

```
ts = 50; % Durata della simulazione in secondi  
Tc = 0.1; % Tempo di campionamento
```

```
A = [0.9944 -0.1203 -0.4302;  
      0.0017  0.9902 -0.0747;  
      0        0.8187  0];
```

```
B = [0.4252 -0.0082 0.1813]';
```

```
C = eye(3);
```

```
D = zeros(3,1);
```

```
x0 = [0.05 0.15 0.2];
```

```
c1 = C(1,:); % Prima riga di C  
c2 = C(2,:); % Seconda riga di C  
c3 = C(3,:); % Terza riga di C
```

```
v = [0.86 0.87 0.88]; % Autovalori osservatori:  
                        % vengo assegnati gli stessi,  
                        % ma possono essere diversi  
tf1 = ts/2;           % Istanti d'inizio guasto a gradino  
tf2 = ts/2;  
tf3 = ts/2;
```

```
K1 = place(A',c1',v)'; % Determina il valore di Ki affinché
```

% la matrice $A-K_i \cdot C_i$ abbia i valori di v

K2 = place(A',c2',v)';

K3 = place(A',c3',v)';

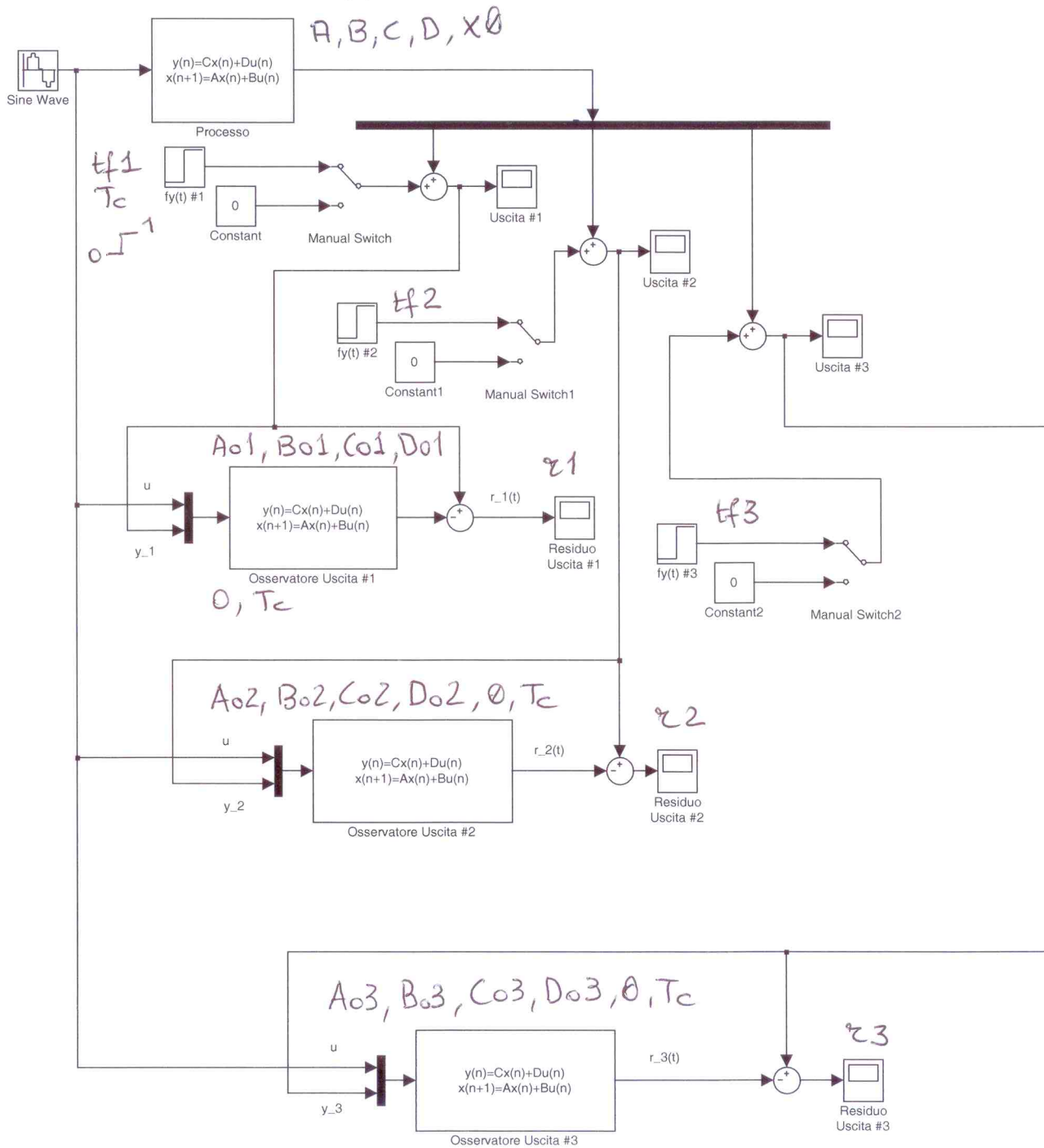
Ao1 = A - K1*c1; Bo1 = [B K1]; Co1 = c1; Do1 = zeros(1,2);

Ao2 = A - K2*c2; Bo2 = [B K2]; Co2 = c2; Do2 = zeros(1,2);

Ao3 = A - K3*c3; Bo3 = [B K3]; Co3 = c3; Do3 = zeros(1,2);

12:34 Digital Clock
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T_c
Amplitude = 1
Frequency = 1



```
% Grafica i risultati  
close all
```

```
th = 0.1; % tolleranza del 10% rispetto al valore massimo e minimo dei residui
```

```
maxr1 = max(r1(find(r1(:,1)<ts/2),2));  
minr1 = min(r1(find(r1(:,1)<ts/2),2));
```

```
maxr2 = max(r2(find(r2(:,1)<ts/2),2));  
minr2 = min(r2(find(r2(:,1)<ts/2),2));
```

```
maxr3 = max(r3(find(r3(:,1)<ts/2),2));  
minr3 = min(r3(find(r3(:,1)<ts/2),2));
```

```
figure, subplot(311), plot(r1(:,1),r1(:,2),'-',...  
    r1(:,1),maxr1*(1+th*sign(maxr1))*ones(size(r1(:,1))),'--',...  
    r1(:,1),minr1*(1-th*sign(minr1))*ones(size(r1(:,1))),'--'),  
    title('Guasto su y_1(t)'),  
    subplot(312), plot(r2(:,1),r2(:,2),'-',...  
    r2(:,1),maxr2*(1+th*sign(maxr2))*ones(size(r2(:,1))),'--',...  
    r2(:,1),minr2*(1-th*sign(minr2))*ones(size(r2(:,1))),'--'),  
    title('Guasto su y_2(t)'),  
    subplot(313), plot(r3(:,1),r3(:,2),'-',...  
    r3(:,1),maxr3*(1+th*sign(maxr3))*ones(size(r3(:,1))),'--',...  
    r3(:,1),minr3*(1-th*sign(minr3))*ones(size(r3(:,1))),'--'),  
    title('Guasto su y_3(t)'),
```