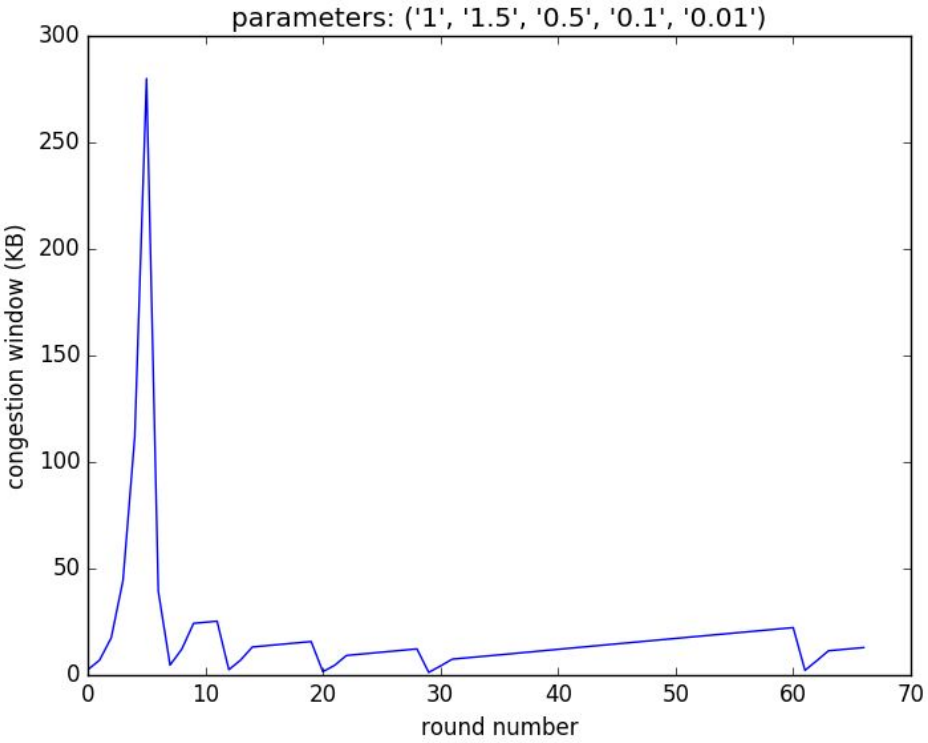
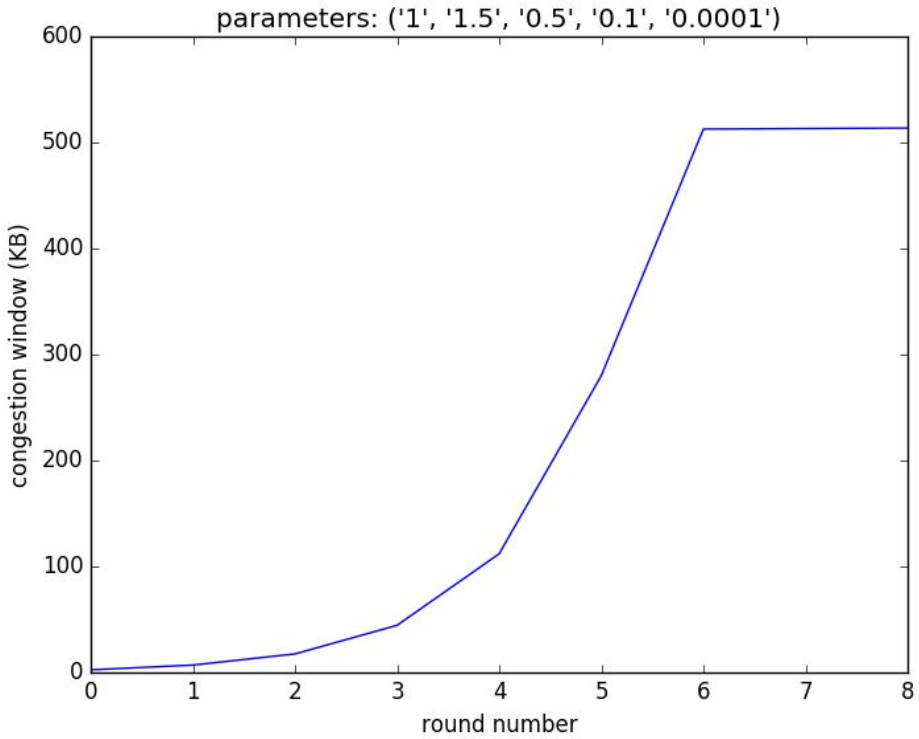
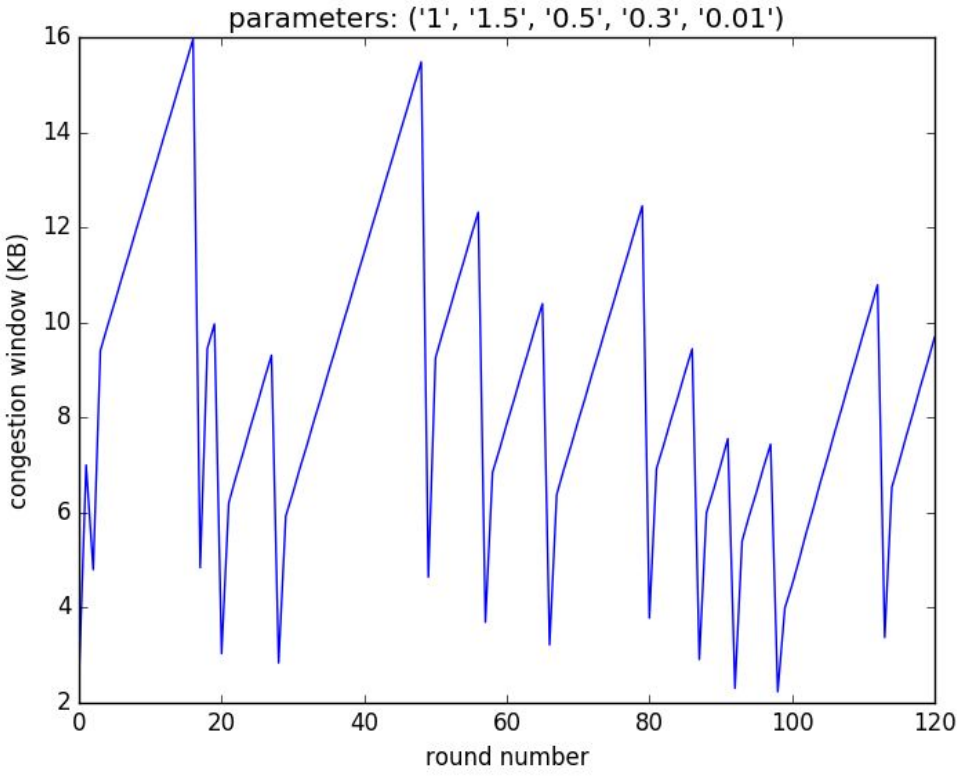
NETWORKS LAB-9

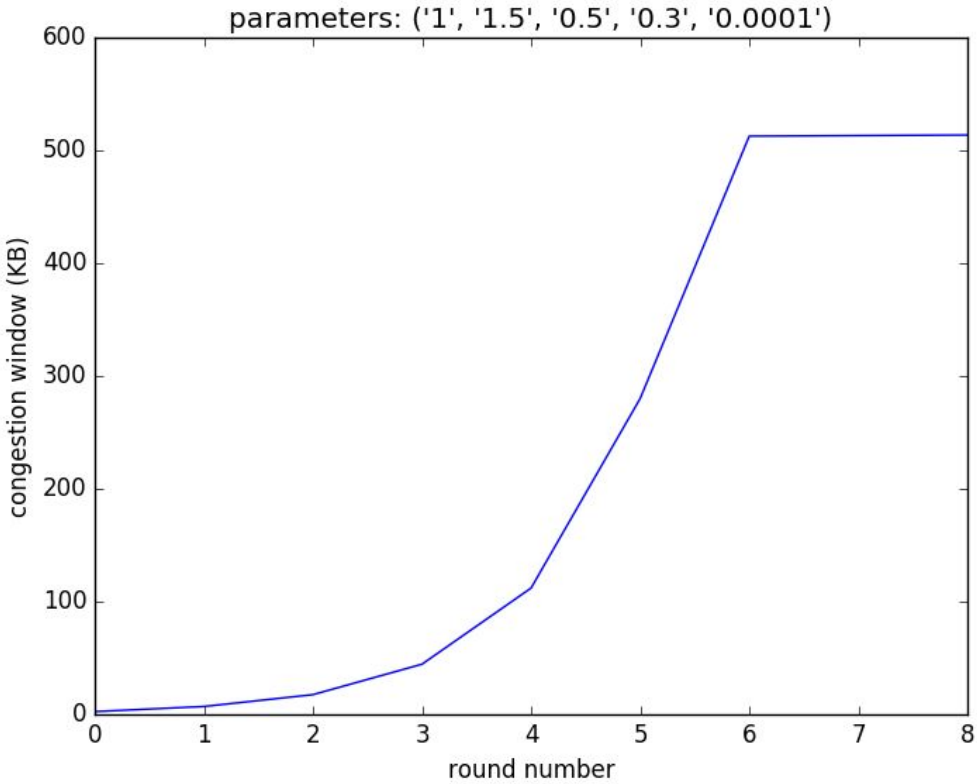
Observations:

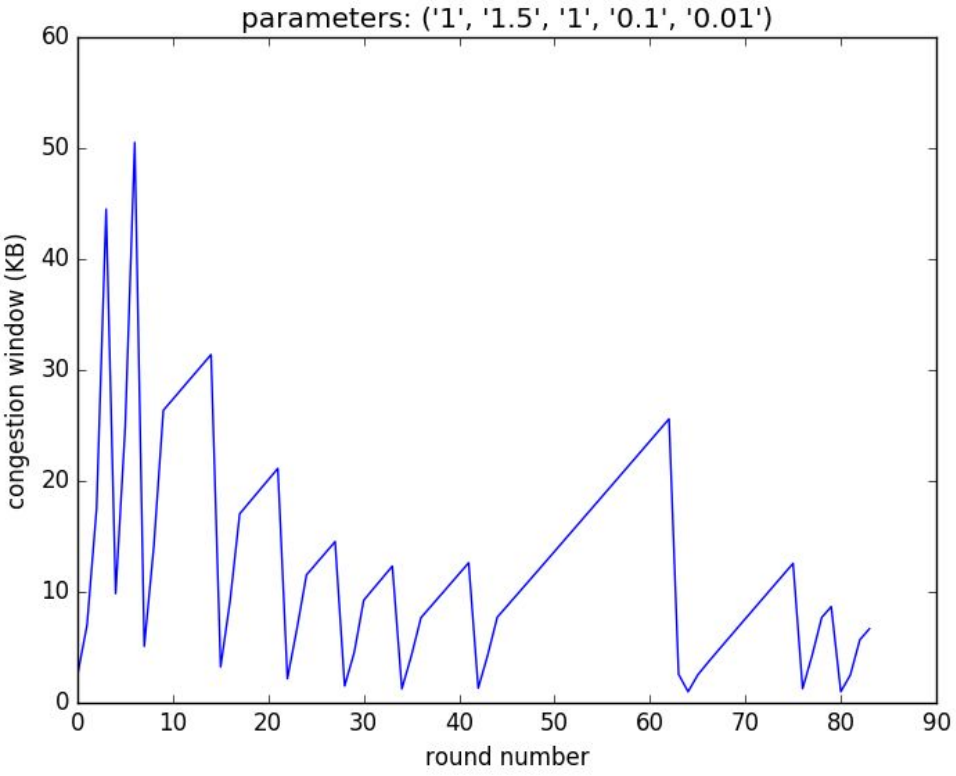
- On low packet drop probability, growing of congestion window is more in exponential phase. As there is very low packet drop, so congestion threshold remains at the higher side and hence exponential growth phase is high. While in case of high packet drop probability, timeout occurs frequently, so the congestion threshold gets reduced more often, reducing exponential growth phase.
- On increasing multiplier for exponential growth phase, congestion window reaches higher value at faster rate. It does not much significance if the drop probability is very low, as exponential growth phase will be larger. But for high packet drop probability, large exponential growth multiplier needs less number of rounds to send all the packets while lower value of exponential growth multiplier takes more round, as for lower value segments sent in a round is low.
- For large value of linear growth phase multiplier, congestion window reaches higher value than the case when linear growth multiplier is small. It is because the increment in the segments sent in a round is more in case of higher growth multiplier.
- Increase in timeout multiplier decreases congestion window. It is because in each timeout, congestion windows gets reduced more in case of higher value of timeout multiplier.
- The value of multiplier for initial value of congestion window does not affect much. As initially congestion window growth phase is exponential, so higher initial value gets compensated in few round of the exponential growth phase.

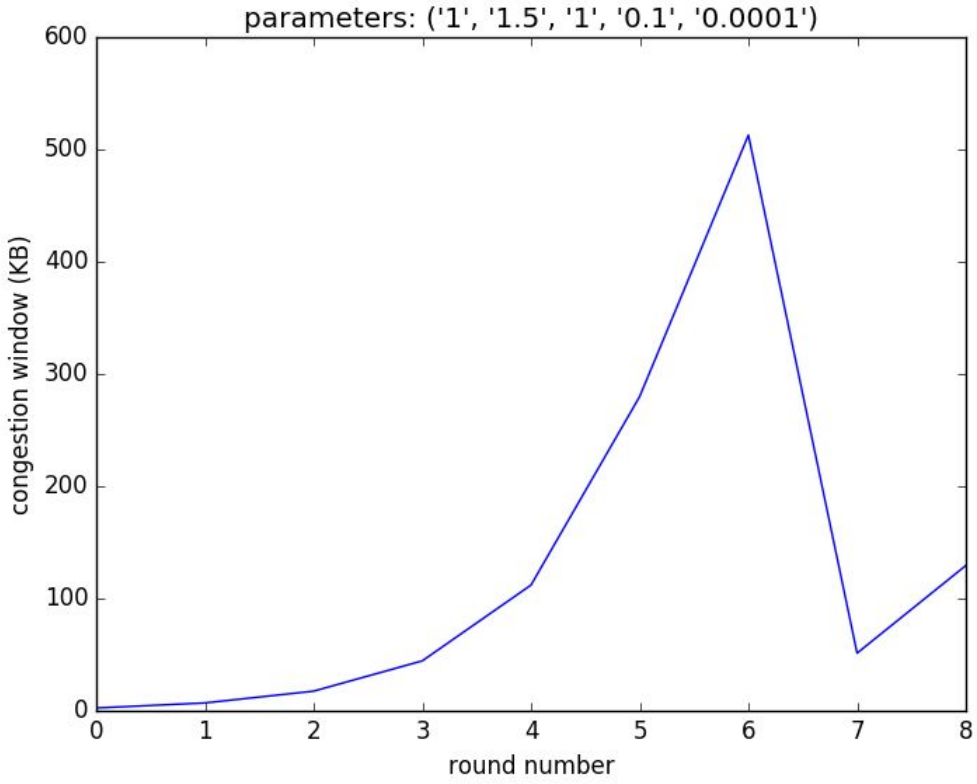

parameters: ('1', '1.5', '0.5', '0.1', '0.01')
congestion window (KB)
round number
0
50
100
150
200
250
300
0
10
20
30
40
50
60
70

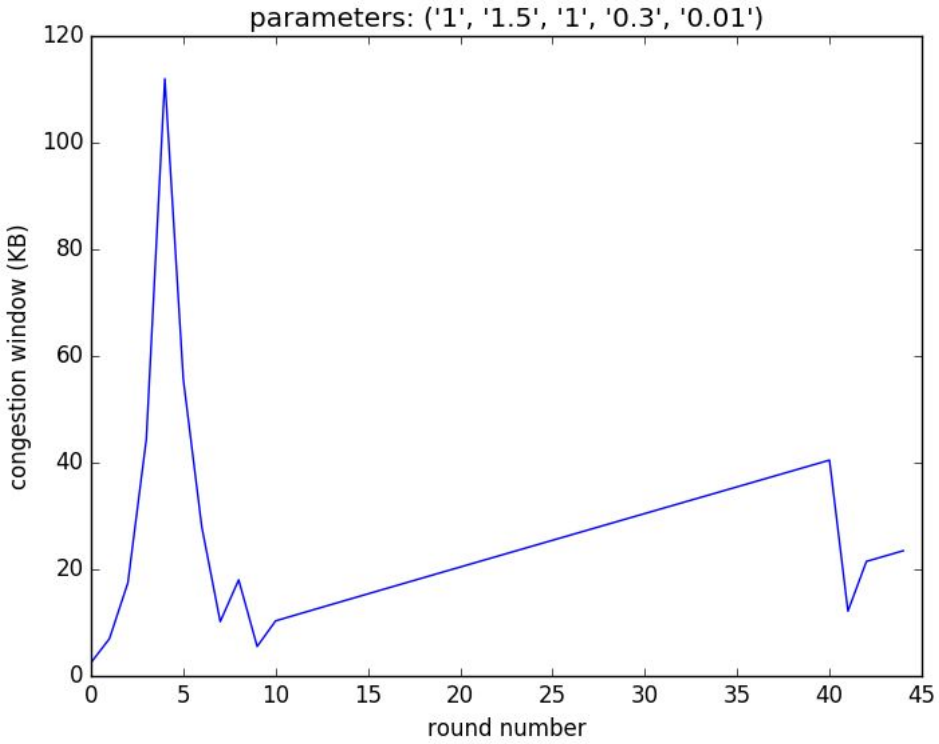

parameters: ('1', '1.5', '0.5', '0.1', '0.0001')
congestion window (KB)
round number
0
100
200
300
400
500
600
0
1
2
3
4
5
6
7
8

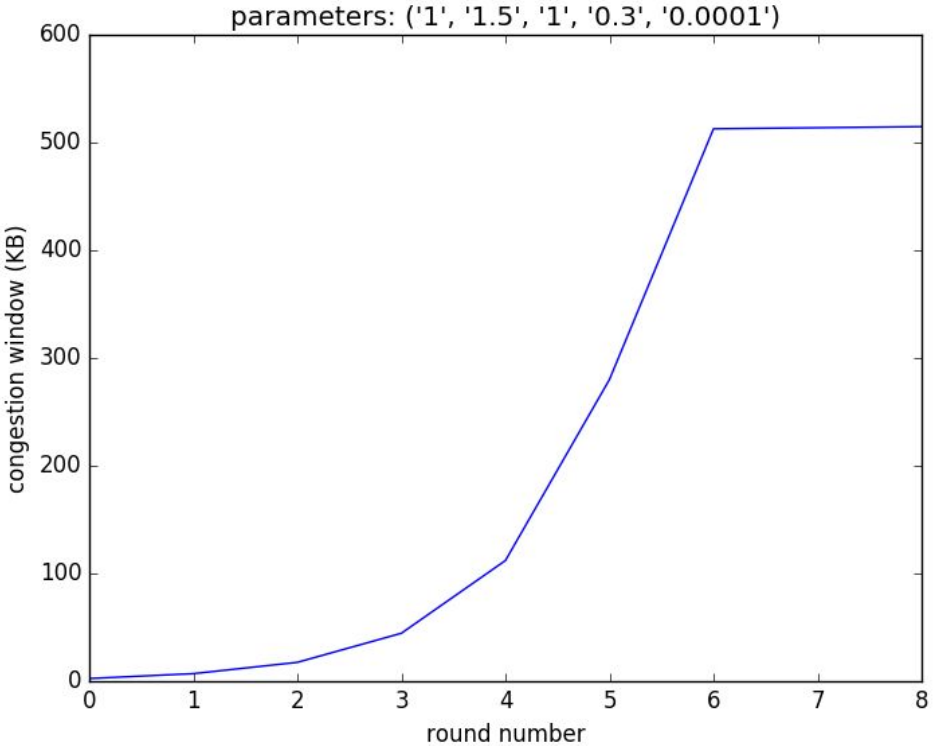

parameters: ('1', '1.5', '0.5', '0.3', '0.01')
congestion window (KB)
round number
16
14
12
10
8
6
4
2
0
20
40
60
80
100
120

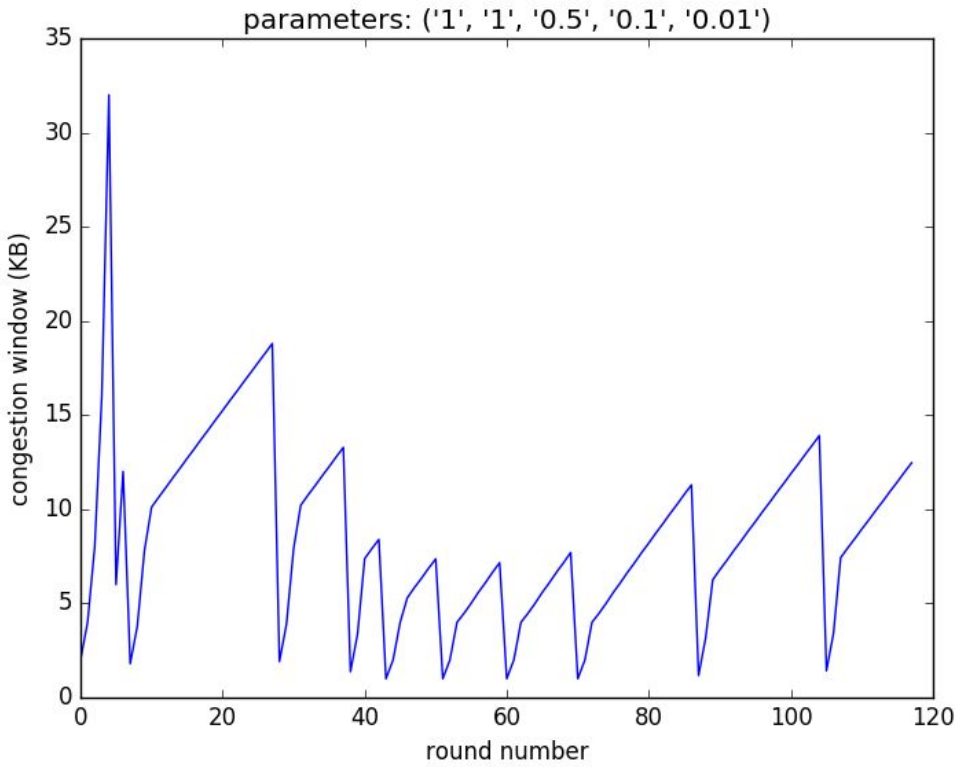

parameters: ('1', '1.5', '0.5', '0.3', '0.0001')
congestion window (KB)
round number
600
500
400
300
200
100
0
0
1
2
3
4
5
6
7
8

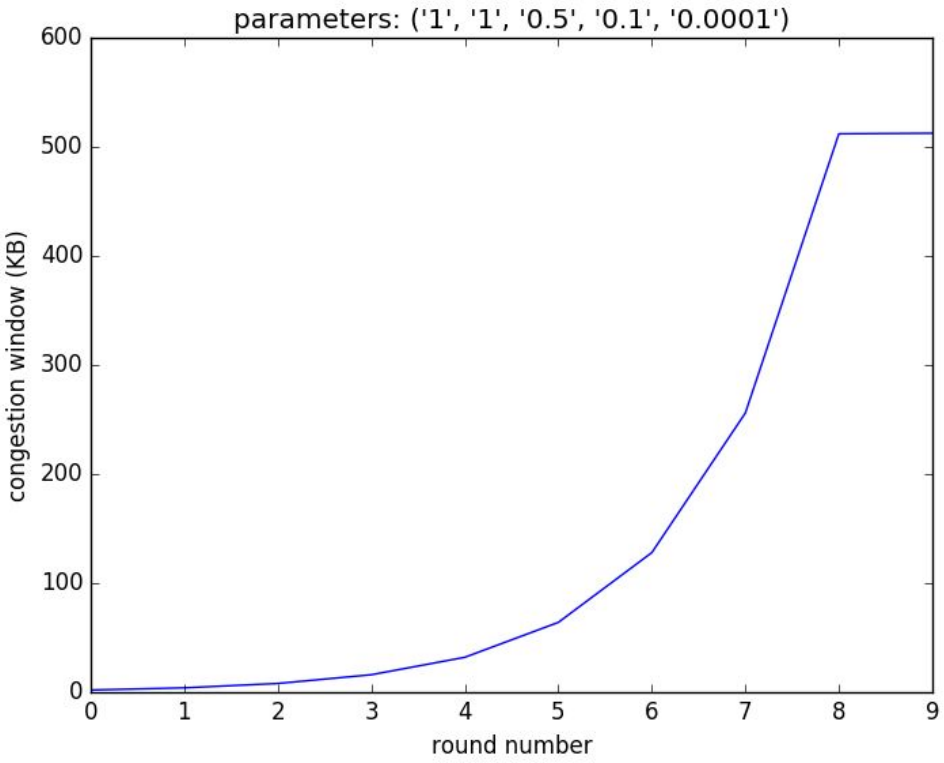

parameters: ('1', '1.5', '1', '0.1', '0.01')
congestion window (KB)
round number
0
10
20
30
40
50
60
70
80
90

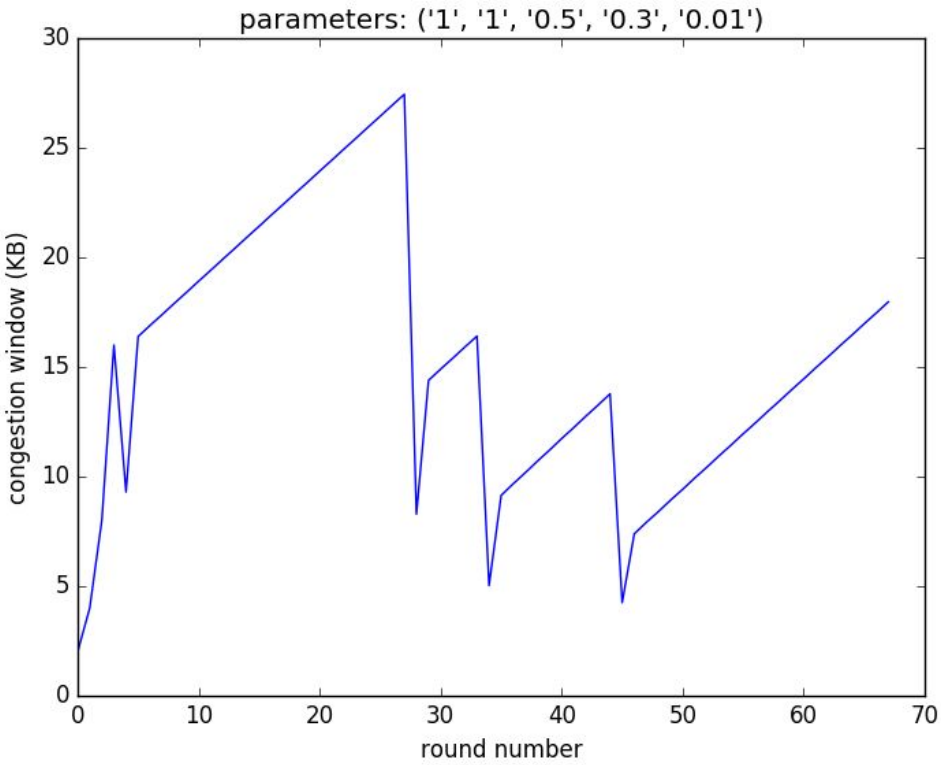

parameters: ('1', '1.5', '1', '0.1', '0.0001')
congestion window (KB)
round number
0
100
200
300
400
500
600
1
2
3
4
5
6
7
8

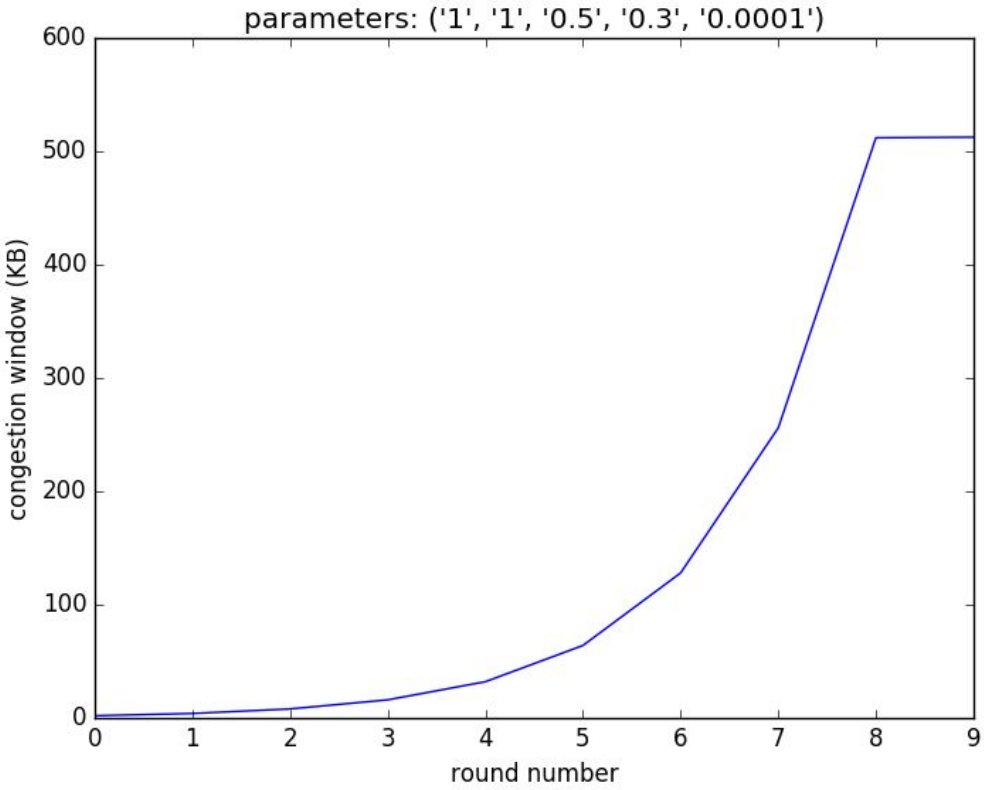

parameters: ('1', '1.5', '1', '0.3', '0.01')
congestion window (KB)
round number
0
20
40
60
80
100
120
0
5
10
15
20
25
30
35
40
45

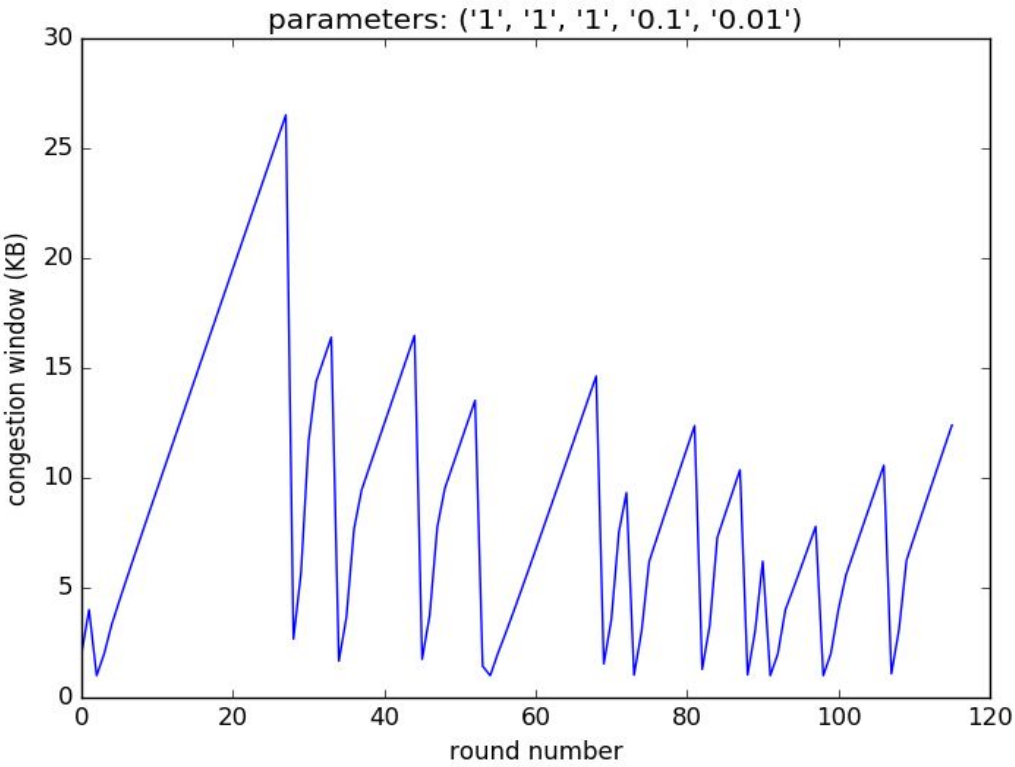

parameters: ('1', '1.5', '1', '0.3', '0.0001')
congestion window (KB)
round number
0
100
200
300
400
500
600
0
1
2
3
4
5
6
7
8

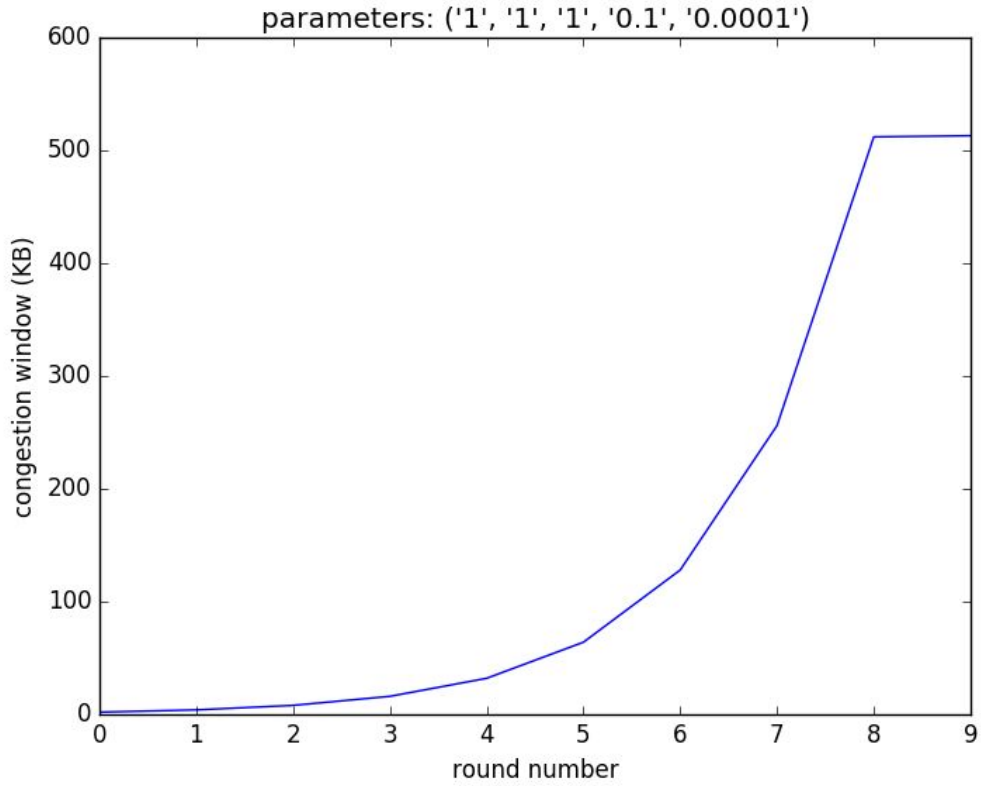

parameters: ('1', '1', '0.5', '0.1', '0.01')
congestion window (KB)
round number
0
5
10
15
20
25
30
35
0
20
40
60
80
100
120

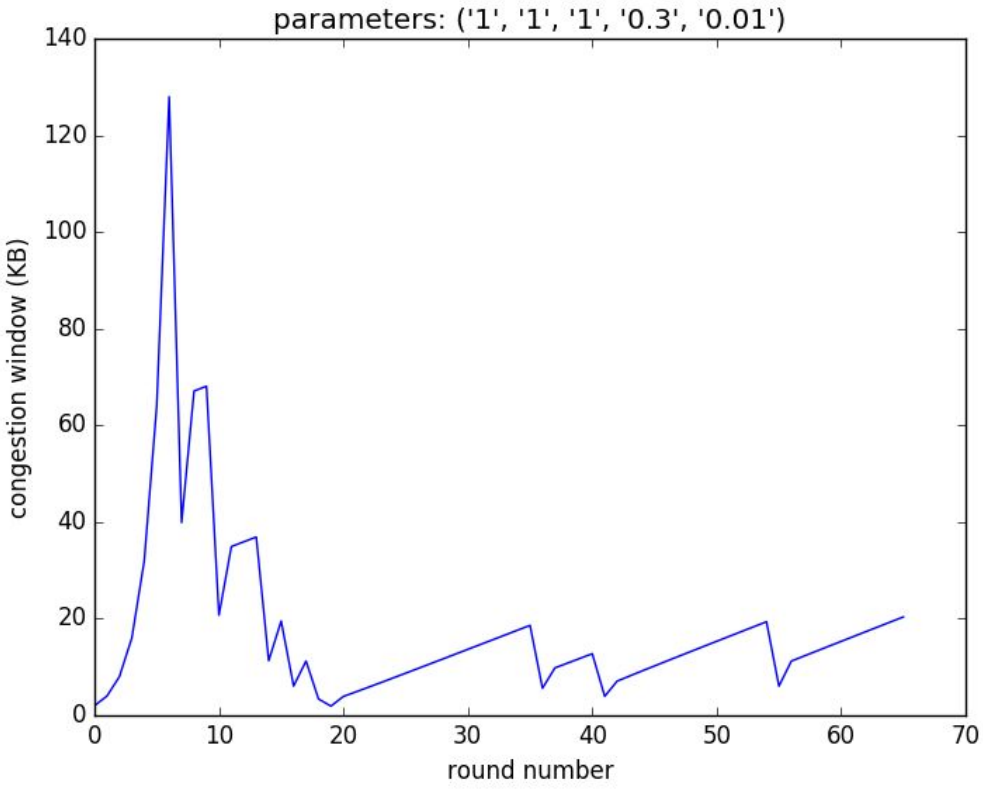

parameters: ('1', '1', '0.5', '0.1', '0.0001')
congestion window (KB)
round number
0
100
200
300
400
500
600
0
1
2
3
4
5
6
7
8
9

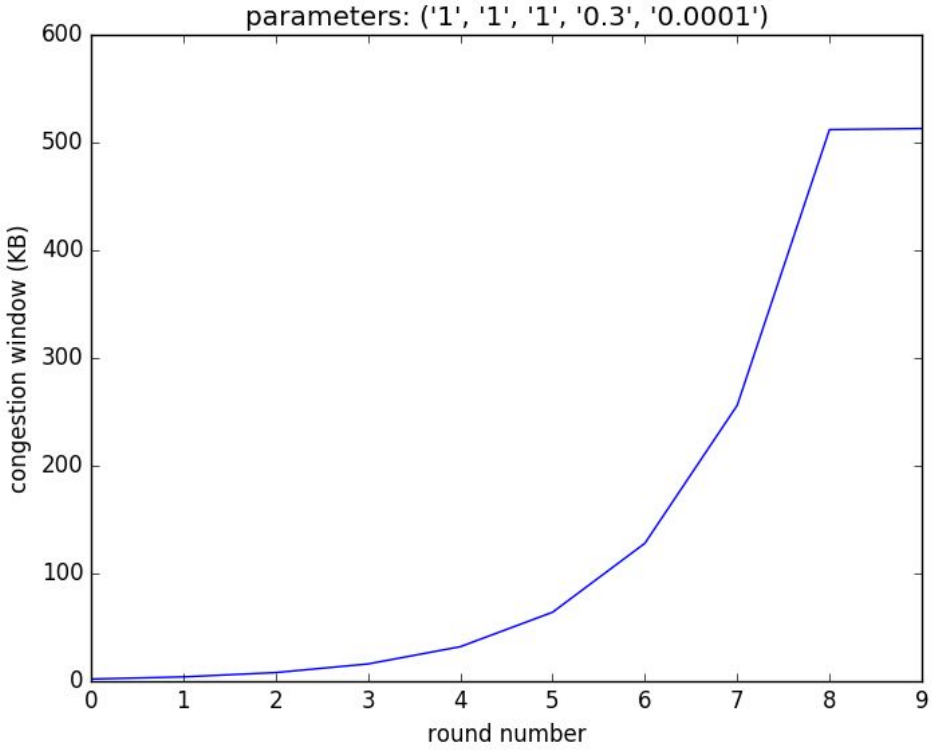

parameters: ('1', '1', '0.5', '0.3', '0.01')
congestion window (KB)
round number
0
5
10
15
20
25
30
0
10
20
30
40
50
60
70

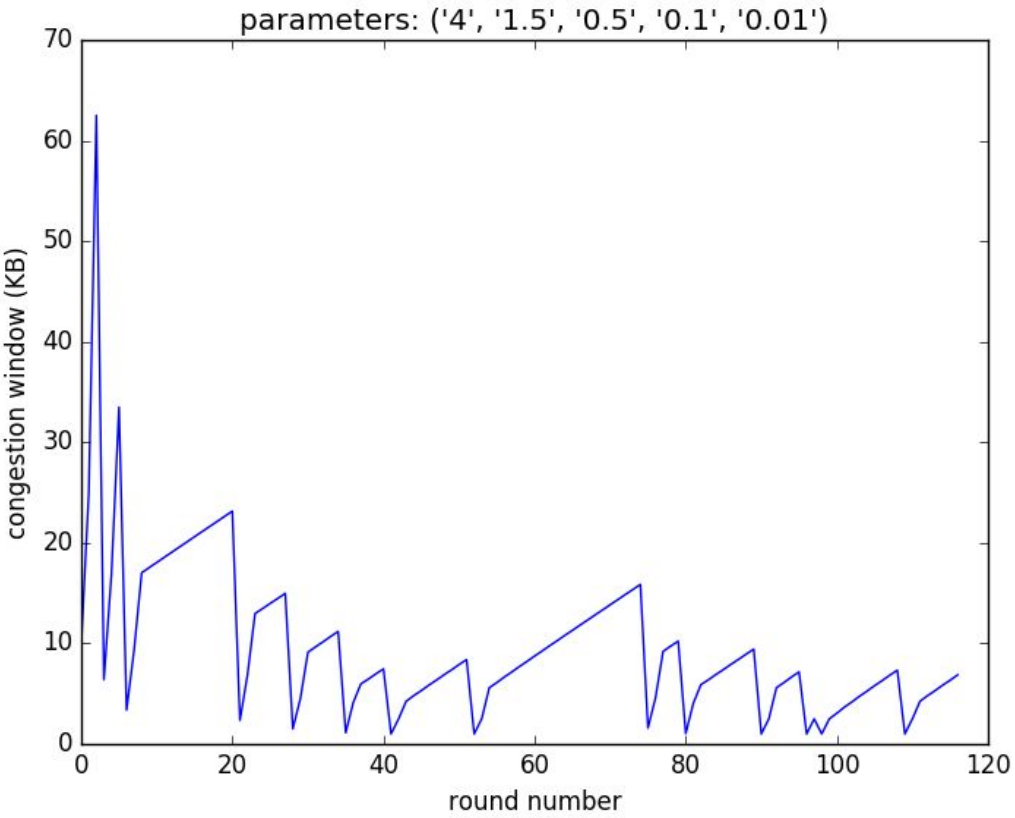

parameters: ('1', '1', '0.5', '0.3', '0.0001')
congestion window (KB)
round number
0
100
200
300
400
500
600
0
1
2
3
4
5
6
7
8
9

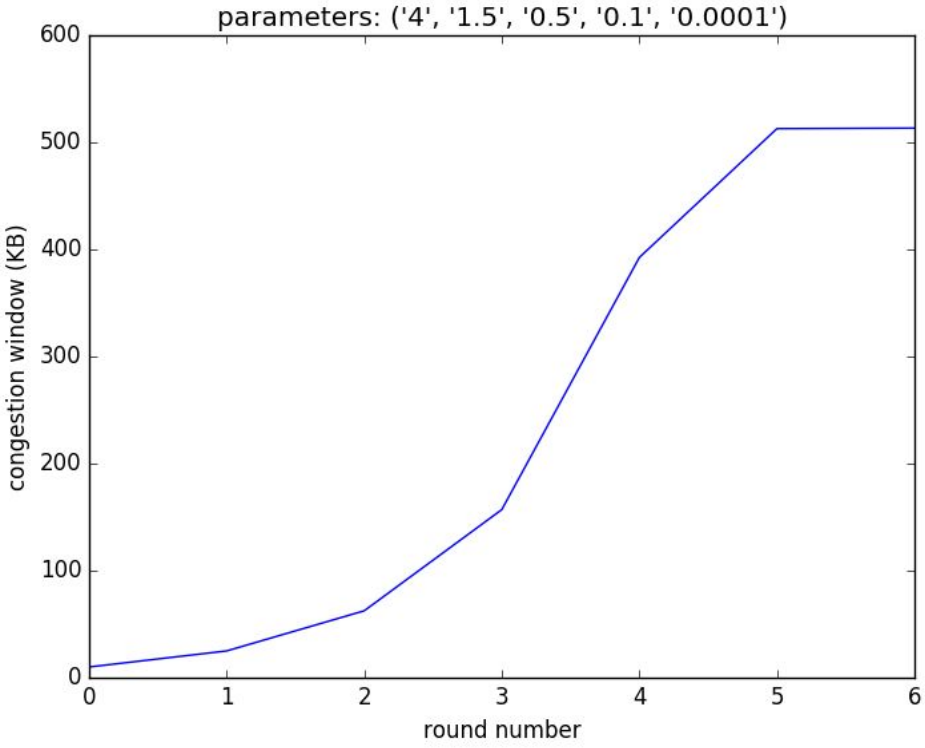

parameters: ('1', '1', '1', '0.1', '0.01')
congestion window (KB)
round number
0
5
10
15
20
25
30
0
20
40
60
80
100
120

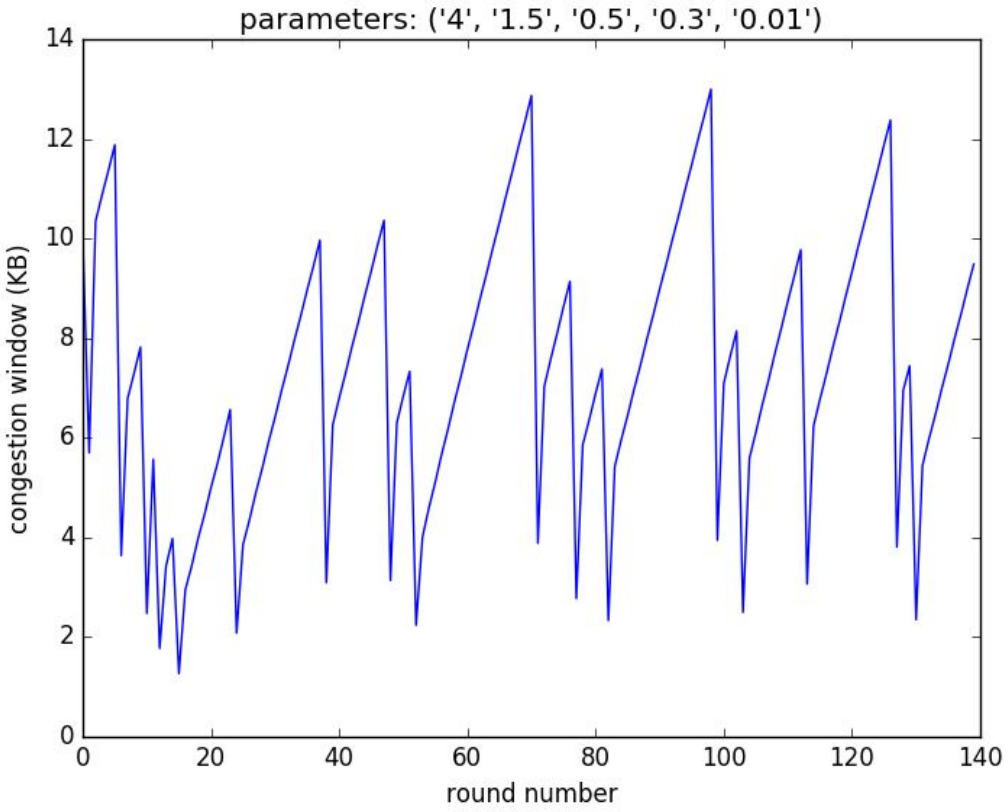

parameters: ('1', '1', '1', '0.1', '0.0001')
congestion window (KB)
round number
0
100
200
300
400
500
600
0
1
2
3
4
5
6
7
8
9

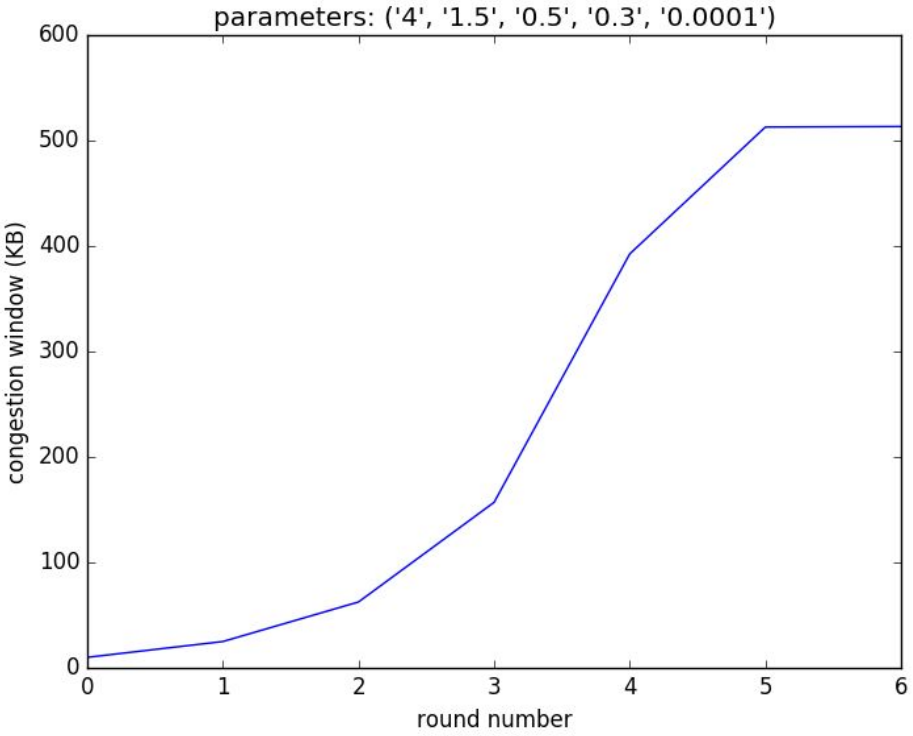

parameters: ('1', '1', '1', '0.3', '0.01')
congestion window (KB)
round number
0
20
40
60
80
100
120
140
0
10
20
30
40
50
60
70

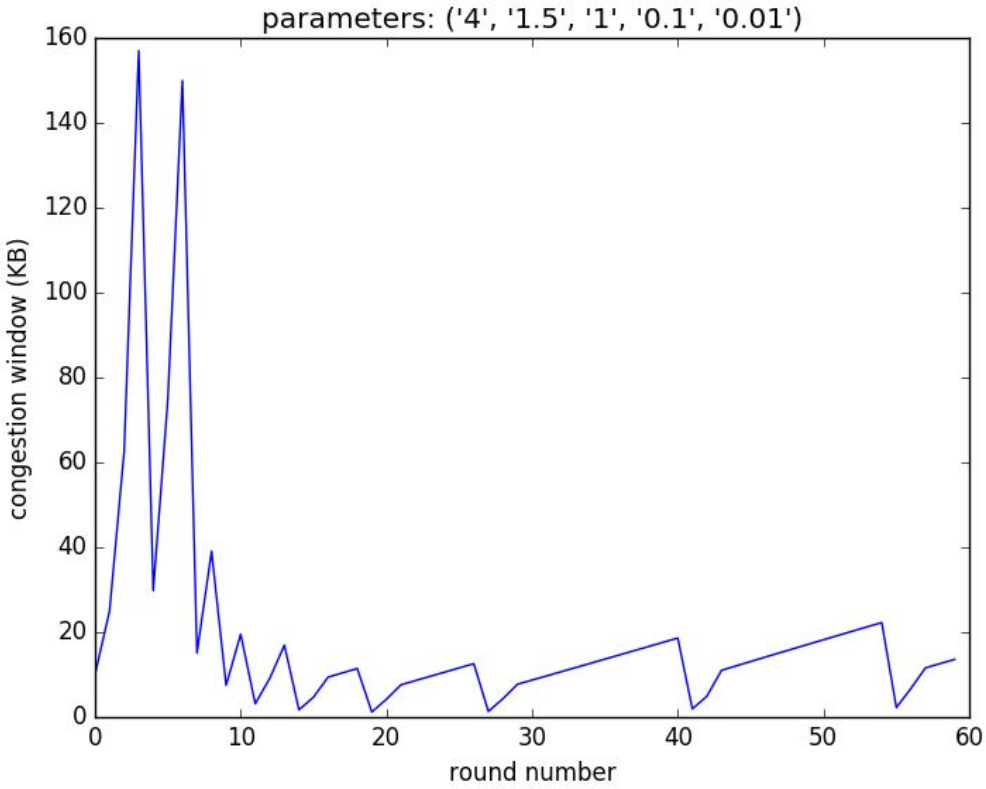

parameters: ('1', '1', '1', '0.3', '0.0001')
congestion window (KB)
round number
0
100
200
300
400
500
600
0
1
2
3
4
5
6
7
8
9

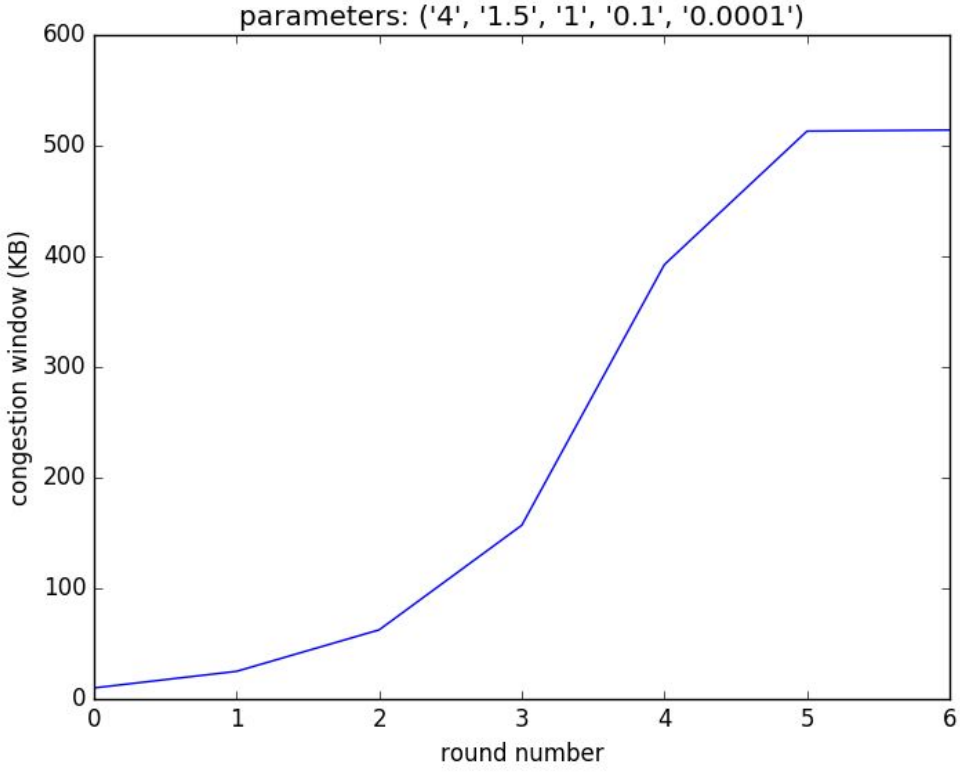

parameters: ('4', '1.5', '0.5', '0.1', '0.01')
congestion window (KB)
round number
0
10
20
30
40
50
60
70
0
20
40
60
80
100
120

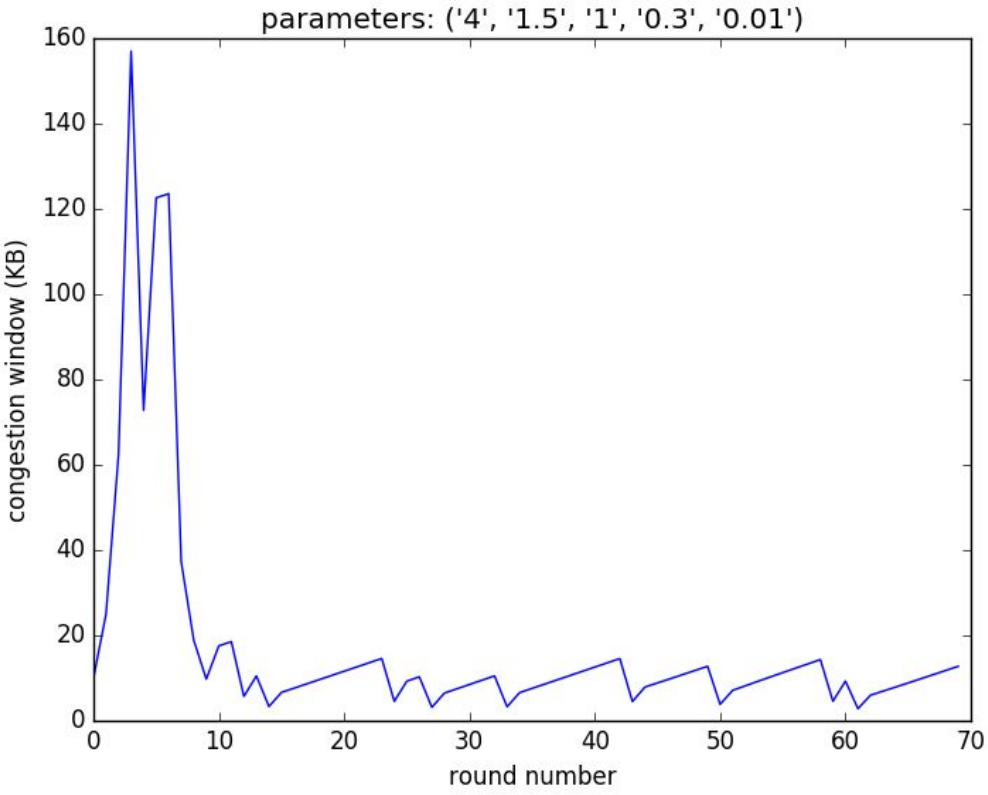

parameters: ('4', '1.5', '0.5', '0.1', '0.0001')
congestion window (KB)
round number
0
100
200
300
400
500
600
0
1
2
3
4
5
6

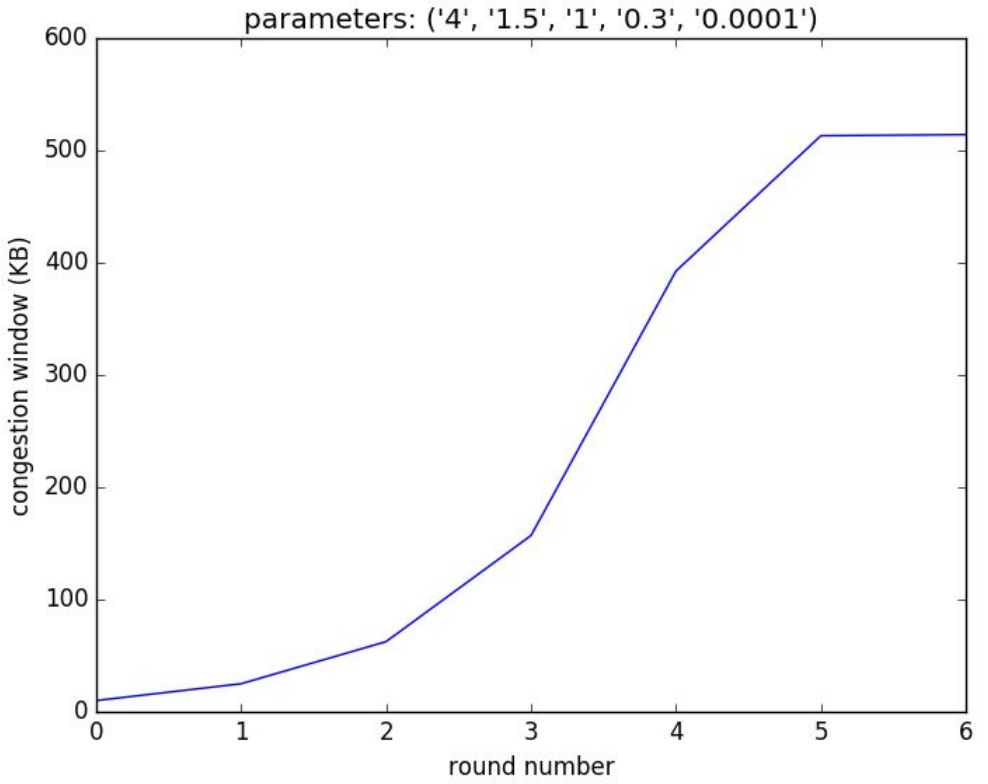

parameters: ('4', '1.5', '0.5', '0.3', '0.01')
congestion window (KB)
round number
0
2
4
6
8
10
12
14
0
20
40
60
80
100
120
140

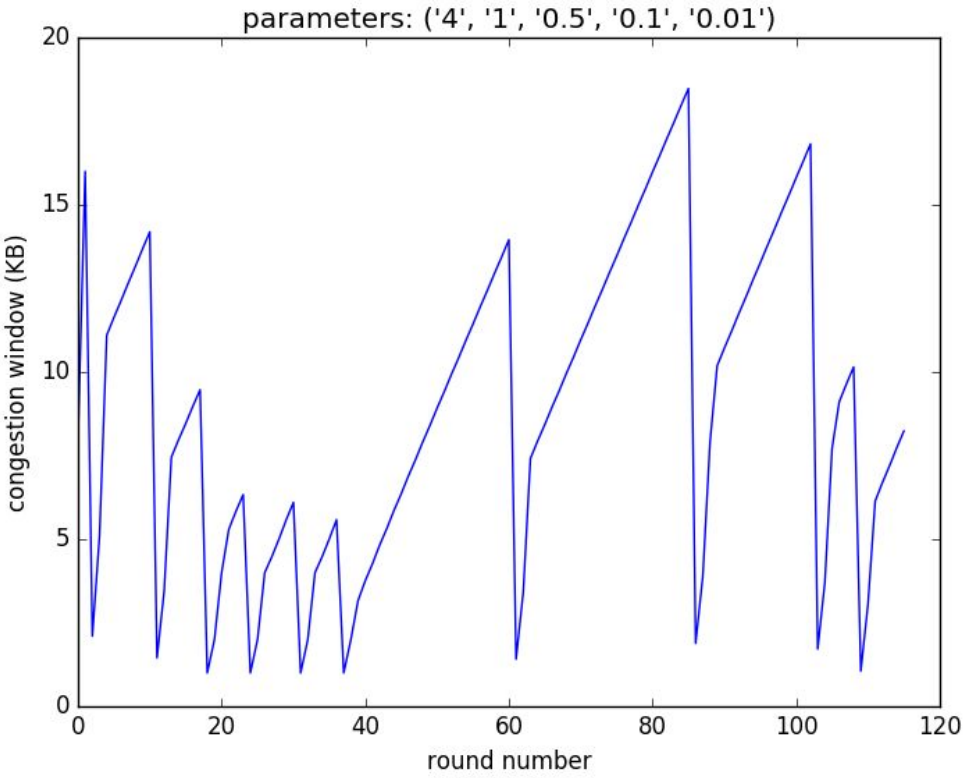

parameters: ('4', '1.5', '0.5', '0.3', '0.0001')
congestion window (KB)
round number
0
100
200
300
400
500
600
0
1
2
3
4
5
6

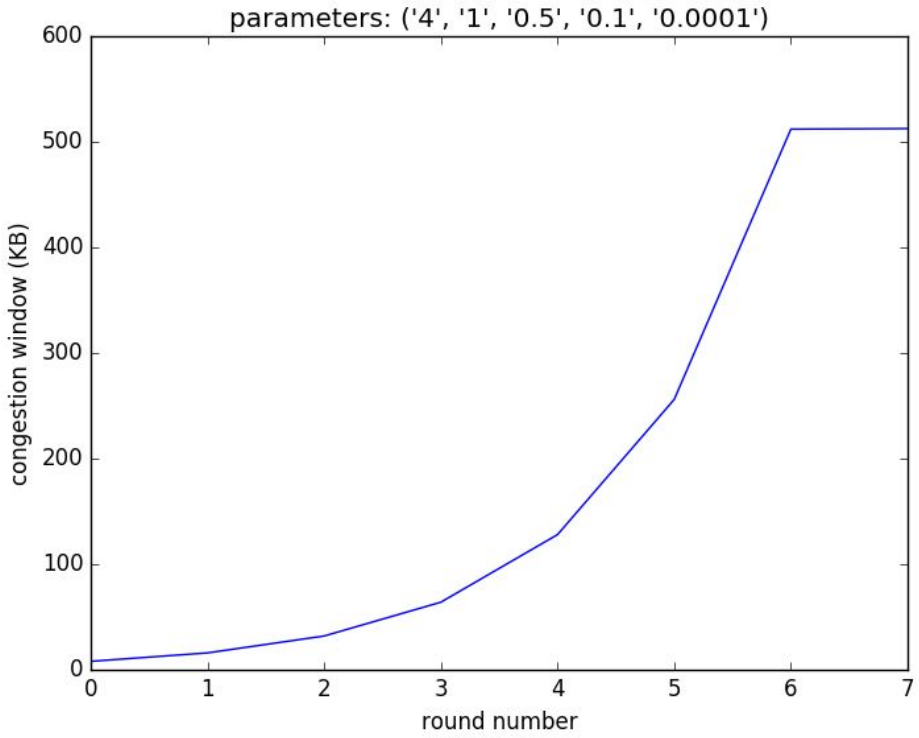

parameters: ('4', '1.5', '1', '0.1', '0.01')
congestion window (KB)
round number
0
20
40
60
80
100
120
140
160
0
10
20
30
40
50
60

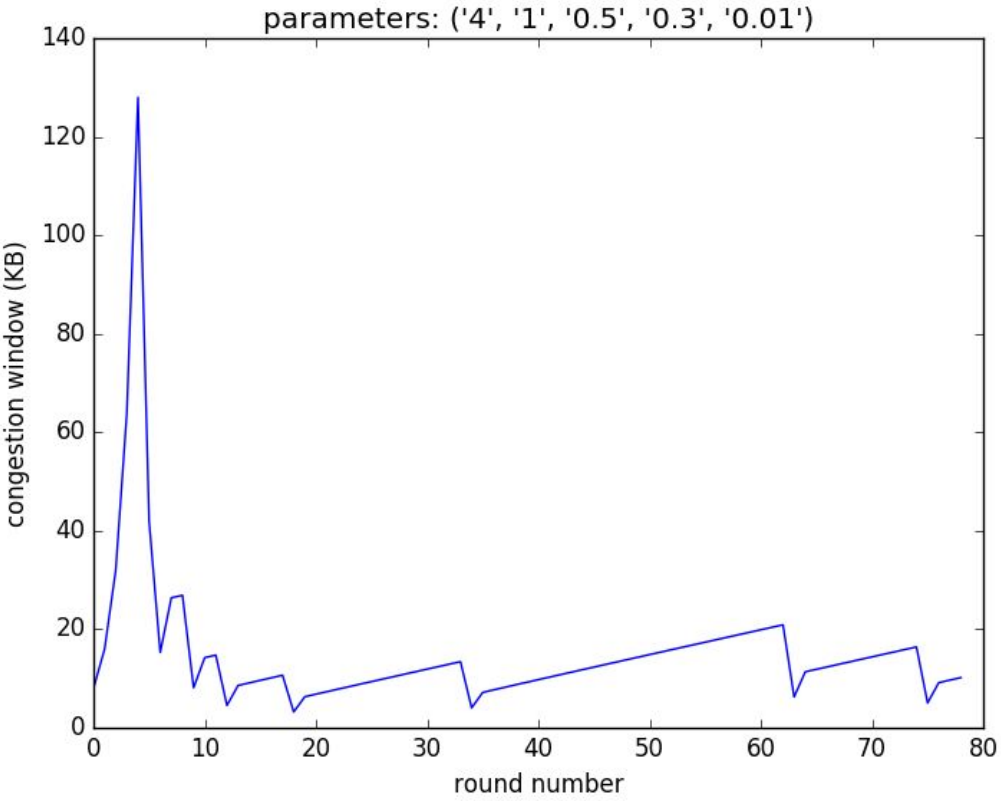

parameters: ('4', '1.5', '1', '0.1', '0.0001')
congestion window (KB)
round number
0
100
200
300
400
500
600
0
1
2
3
4
5
6

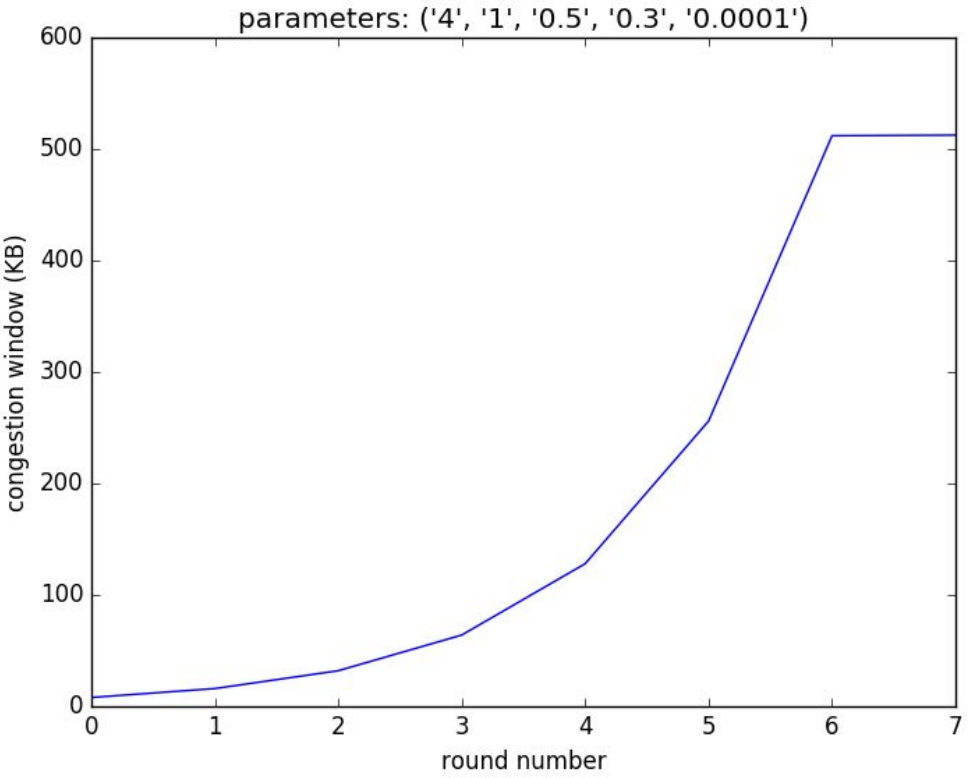

parameters: ('4', '1.5', '1', '0.3', '0.01')
congestion window (KB)
round number
0
20
40
60
80
100
120
140
160
0
10
20
30
40
50
60
70

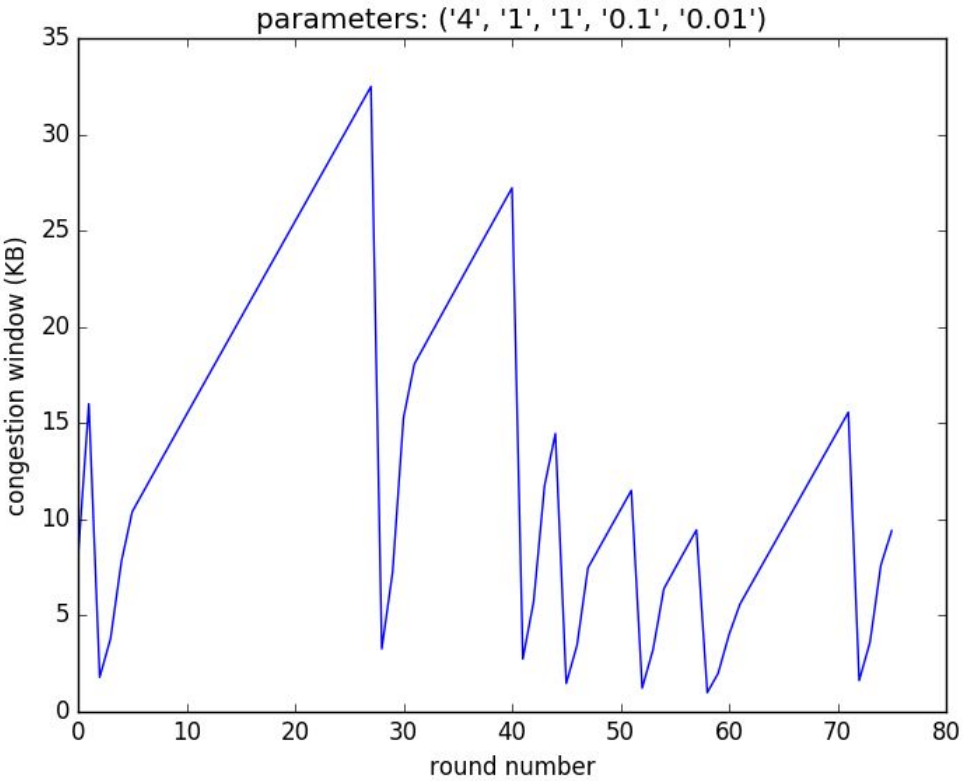

parameters: ('4', '1.5', '1', '0.3', '0.0001')
congestion window (KB)
round number
0
100
200
300
400
500
600
0
1
2
3
4
5
6

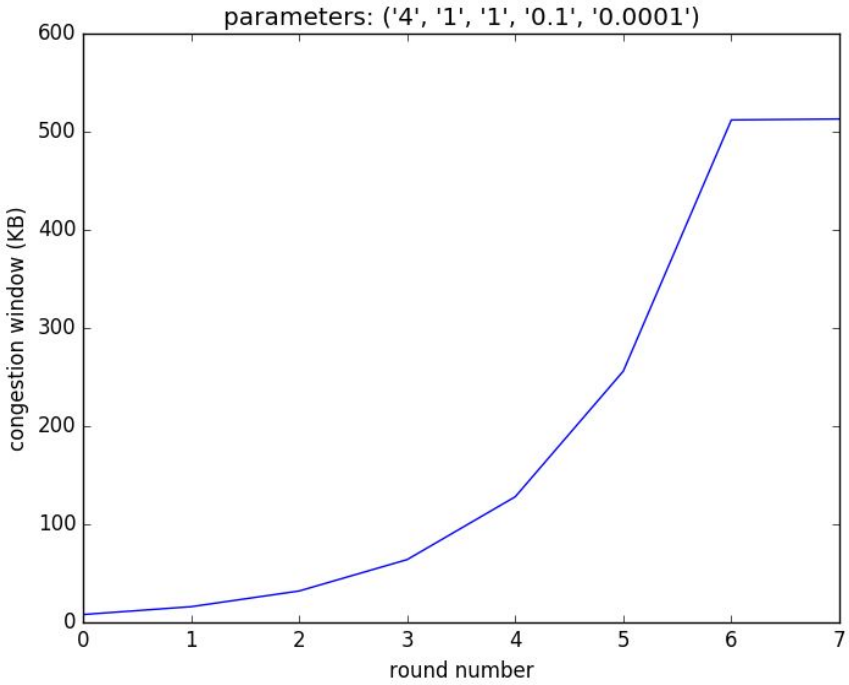

parameters: ('4', '1', '0.5', '0.1', '0.01')
congestion window (KB)
round number
0
5
10
15
20
0
20
40
60
80
100
120

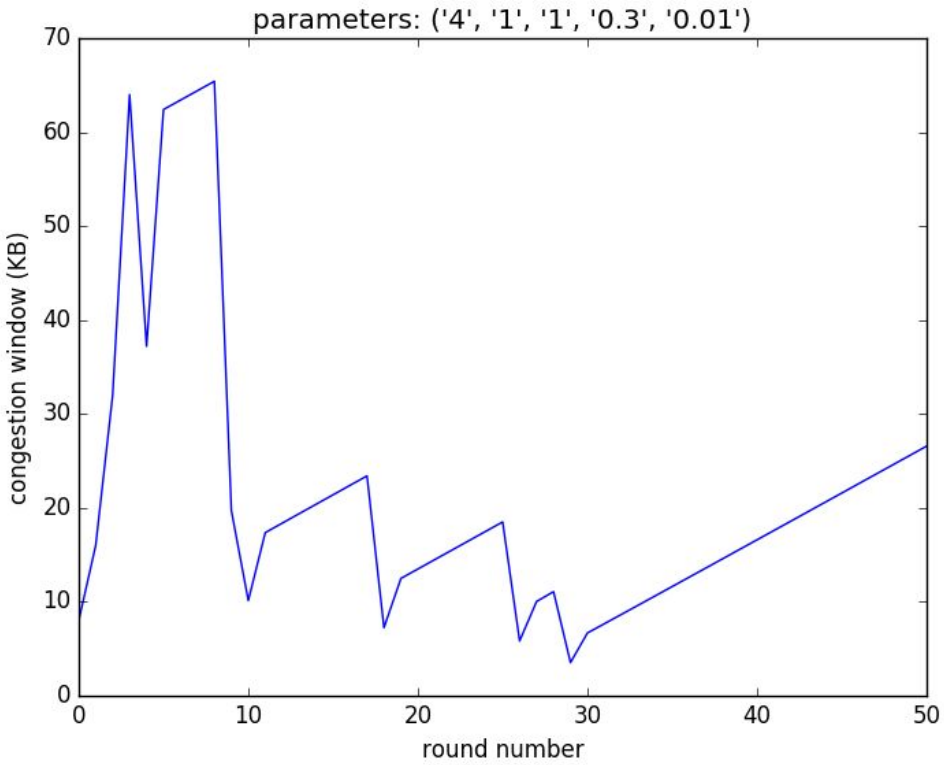

parameters: ('4', '1', '0.5', '0.1', '0.0001')
congestion window (KB)
round number
0
100
200
300
400
500
600
0
1
2
3
4
5
6
7

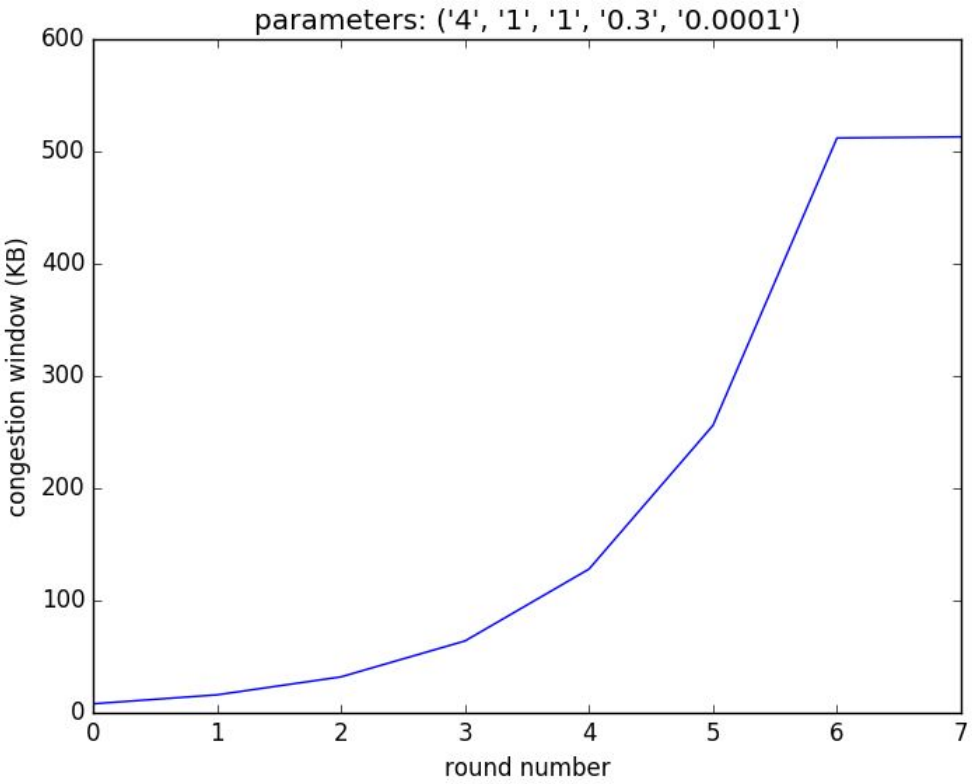

parameters: ('4', '1', '0.5', '0.3', '0.01')
congestion window (KB)
round number
0
20
40
60
80
100
120
140
0
10
20
30
40
50
60
70
80


parameters: ('4', '1', '0.5', '0.3', '0.0001')
congestion window (KB)
round number
0
100
200
300
400
500
600
0
1
2
3
4
5
6
7


parameters: ('4', '1', '1', '0.1', '0.01')
congestion window (KB)
round number
0
5
10
15
20
25
30
35
0
10
20
30
40
50
60
70
80


parameters: ('4', '1', '1', '0.1', '0.0001')
congestion window (KB)
round number
0
100
200
300
400
500
600
0
1
2
3
4
5
6
7


parameters: ('4', '1', '1', '0.3', '0.01')
congestion window (KB)
round number
0
10
20
30
40
50
60
70


parameters: ('4', '1', '1', '0.3', '0.0001')
congestion window (KB)
round number
0
100
200
300
400
500
600
1
2
3
4
5
6
7