

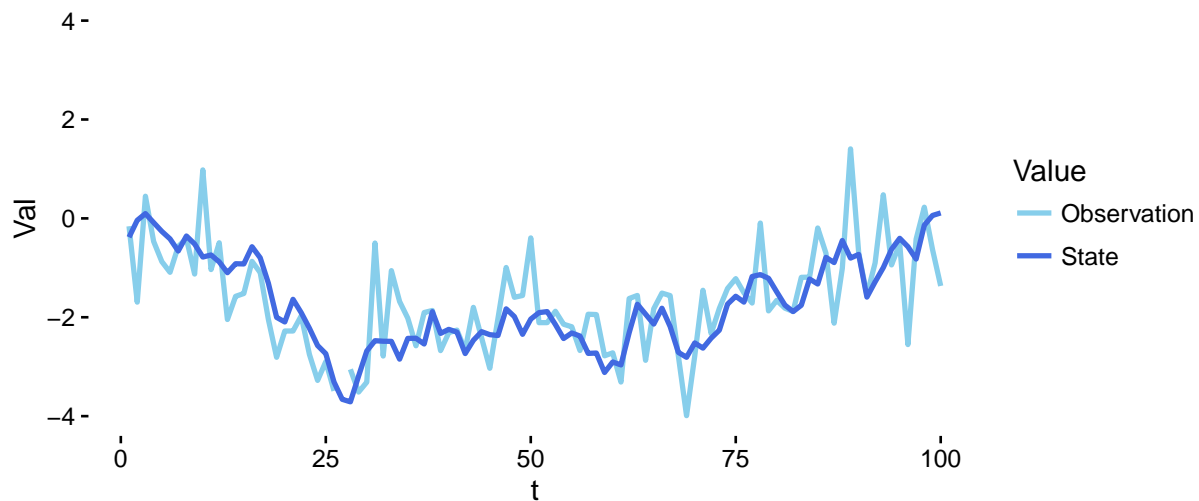
Lab 4

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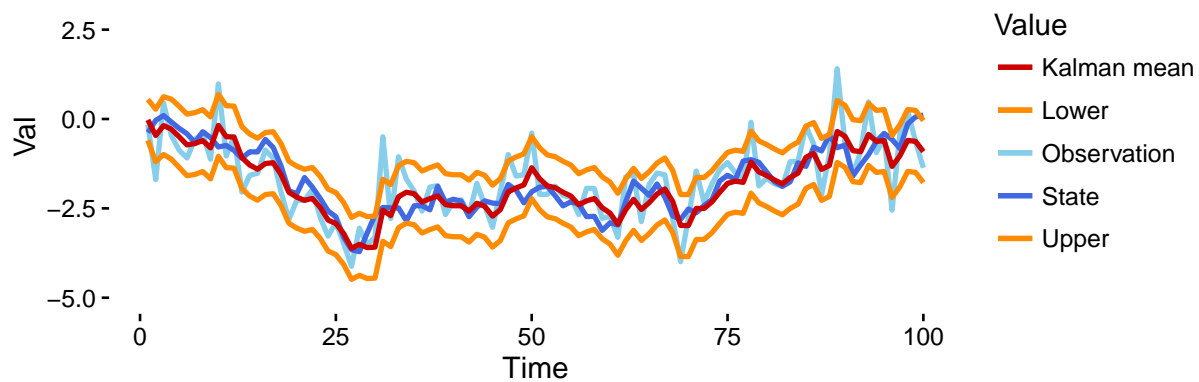
Assignment 1

a) - Simulate the model

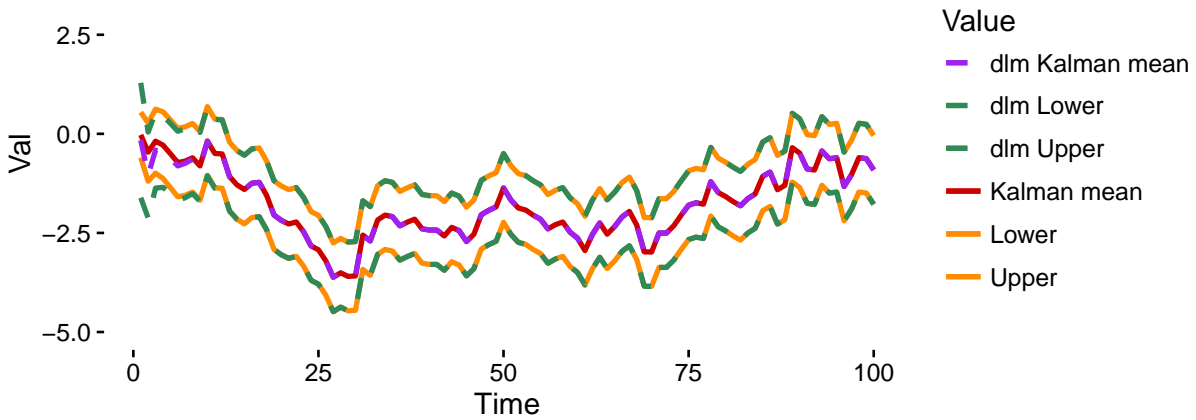


b) - Filtering: Sequential state inference

Kalman filter estimates with
0.95 probability intervals

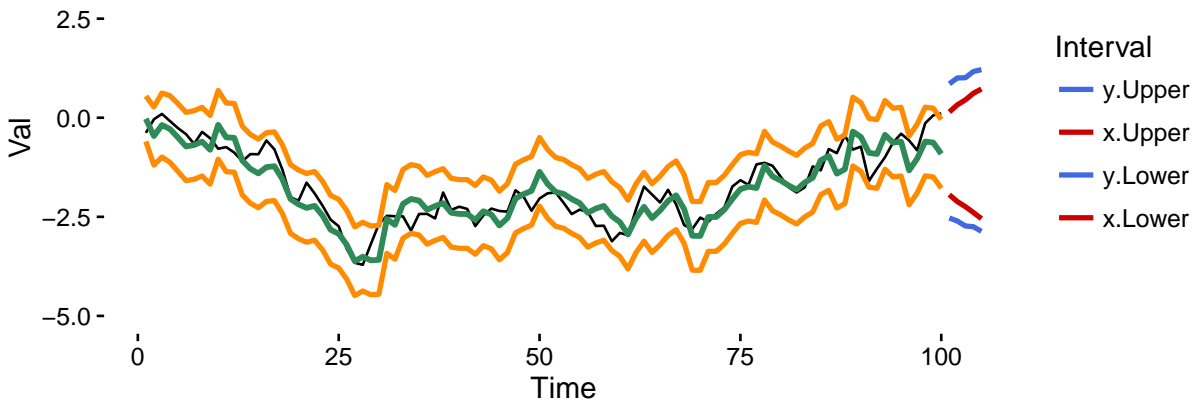


Comparison between dlmFilter and KalmanF function



c) - Prediction of state and data by simulation

0.95 probability intervals for k=5



Assignment 2

a) - Estimating the variance components by MLE.

$$\sigma_{\epsilon}^2 = 0.00226756298233307$$

$$\sigma_{v(1)}^2 = 2.6785074 \times 10^{-11} \quad \sigma_{v(2)}^2 = 0.0083936$$

b) - Filtering and smoothing