 s. MSE: 0.473
$\hat{y}_2$
y_2
Output
Time
2
1
0
−1
−2
0
2
4
6
8
10