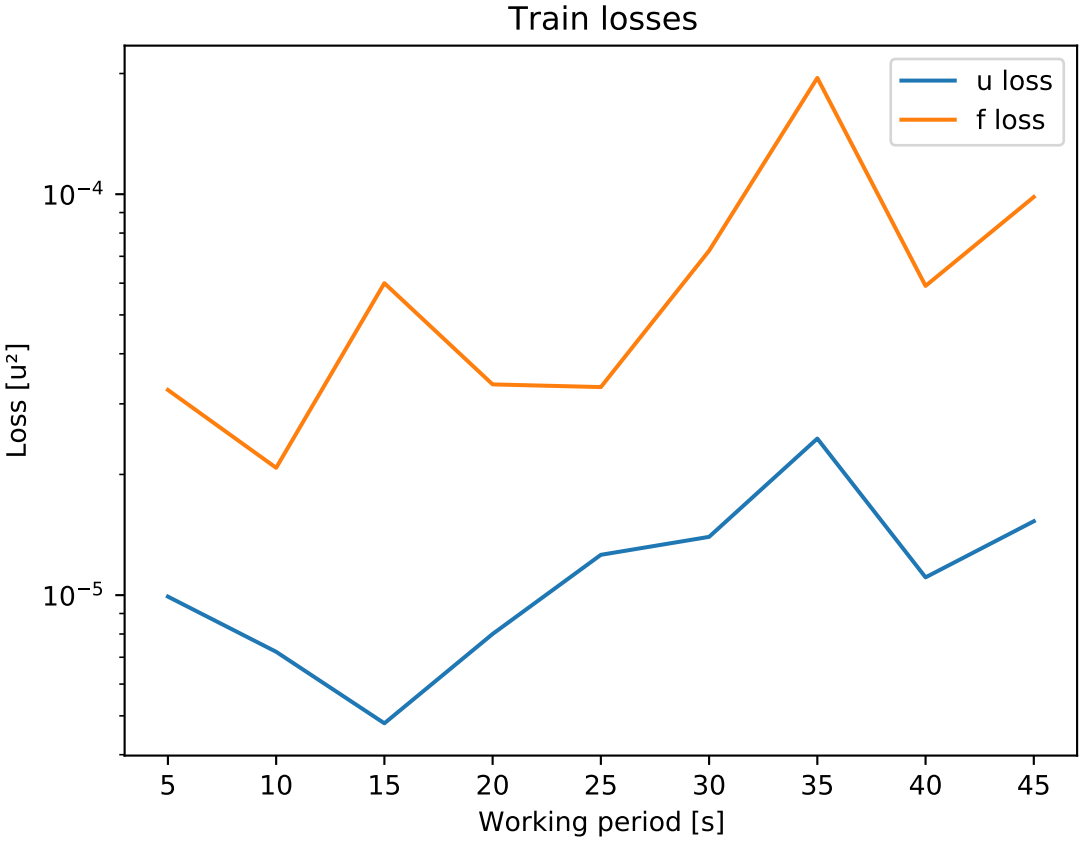
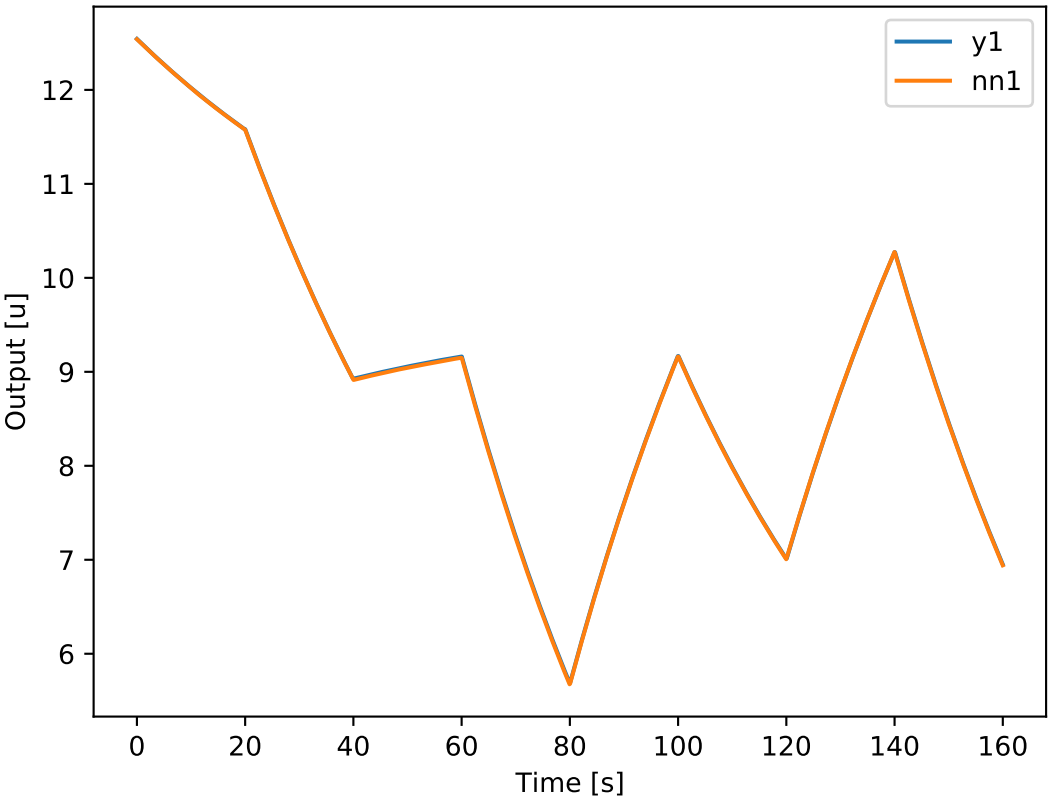
One tank neural network's working period test:
Adam epochs -> 500
Max L-BFGS iterations -> 2000
Train Nu -> 1000
Train Nf -> 100000
Validation points -> 10000
Test points -> 1600

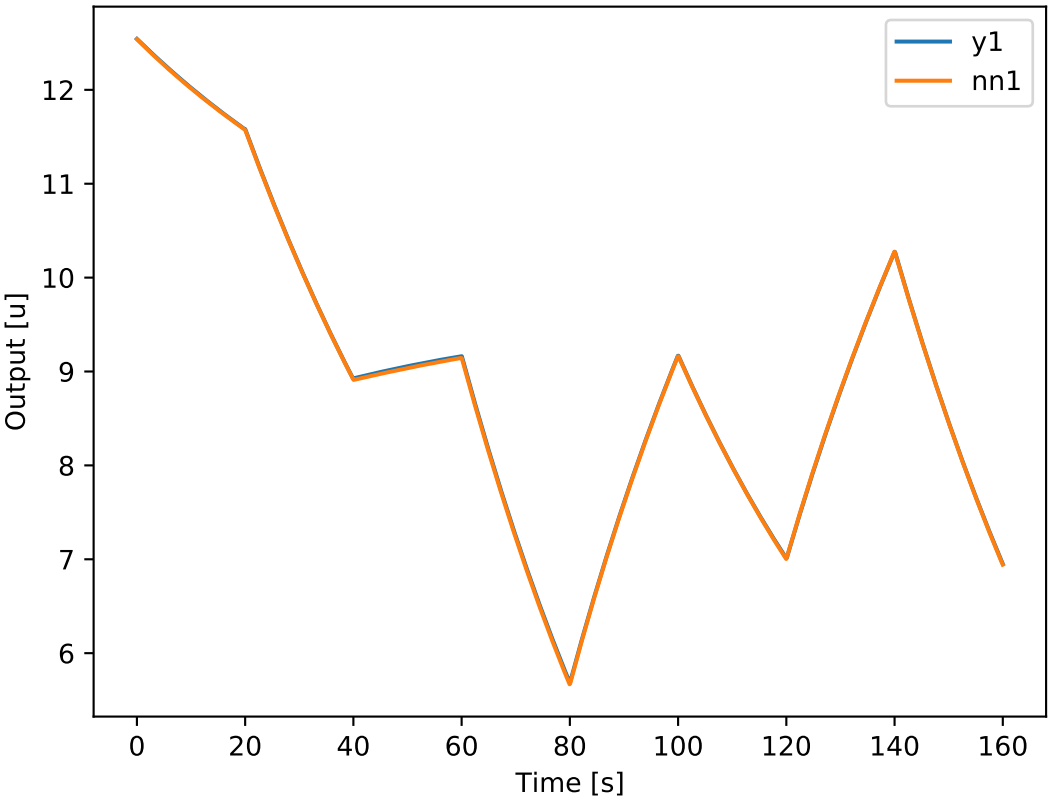
Train and validation total losses
train loss
val loss
10^{-4}
10^{-5}
Loss [u²]
5
10
15
20
25
30
35
40
45
Working period [s]

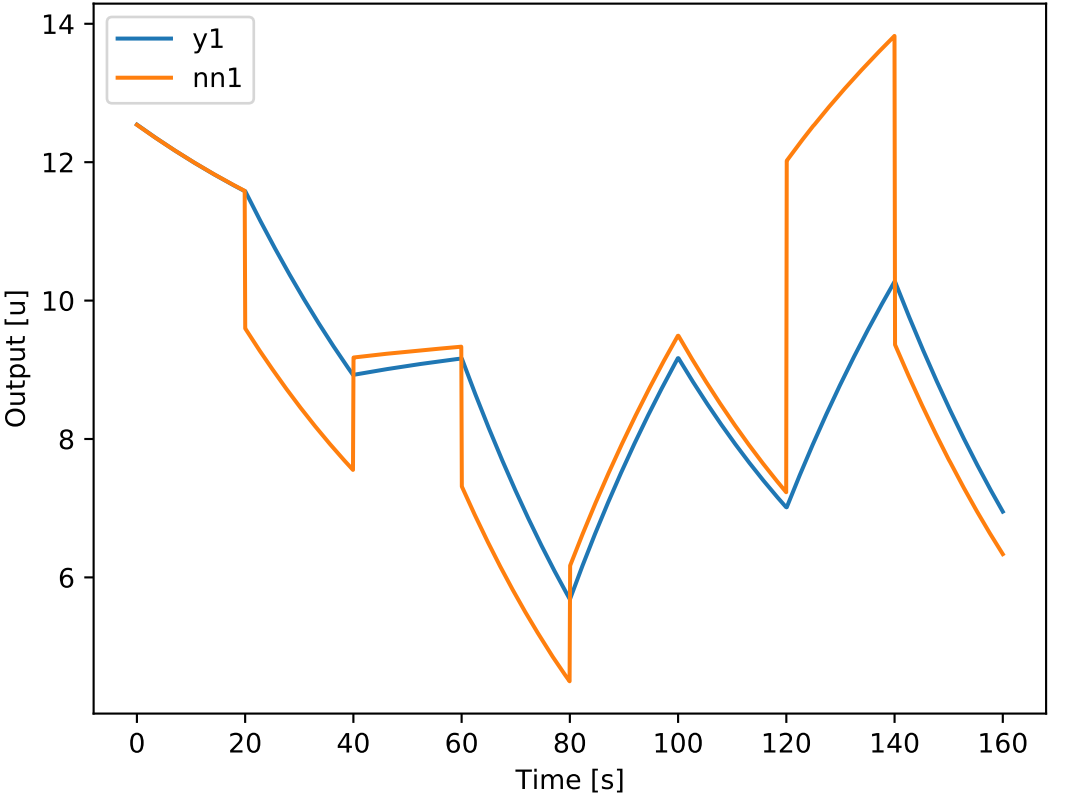

Train losses
u loss
f loss
10^{-4}
10^{-5}
Loss [u²]
5
10
15
20
25
30
35
40
45
Working period [s]

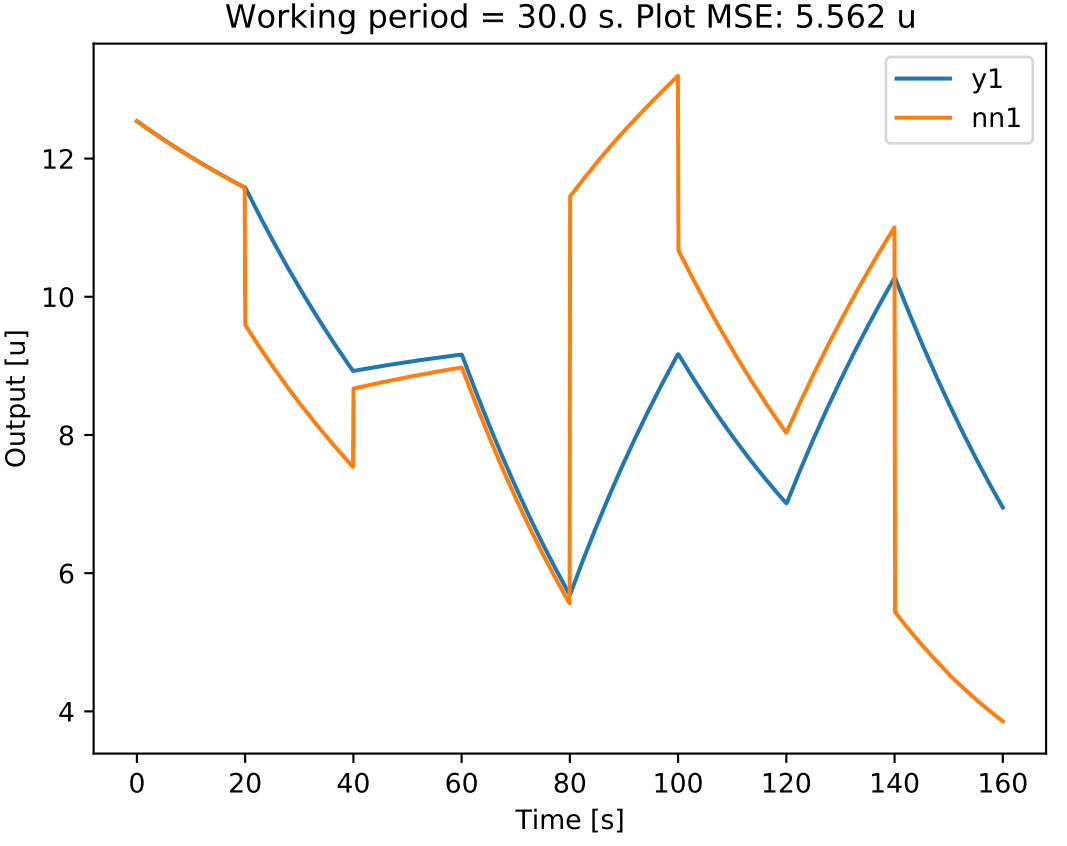
Working period = 5.0 s. Plot MSE: 0.0 u
y1
nn1
Output [u]
Time [s]
12
11
10
9
8
7
6
0
20
40
60
80
100
120
140
160


Working period = 10.0 s. Plot MSE: 0.0 u
y1
nn1
Output [u]
Time [s]
12
11
10
9
8
7
6
0
20
40
60
80
100
120
140
160

Working period = 15.0 s. Plot MSE: 0.997 u
y1
nn1
Output [u]
Time [s]
12
11
10
9
8
7
6
0
20
40
60
80
100
120
140
160

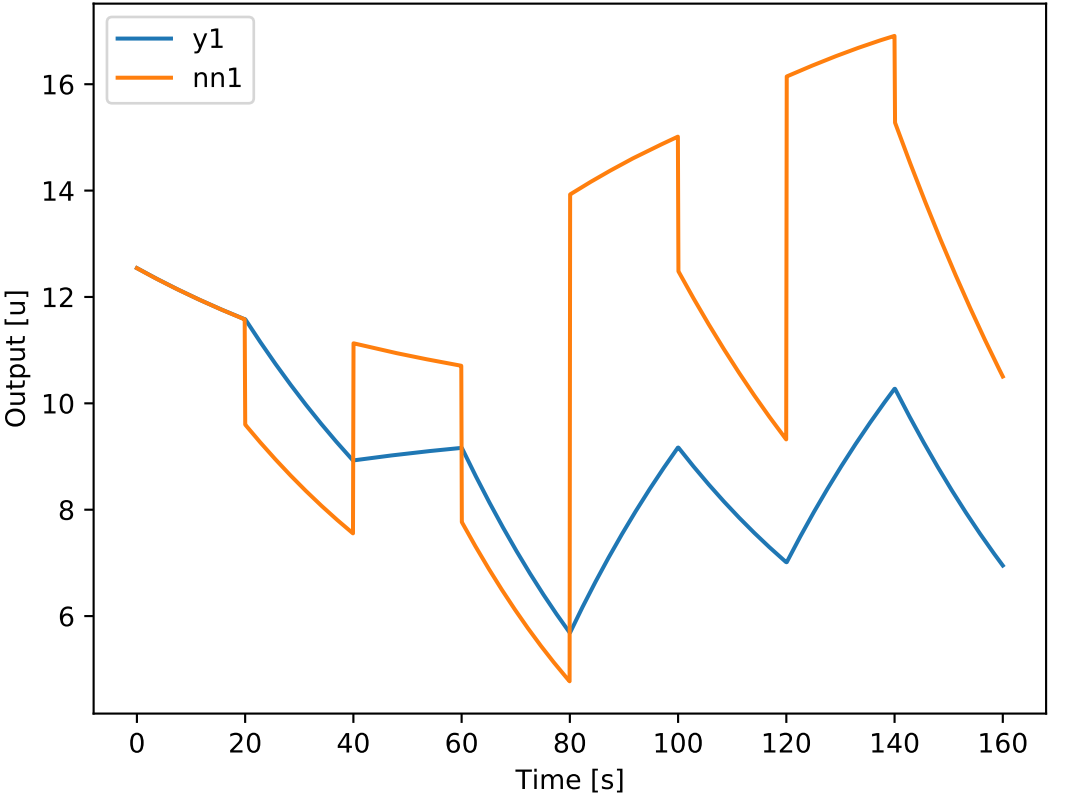

Working period = 20.0 s. Plot MSE: 0.0 u
y1
nn1
Output [u]
Time [s]
12
11
10
9
8
7
6
0
20
40
60
80
100
120
140
160


Working period = 25.0 s. Plot MSE: 3.002 u
y1
nn1
Output [u]
Time [s]
14
12
10
8
6
0
20
40
60
80
100
120
140
160


Working period = 30.0 s. Plot MSE: 5.562 u
y1
nn1
Output [u]
Time [s]
12
10
8
6
4
0
20
40
60
80
100
120
140
160

Working period = 35.0 s. Plot MSE: 4.891 u
y1
nn1
Output [u]
Time [s]
12
10
8
6
4
0
20
40
60
80
100
120
140
160

Working period = 40.0 s. Plot MSE: 11.444 u
y1
nn1
Output [u]
Time [s]
12
10
8
6
4
2
0
20
40
60
80
100
120
140
160


Working period = 45.0 s. Plot MSE: 18.013 u
y1
nn1
Output [u]
Time [s]
0
20
40
60
80
100
120
140
160
6
8
10
12
14
16