

Digital Control

HW1

班級：航太四 A

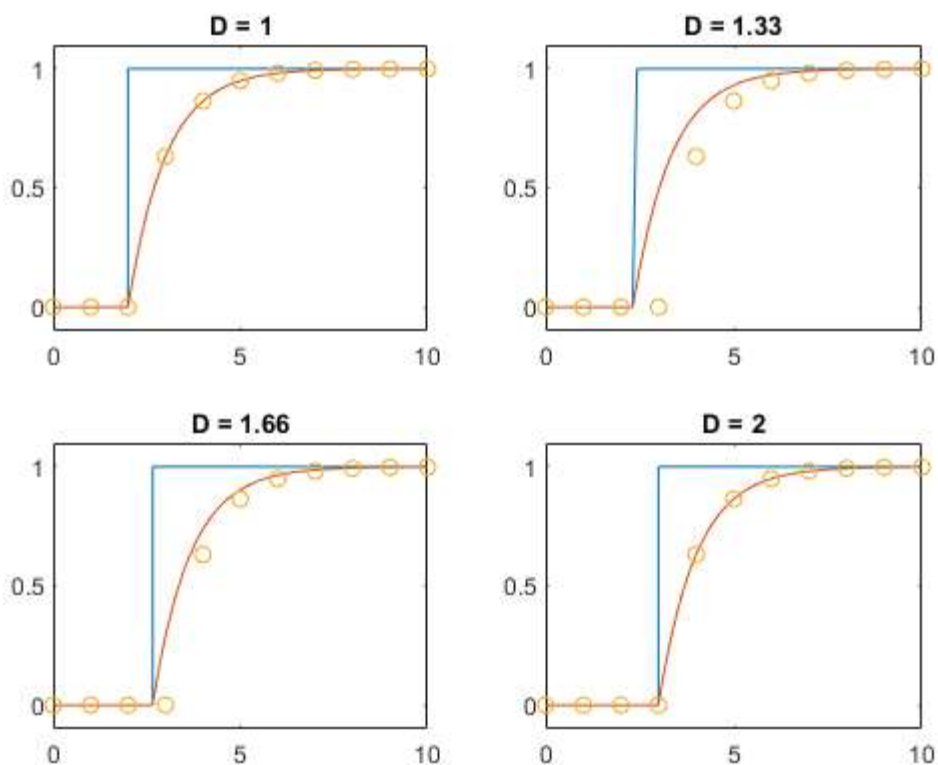
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Step input

```
clear;clc;%close all
count = 0;
for i = [1 1.33 1.66 2]
    count = count + 1;
    delay = i;
    out = sim('HW1_step');
    t = out.tout;
    u = out.u.Data;
    yc = out.yc.Data;
    td = out.yd.Time;
    yd = out.yd.Data;
    subplot(2,2,count)
    plot(t, u, t, yc, td, yd, 'o')
    ylim([-0.1 1.1])
    title("D = "+delay)
end
saveas(gcf, 'step.jpg')
```



Pulse input

```
clear;clc;close all
delay_set = [1.33 1.33 1 0.33];
pulse_amp_set = [30 2 1 0.5];
pulse_pw_set = [0.3 5 10 20];
for i = 1:4
    delay = delay_set(i);
    pulse_amp = pulse_amp_set(i);
    pulse_pw = pulse_pw_set(i);
    out = sim('HW1_pulse');
    t = out.tout;
    u = out.u.Data;
    yc = out.yc.Data;
```

```

td = out.yd.Time;
yd = out.yd.Data;
subplot(2,2,i)
plot(t, u, t, yc, td, yd, 'o')
yticks(0:0.2:1)
ylim([-0.1 1.1])
end
saveas(gcf, 'pulse.jpg')

```

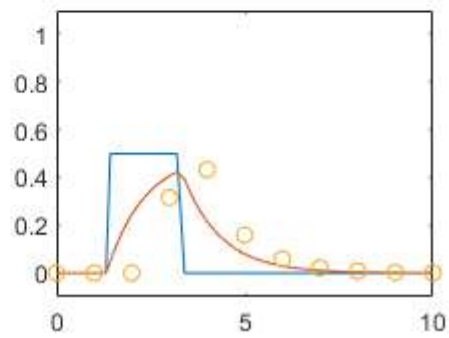
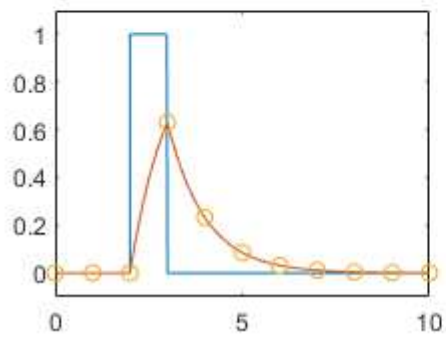
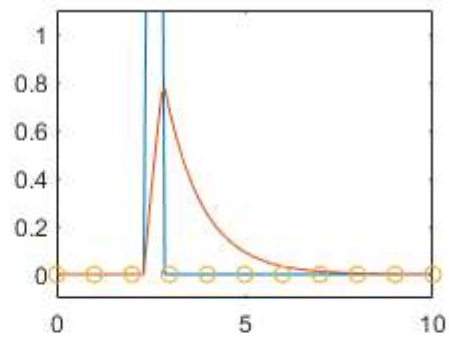
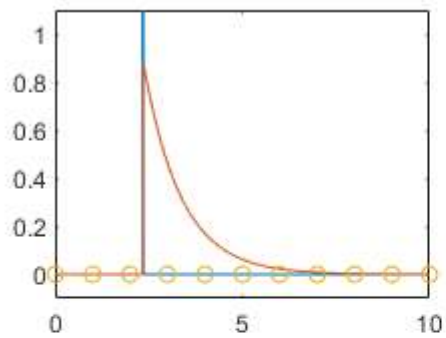


Figure.1 Simulink for step input

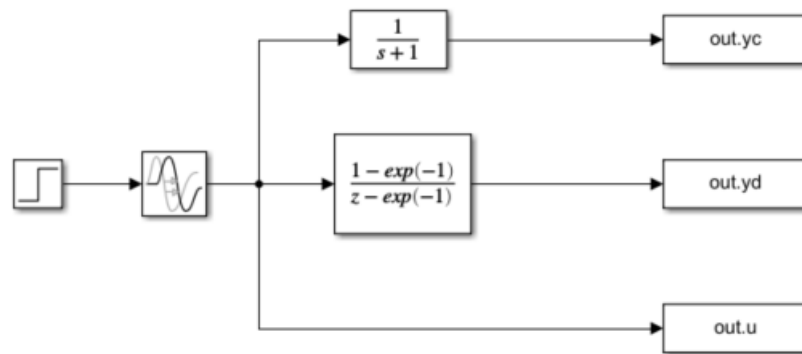


Figure.2 Simulink for pulse input

