Math508 Homework 10

Yu Huang

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Abstract

Simple Kalman Filter

1 Problem 1

X_0, V_1, W_0 distributed as $N(0, 1)$.

1.1 Part a

$N = 200, \alpha = 0.9, \epsilon = 0.3, \delta = 1$, see Figure 1 and Figure 2.

1.2 Part b

$N = 200, \alpha = 0.8, \epsilon = 0.9, \delta = 2$, see Figure 3 and Figure 4.

2 Problem 2

$X_0 = 1, P(V_1 = \pm 1) = P(W_1 = \pm 1) = \frac{1}{2}$.
$N = 200, \alpha = 0.9, \epsilon = 0.3, \delta = 1$, see Figure 5 and Figure 6.

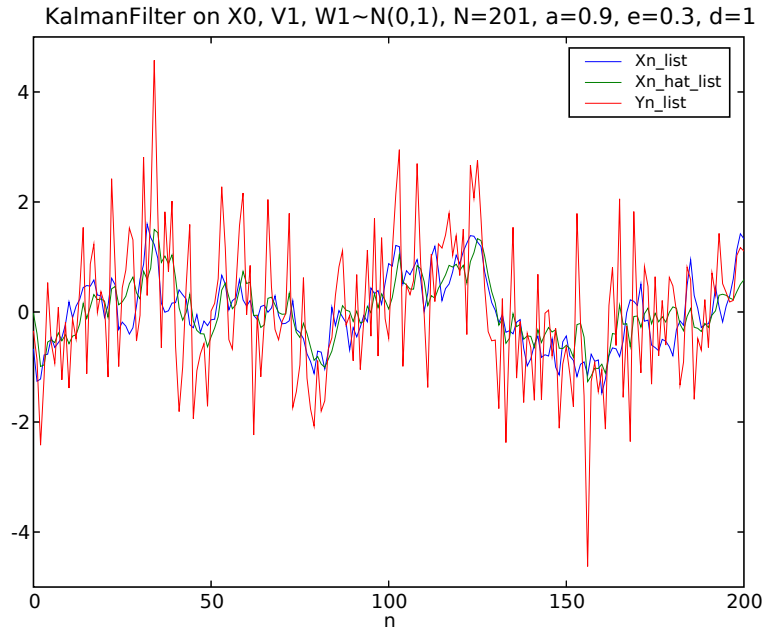

Figure 1:

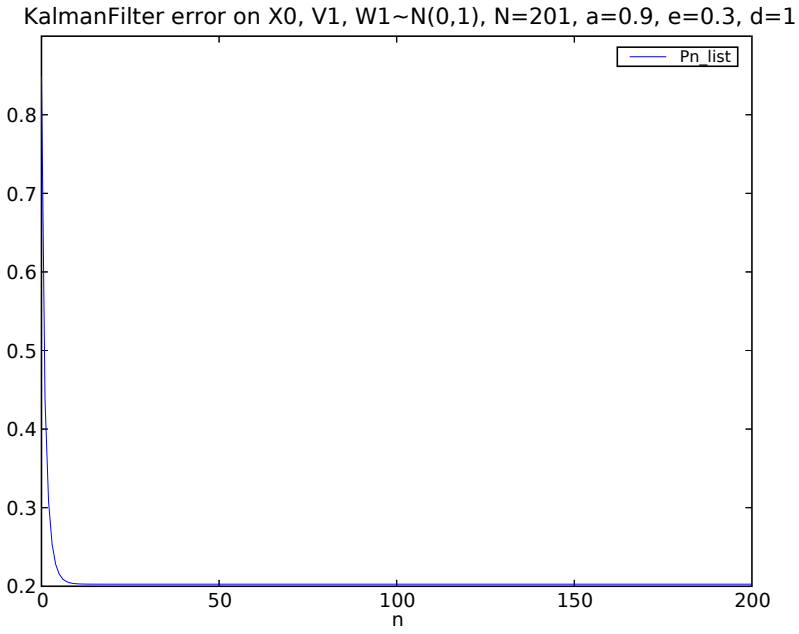

Figure 2:

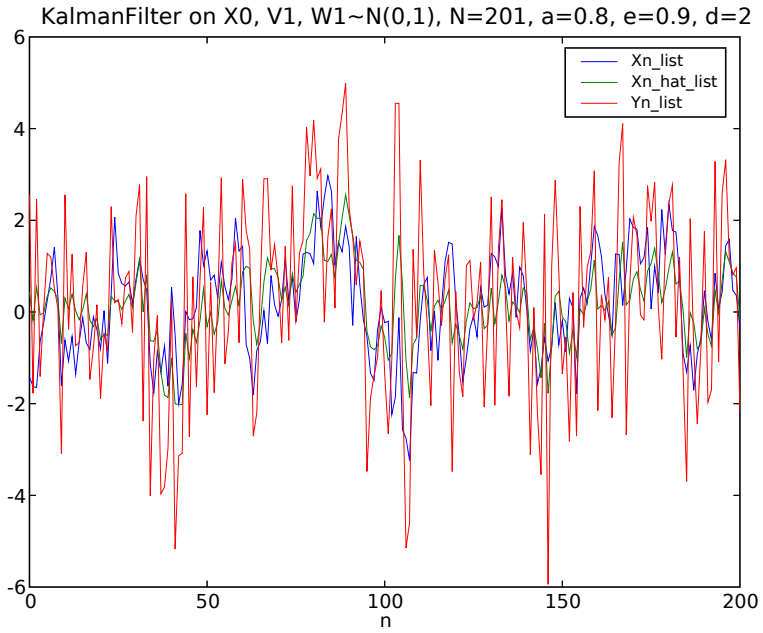

Figure 3:

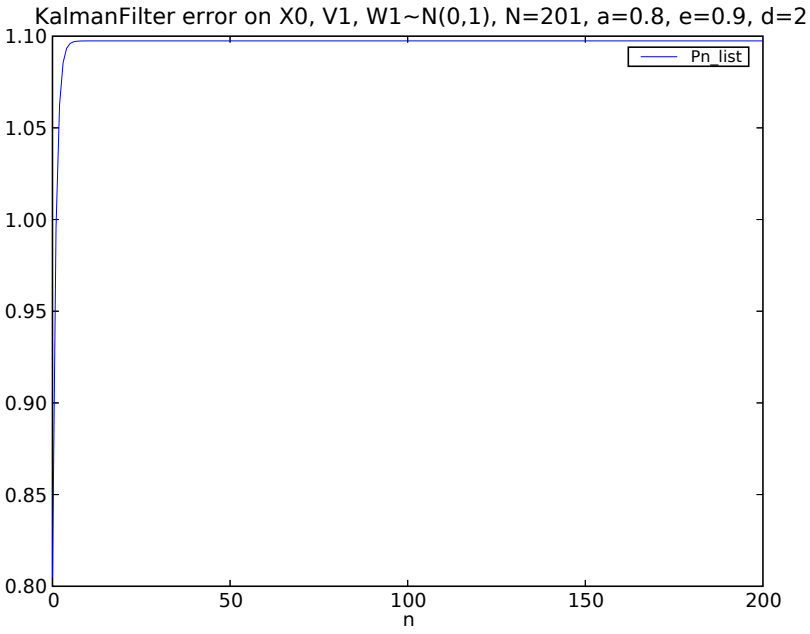

Figure 4:

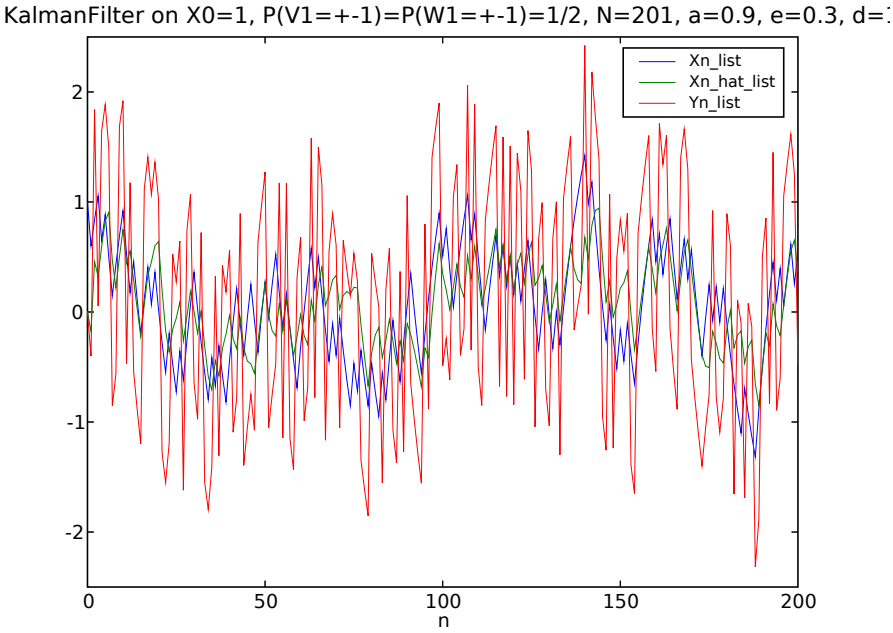

Figure 5:

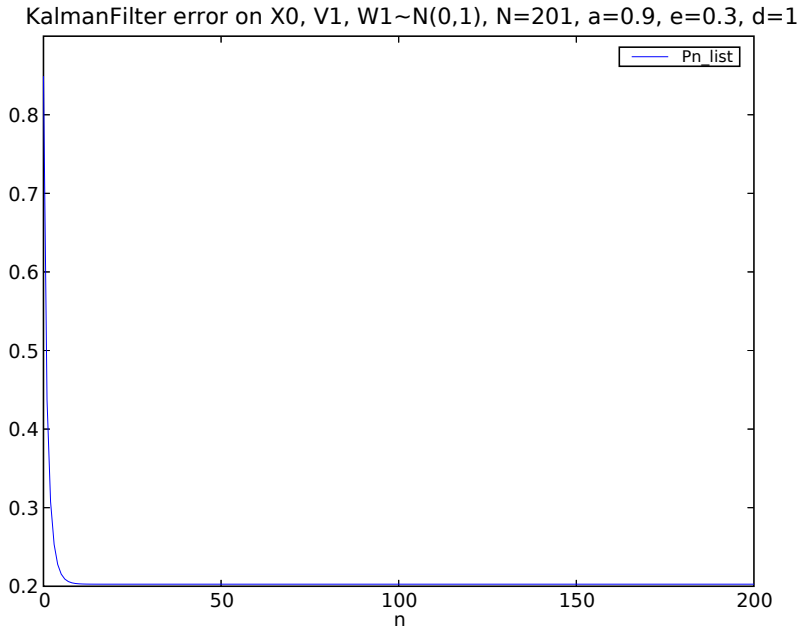

Figure 6: