```
t=linspace(0,20,1000);
A=[1,1];%因为 H(s)=1/(1+RCs),RC=1,
B=1;%所以根据公式能知晓 A=[1,1],B=1;
apos_k=zeros(1,5);
aneg_k=zeros(1,5);
s=zeros(5,1000);
for k=(1:5)
   apos_k(k)=(1-cos(pi*k))*sin(pi*k/2)/(pi*k);
   aneg_k(k)=(1-cos(pi*(-k)))*sin(pi*(-k)/2)/(pi*(-k));
   s(k,:)=apos_k(k)*exp(1i*k*t)+aneg_k(k)*exp(1i*(-k)*t);
   y(k,:)=lsim(B,A,s(k,:),t)
end
```

```
y = 5×1000
    0.0000    0.0252    0.0500    0.0742    0.0979    0.1211    0.1438    0.1659 ···
         0         0         0         0         0         0         0         0
    0.0000   -0.0084   -0.0166   -0.0246   -0.0323   -0.0398   -0.0470   -0.0538
         0         0         0         0         0         0         0         0
    0.0000    0.0050    0.0099    0.0146    0.0191    0.0232    0.0270    0.0305
y = 5×1000
    0.0000    0.0252    0.0500    0.0742    0.0979    0.1211    0.1438    0.1659 ···
         0         0         0         0         0         0         0         0
    0.0000   -0.0084   -0.0166   -0.0246   -0.0323   -0.0398   -0.0470   -0.0538
         0         0         0         0         0         0         0         0
    0.0000    0.0050    0.0099    0.0146    0.0191    0.0232    0.0270    0.0305
y = 5×1000
    0.0000    0.0252    0.0500    0.0742    0.0979    0.1211    0.1438    0.1659 ···
         0         0         0         0         0         0         0         0
    0.0000   -0.0084   -0.0166   -0.0246   -0.0323   -0.0398   -0.0470   -0.0538
         0         0         0         0         0         0         0         0
    0.0000    0.0050    0.0099    0.0146    0.0191    0.0232    0.0270    0.0305
y = 5×1000
    0.0000    0.0252    0.0500    0.0742    0.0979    0.1211    0.1438    0.1659 ···
         0         0         0         0         0         0         0         0
    0.0000   -0.0084   -0.0166   -0.0246   -0.0323   -0.0398   -0.0470   -0.0538
         0         0         0         0         0         0         0         0
    0.0000    0.0050    0.0099    0.0146    0.0191    0.0232    0.0270    0.0305
y = 5×1000
    0.0000    0.0252    0.0500    0.0742    0.0979    0.1211    0.1438    0.1659 ···
         0         0         0         0         0         0         0         0
    0.0000   -0.0084   -0.0166   -0.0246   -0.0323   -0.0398   -0.0470   -0.0538
         0         0         0         0         0         0         0         0
    0.0000    0.0050    0.0099    0.0146    0.0191    0.0232    0.0270    0.0305
```

```
bpos_k=apos_k/(1+1i);
bneg_k=aneg_k/(1+1i);
for k=(1:5)
   y_sim(k,:)=bpos_k(k)*exp(1i*k*t)+bneg_k(k)*exp(1i*(-k)*t);
end
subplot(5,1,1),plot(t(501:1000), y(1,501:1000));grid;hold on
plot(t(501:1000), y_sim(1,501:1000),'r');legend('y','y_sim')
```

警告: 复数 X 和/或 Y 参数的虚部已忽略。

```
subplot(5,1,2),plot(t(501:1000), y(2,501:1000));grid;hold on
plot(t(501:1000), y_sim(2,501:1000),'r');legend('y','y_sim')
subplot(5,1,3),plot(t(501:1000), y(3,501:1000));grid;hold on
plot(t(501:1000), y_sim(3,501:1000),'r');legend('y','y_sim')
```

警告: 复数 X 和/或 Y 参数的虚部已忽略。

```
subplot(5,1,4),plot(t(501:1000), y(4,501:1000));grid;hold on
plot(t(501:1000), y_sim(4,501:1000),'r');legend('y','y_sim')
subplot(5,1,5),plot(t(501:1000), y(5,501:1000));grid;hold on
plot(t(501:1000), y_sim(5,501:1000),'r');legend('y','y_sim')
```

警告: 复数 X 和/或 Y 参数的虚部已忽略。