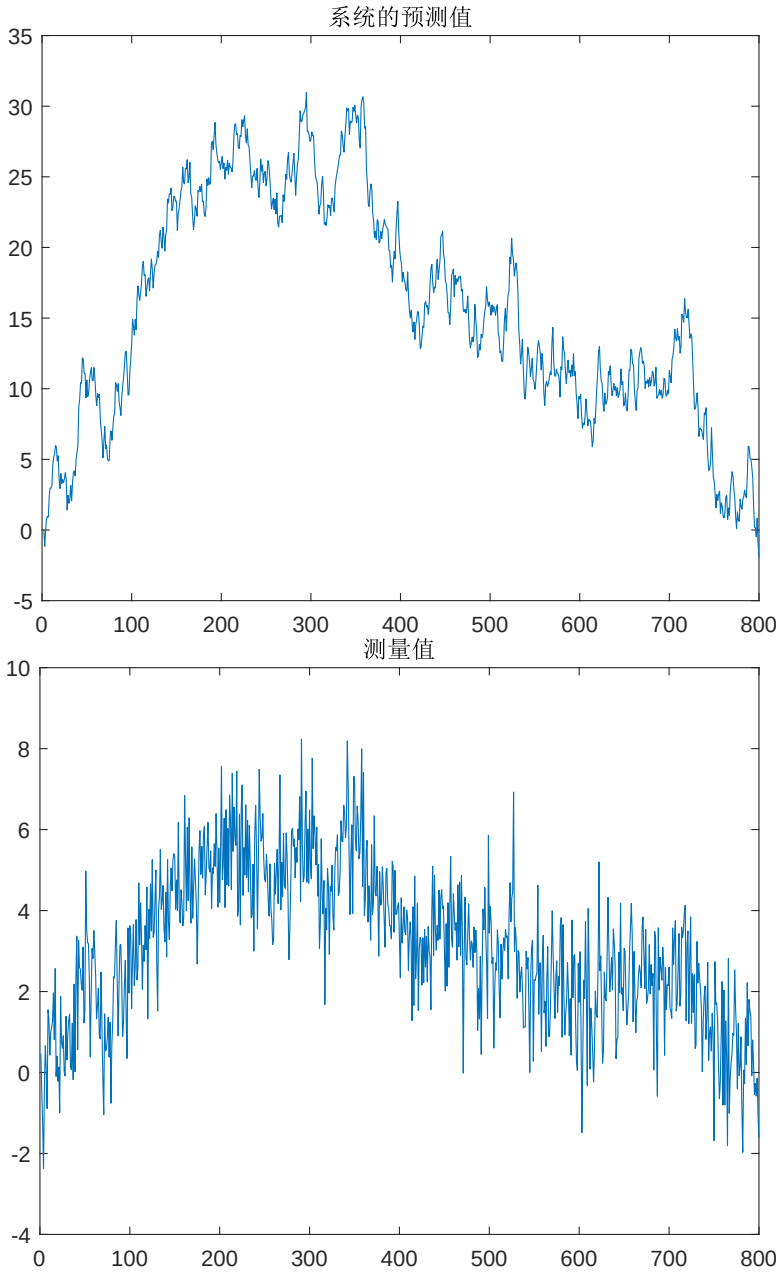
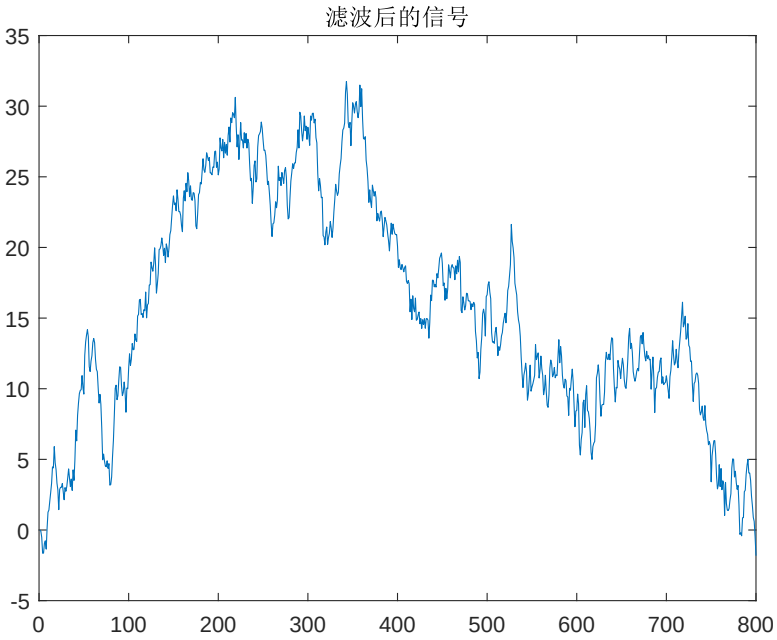
```
% 2010-4-15, luyz23, ´ MATLABµ½latexµ¼ º
% >> publish('kalmanfilter.m','latex')
% -*-  ¿¨¶   ¨ -*-
% ´ ¶   º    £¬
clear
N=800; w(1)=0; w=randn(1,N); %  ²   °
x(1)=0; a=1;
for k=2:N;
    x(k)=a*x(k-1)+w(k-1); % µ ²
end
V=randn(1,N); %² µ  °
q1=std(V); Rvv=q1.^2;
q2=std(x); Rxx=q2.^2;
q3=std(w); Rww=q3.^2;
c=0.2;
Y=c*x+V; %²
p(1)=0; s(1)=0;
for t=2:N;
    p1(t)=a.^2*p(t-1)+Rww; %ǰ ¿ Xµ
    b(t)=c*p1(t)/(c.^2*p1(t)+Rvv); %¿¨¶
    s(t)=a*s(t-1)+b(t)*(Y(t)-a*c*s(t-1)); %¾Ý¹  ¨º  ź
    p(t)=p1(t)-c*b(t)*p1(t);%t  x(t|t)µ
end
figure(1); plot(x); title(' µ ² ');
figure(2); plot(Y); title('² ;('
figure(3); plot(s); title(' ¨º  ź ');
```


系统的预测值
35
30
25
20
15
10
5
0
-5
0
100
200
300
400
500
600
700
800
测量值
10
8
6
4
2
0
-2
-4
0
100
200
300
400
500
600
700
800


滤波后的信号
35
30
25
20
15
10
5
0
-5
0
100
200
300
400
500
600
700
800