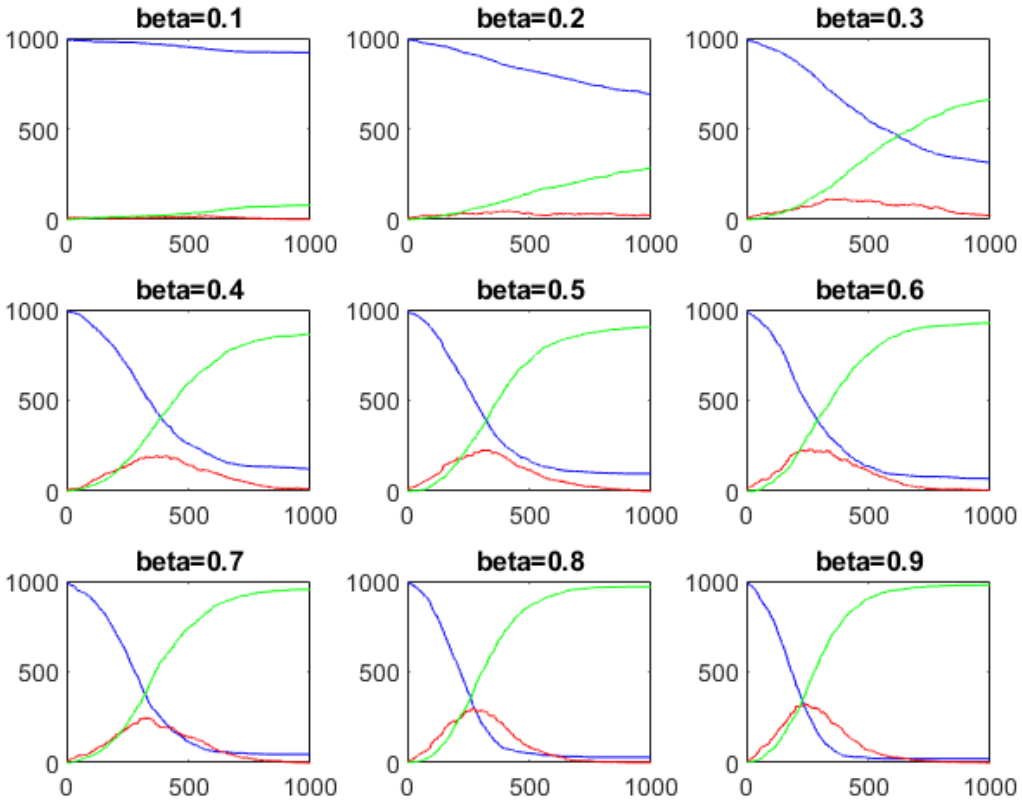
11.1

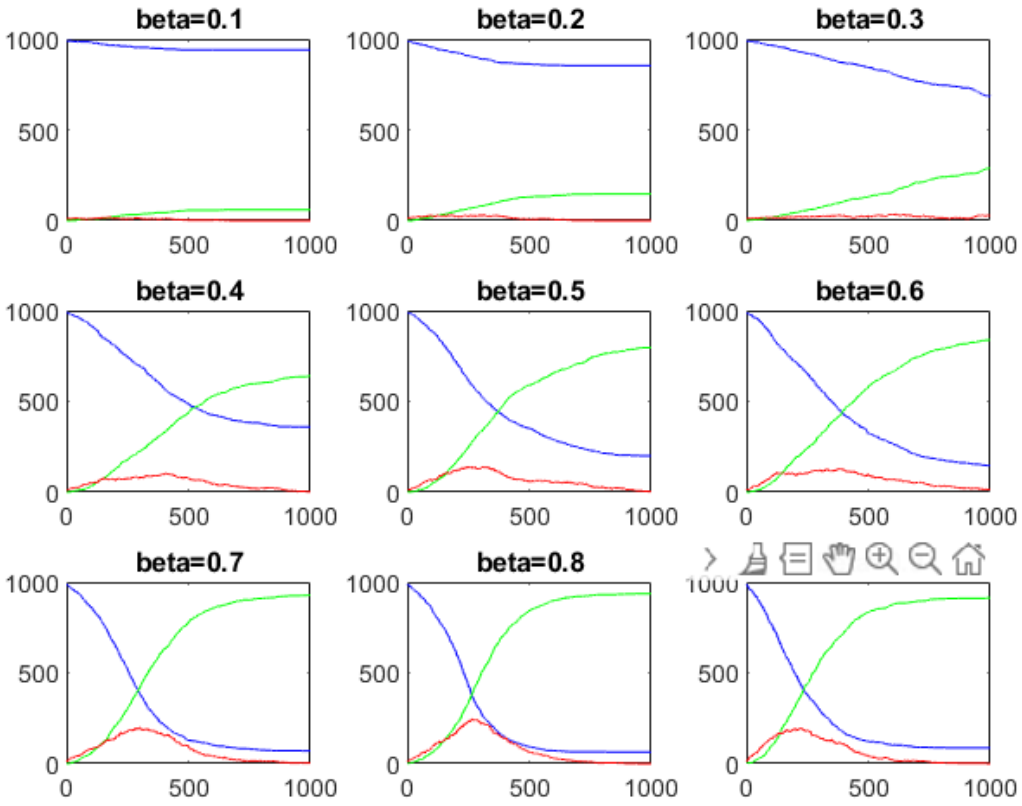
a)-c)

This is for gamma=0.01

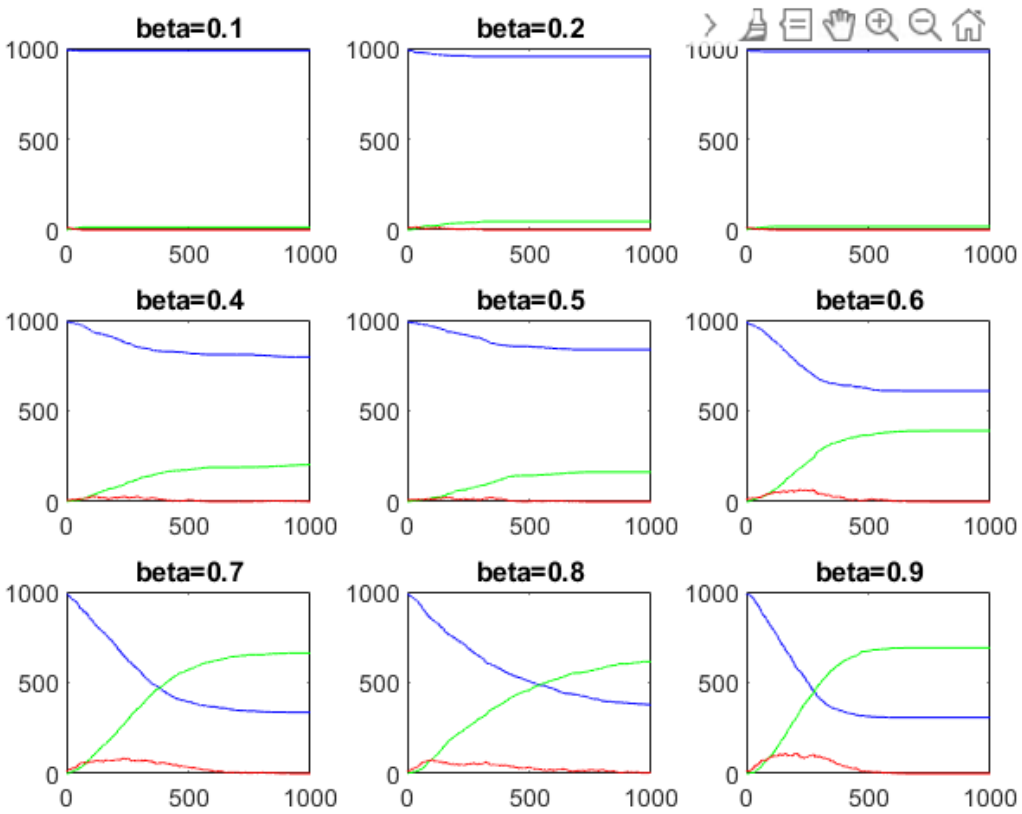


d)

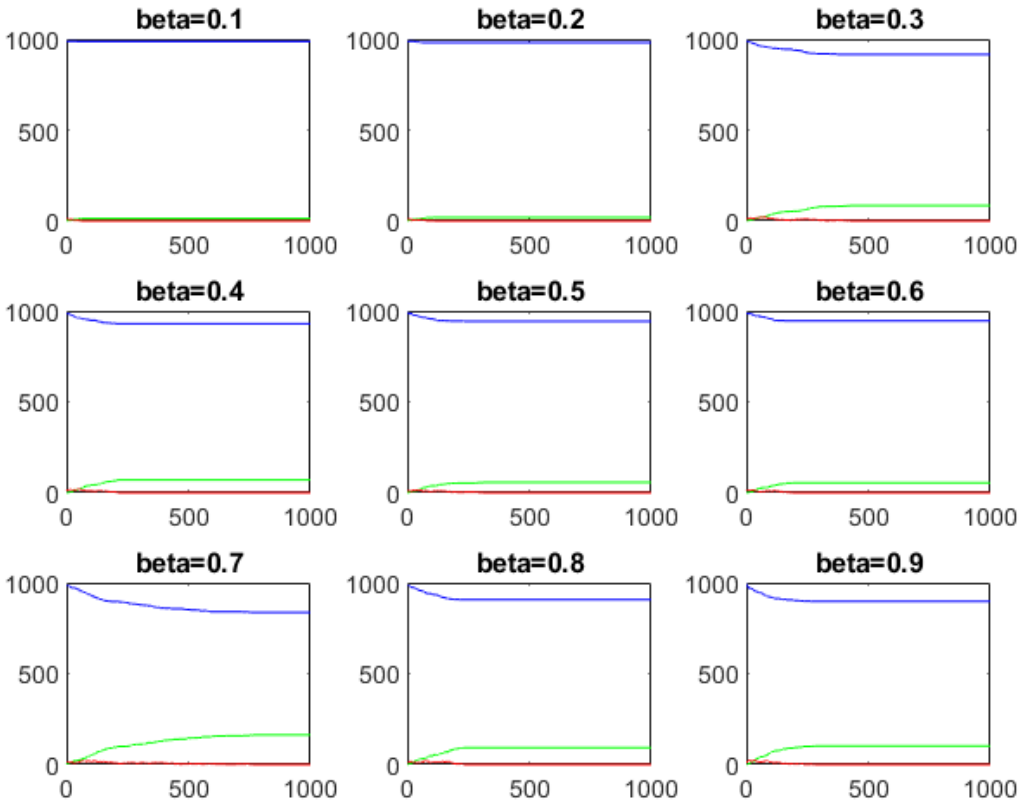
gamma=0.015


beta=0.1
beta=0.2
beta=0.3
beta=0.4
beta=0.5
beta=0.6
beta=0.7
beta=0.8
1000
500
0
0
500
1000

Gamma=0.02:

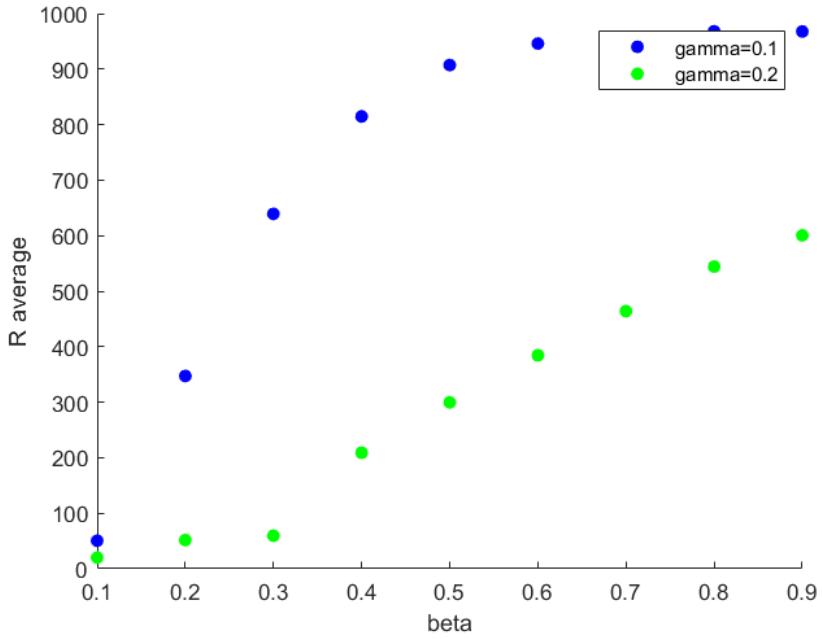

beta=0.1
beta=0.2
beta=0.4
beta=0.5
beta=0.6
beta=0.7
beta=0.8
beta=0.9
1000
500
0
0
500
1000

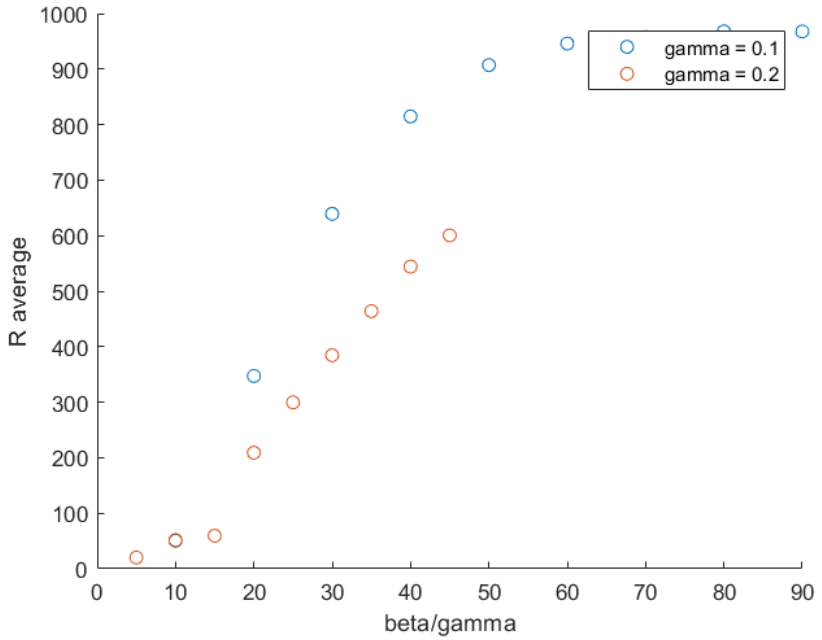
Gamma=0.03



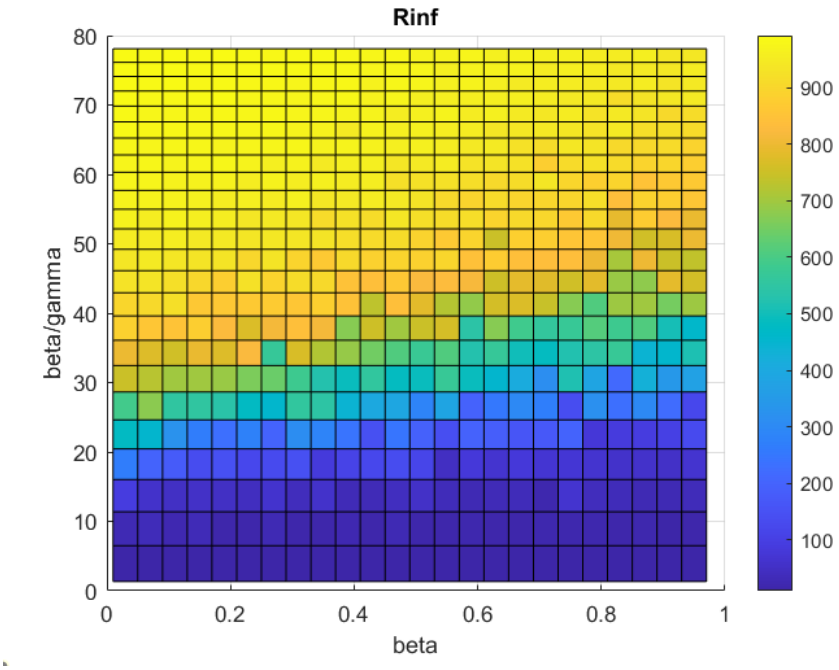
11.2

a)-b)


gamma=0.1
gamma=0.2
R average
beta
0
100
200
300
400
500
600
700
800
900
1000
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9


gamma = 0.1
gamma = 0.2
R average
beta/gamma
0
100
200
300
400
500
600
700
800
900
1000
0
10
20
30
40
50
60
70
80
90

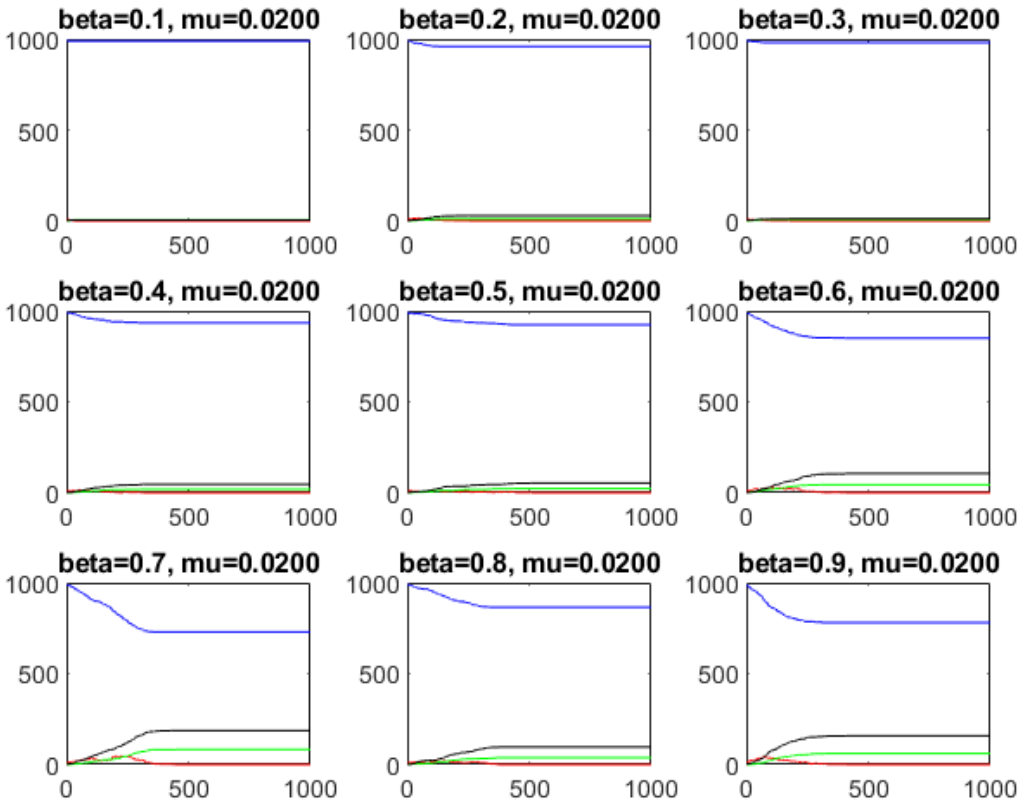
c)



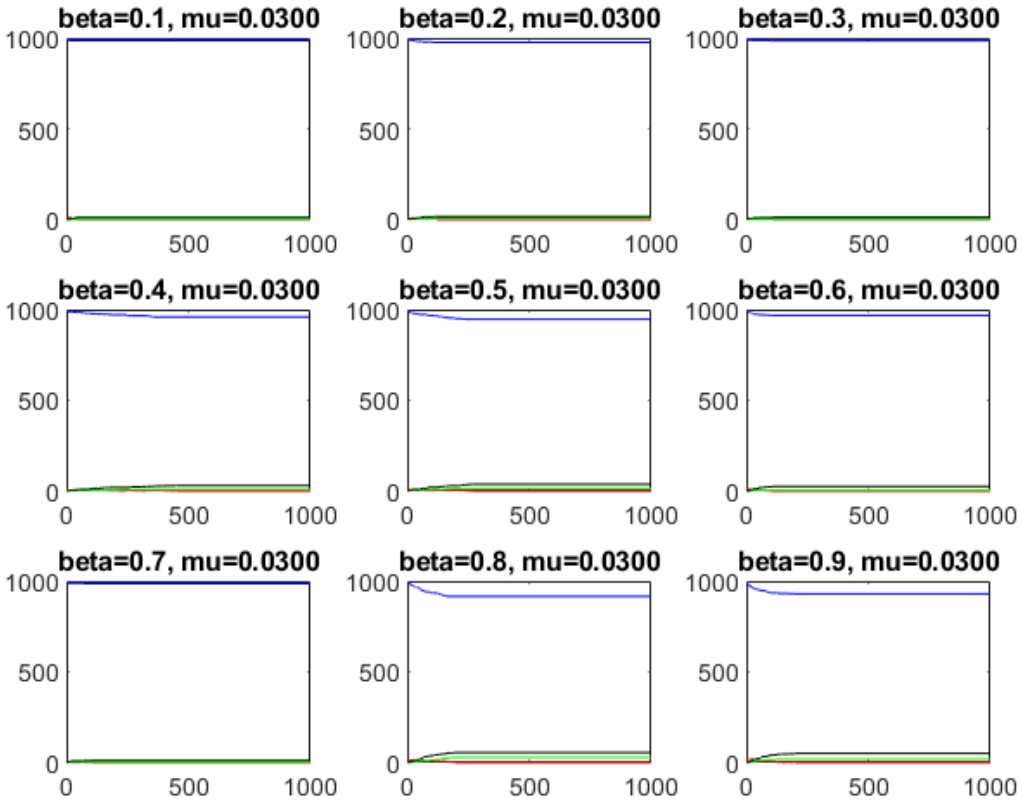
11.3)

Gamma=0.01 for all

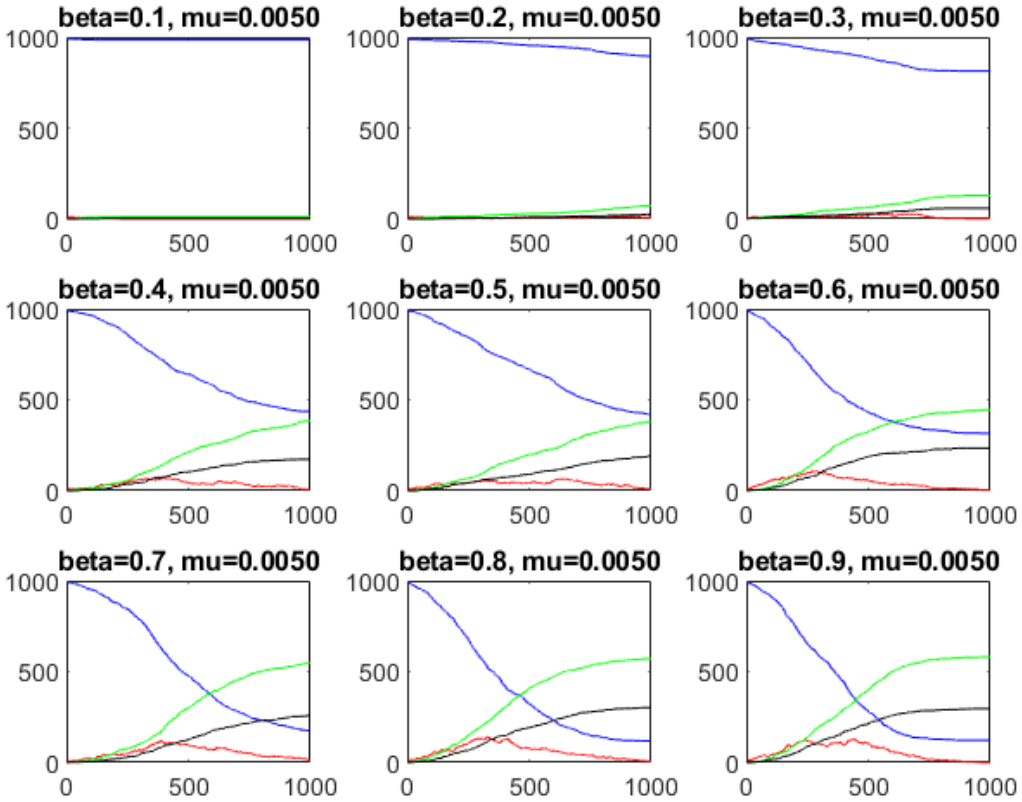
Mu=0.02



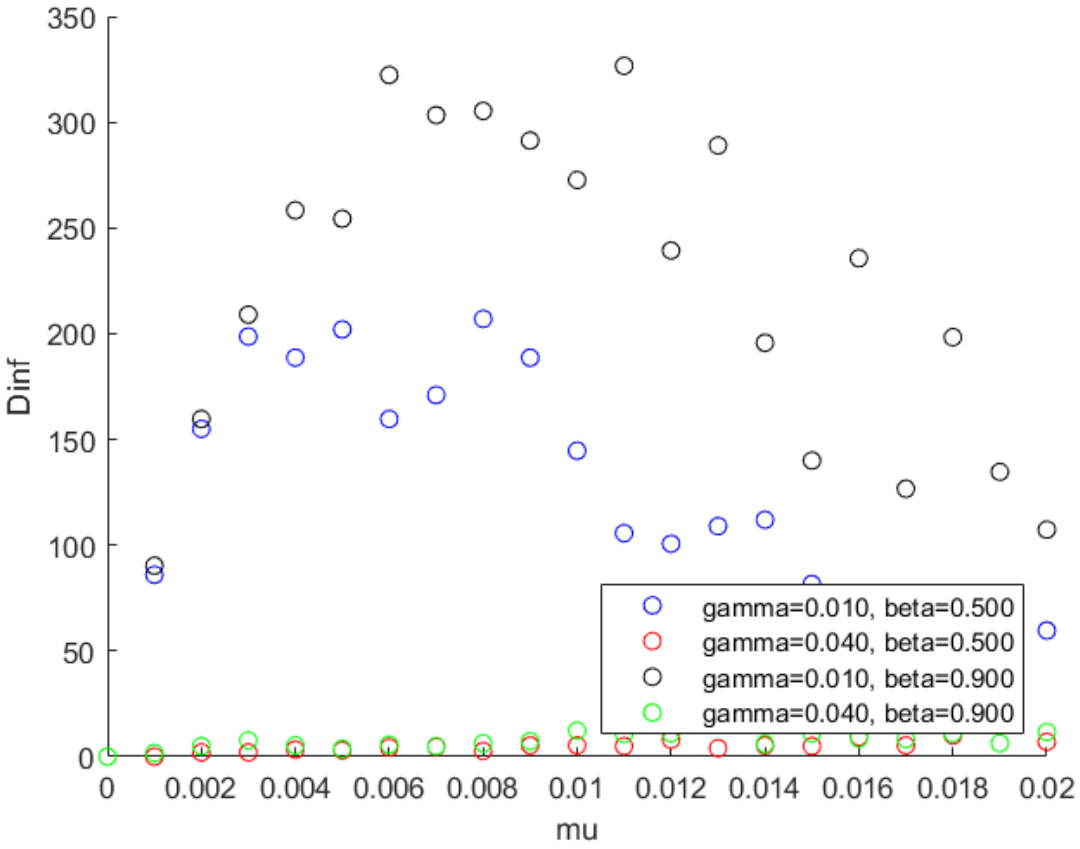
Mu=0.03

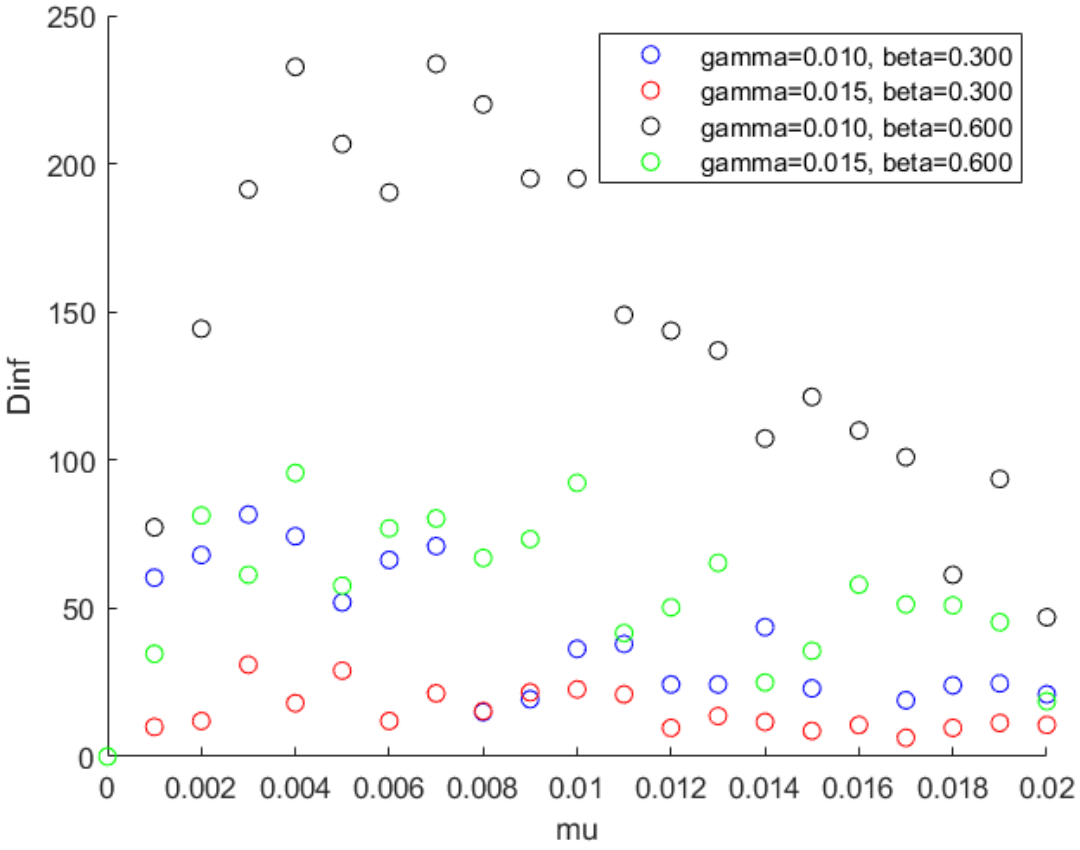

beta=0.1, mu=0.0300
beta=0.2, mu=0.0300
beta=0.3, mu=0.0300
beta=0.4, mu=0.0300
beta=0.5, mu=0.0300
beta=0.6, mu=0.0300
beta=0.7, mu=0.0300
beta=0.8, mu=0.0300
beta=0.9, mu=0.0300
0
500
1000

Mu=0.005


beta=0.1, mu=0.0050
beta=0.2, mu=0.0050
beta=0.3, mu=0.0050
beta=0.4, mu=0.0050
beta=0.5, mu=0.0050
beta=0.6, mu=0.0050
beta=0.7, mu=0.0050
beta=0.8, mu=0.0050
beta=0.9, mu=0.0050
0
500
1000

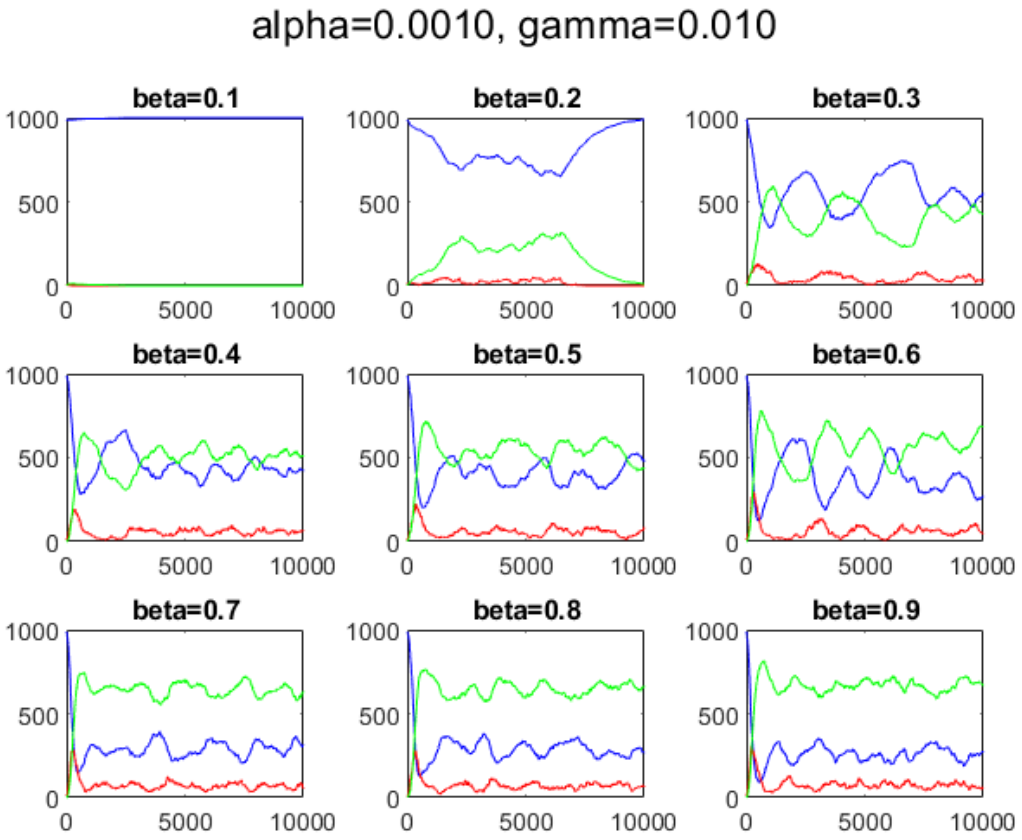
b)


Dinf
mu
gamma=0.010, beta=0.500
gamma=0.040, beta=0.500
gamma=0.010, beta=0.900
gamma=0.040, beta=0.900

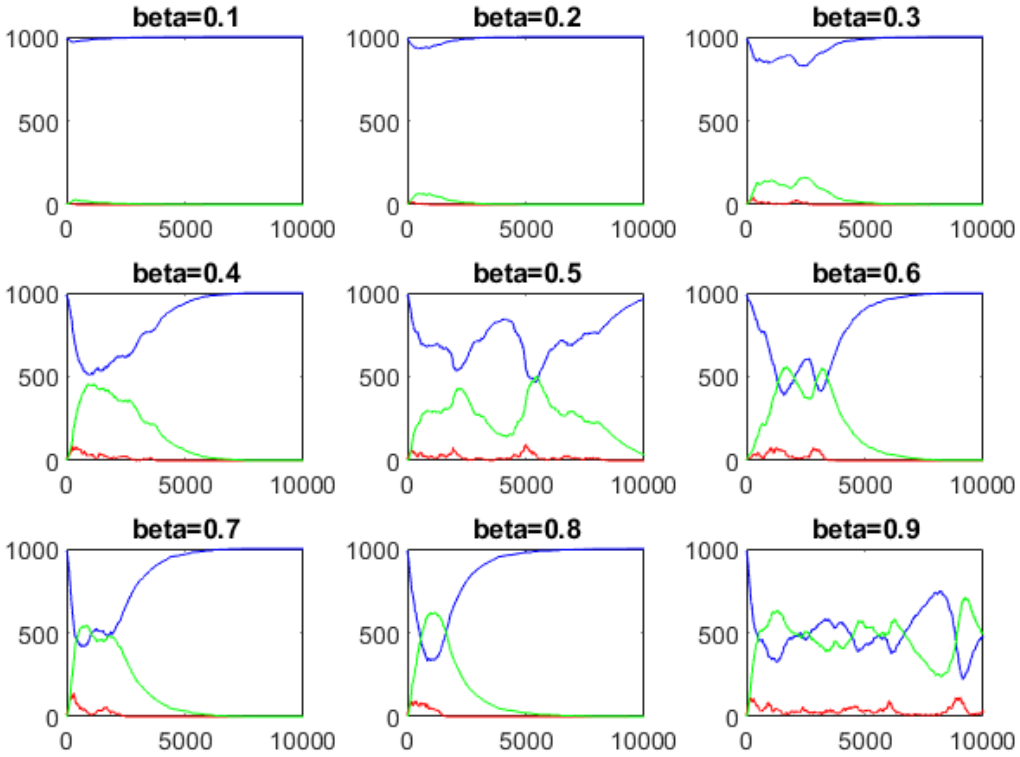

Dinf
mu
gamma=0.010, beta=0.300
gamma=0.015, beta=0.300
gamma=0.010, beta=0.600
gamma=0.015, beta=0.600

11.4

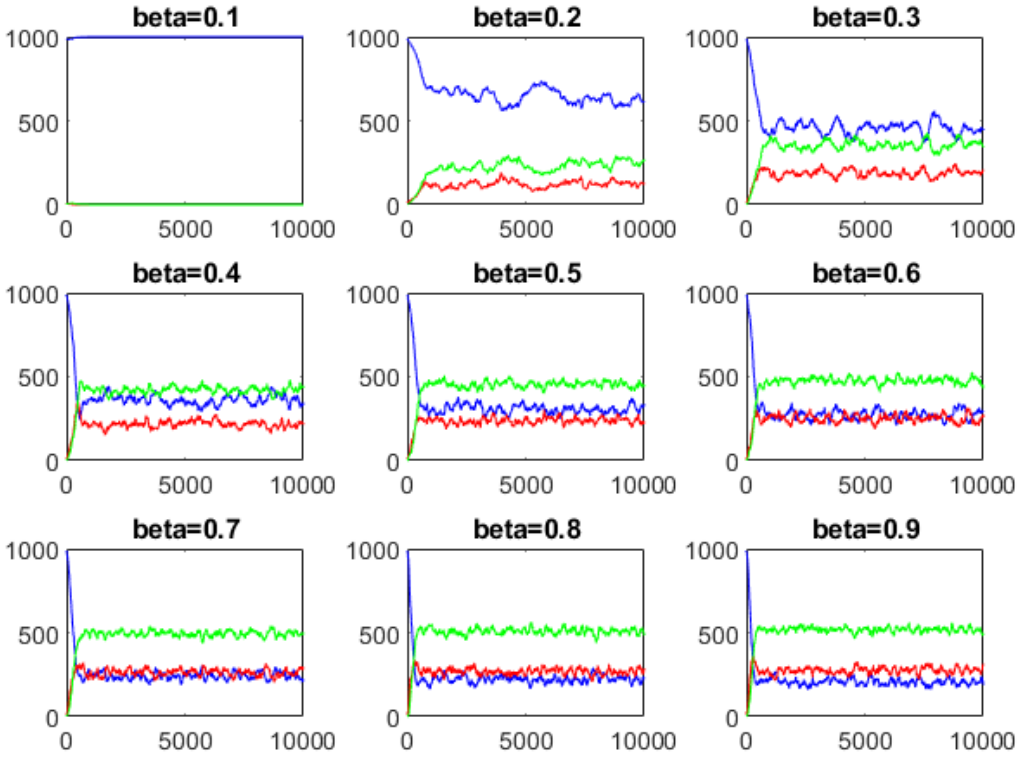
a)-b)


alpha=0.0010, gamma=0.010
beta=0.1
beta=0.2
beta=0.3
beta=0.4
beta=0.5
beta=0.6
beta=0.7
beta=0.8
beta=0.9
0
500
1000
0
5000
10000

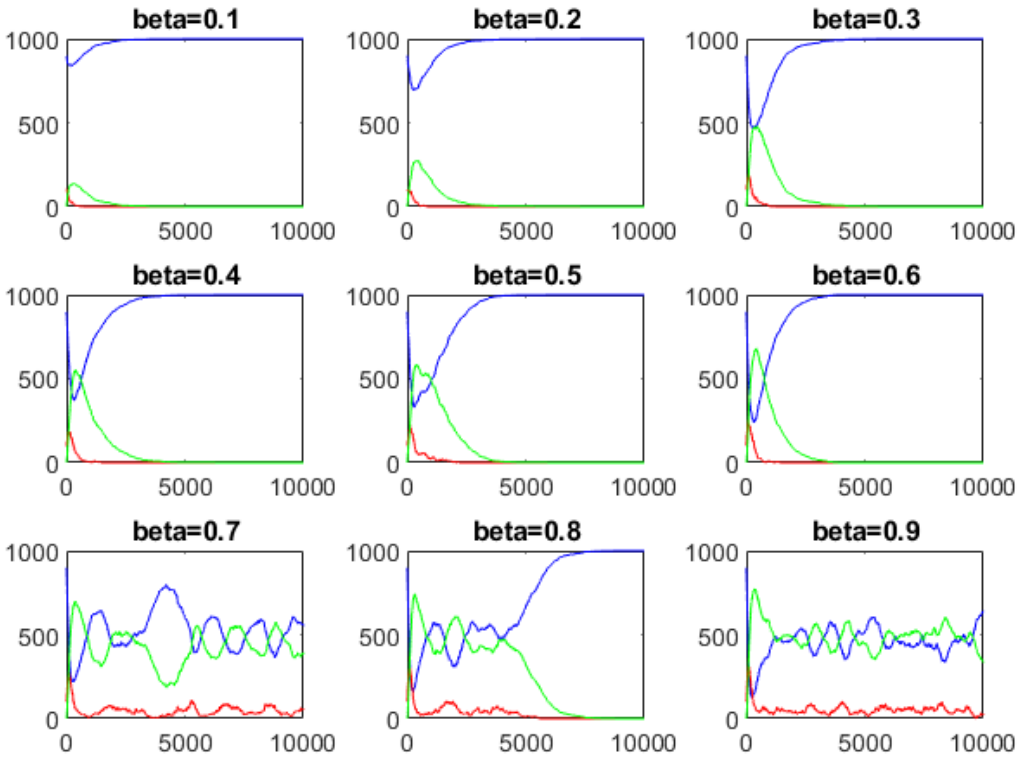
alpha=0.0010, gamma=0.015



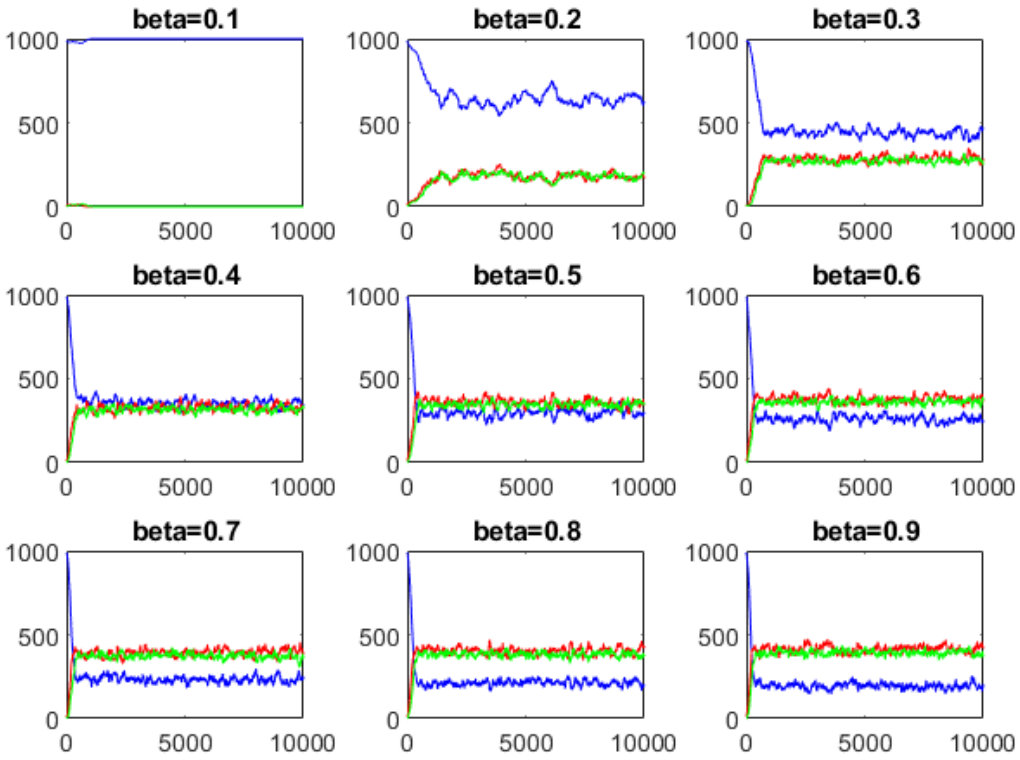
alpha=0.0050, gamma=0.010



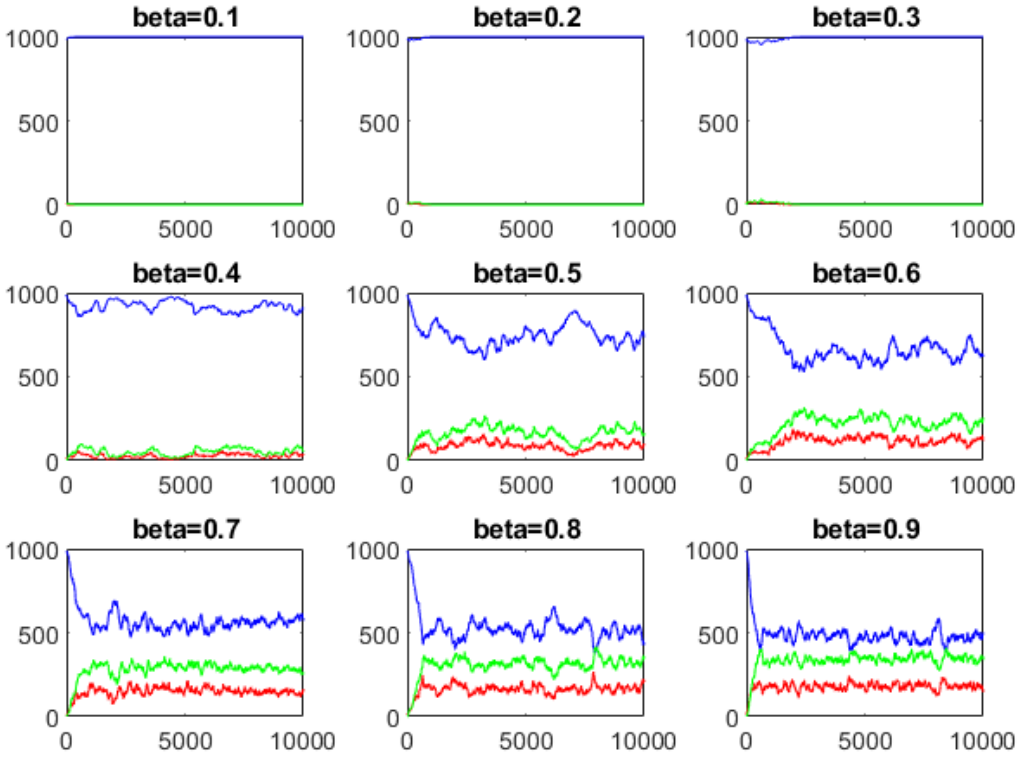
alpha=0.0015, gamma=0.015



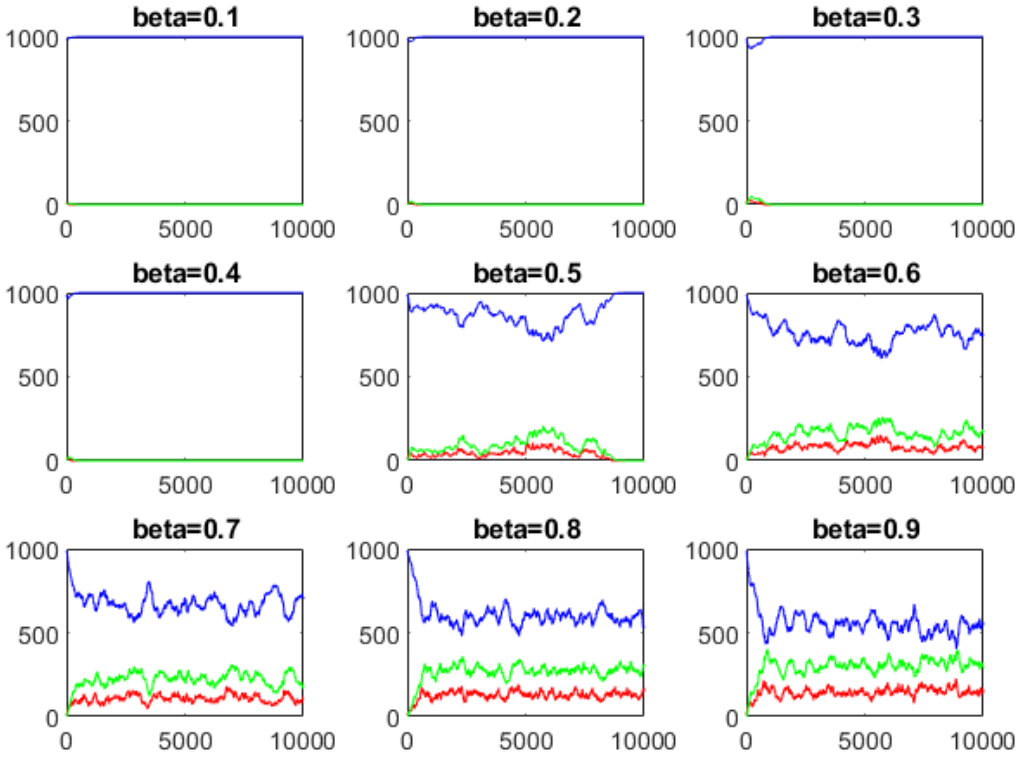
alpha=0.0100, gamma=0.010

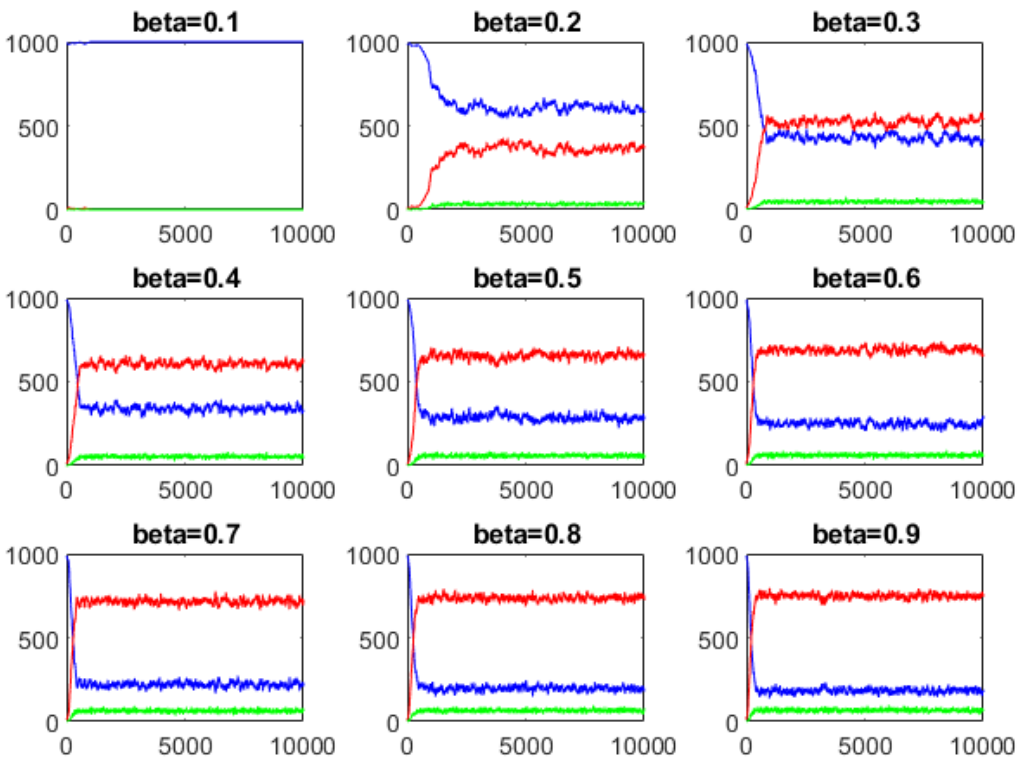


alpha=0.0100, gamma=0.020



alpha=0.0100, gamma=0.022




alpha=0.1000, gamma=0.010
beta=0.1
beta=0.2
beta=0.3
beta=0.4
beta=0.5
beta=0.6
beta=0.7
beta=0.8
beta=0.9
1000
500
0
0
5000
10000