# The replicator dynamics equation

function dydt=CGB(t,y,Q,p,w,r,I1,I2,S1,S2,K1,K2,C,L,T1,T2,T3,M,H1,H2)

dydt=zeros(3,1);

dydt(1)=-y(1)\*(y(1)-1)\*(H1-I1+K1-S1+y(3)\*y(2)\*T1);

dydt(2)=-y(2)\*(y(2)-1)\*(H2-I2+K2-S2+y(1)\*y(3)\*T2);

dydt(3)=-y(3)\*(y(3)-1)\*(L-C+M+y(1)\*y(2)\*T3);

end

# Evolutionary Results of the Initial Strategy

clc,clear;

figure('color',[1 1 1]);

Q=50,p=5,w=3,r=0.1,I1=30,I2=50,S1=15,S2=25,K1=30,K2=45,C=30,T1=10,T2=20,T3=10,L=20,M=15,H1=20,H2=20;

for i=0.1:0.2:1

for j=0.1:0.2:1

for k=0.1:0.2:1

[t,y]=ode45(@(t,y) CGB(t,y,Q,p,w,r,I1,I2,S1,S2,K1,K2,C,L,T1,T2,T3,M,H1,H2),[0 50],[i j k]);

plot3(y(:,1),y(:,2),y(:,3),'linewidth',1);

set(gca,'XTick',[0:0.2:1],'YTick',[0:0.2:1],'ZTick',[0:0.2:1])

hold on

axis([0 1 0 1 0 1])

view([45 10])

end

end

end

grid on

hold on

set(0,'defaultfigurecolor','w')

xlabel('x','Rotation',0);

ylabel('y','Rotation',0);

zlabel('z','Rotation',360,'position',[0 0 1.05]);

# The tripartite strategy evolutionary trajectorie*s. ()*

clc,clear;

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Q=50,p=0.5,w=3,r=0.1,I1=30,I2=50,S1=15,S2=25,K1=30,K2=45,C=30,T1=10,T2=20,T3=10,L=20,M=15,H1=20,H2=20;

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