t=0:1:1000;

size\_vector=size(t,2);

data = zeros(100,6)

for j=1:100

S=zeros(1,size\_vector);

I=zeros(1,size\_vector);

R=zeros(1,size\_vector);

N=1;

S(1)=0.9999;

I(1)=1-S(1);

R(1)=0;

pd\_beta = makedist('Normal','mu',0.25,'sigma',0.0625);

pd\_gama = makedist('Normal','mu',0.1,'sigma',0.025);

for i=1:1000

beta=random(pd\_beta);

if (beta<0)

beta=0;

end

gama=random(pd\_gama);

if (gama<0)

gama=0;

end

S(i+1)=S(i)-beta/N\*S(i)\*I(i);

I(i+1)=I(i)+(beta/N\*S(i)\*I(i)-gama\*I(i));

R(i+1)=R(i)+gama\*I(i);

end

dataEndperiod=[j,beta,gama,S(i+1),I(i+1),R(i+1)];

data(j,:) = [dataEndperiod];

plot(t,R,'b',t,I,'r',t,S,'g')

hold on

end

xlswrite('data.xlsx',data,2)