Lab 4

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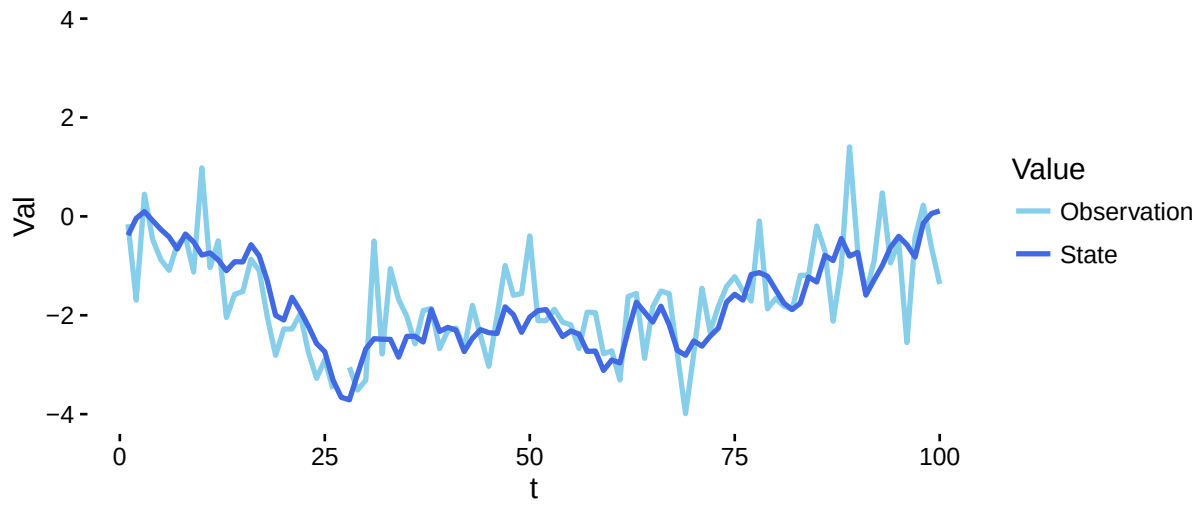
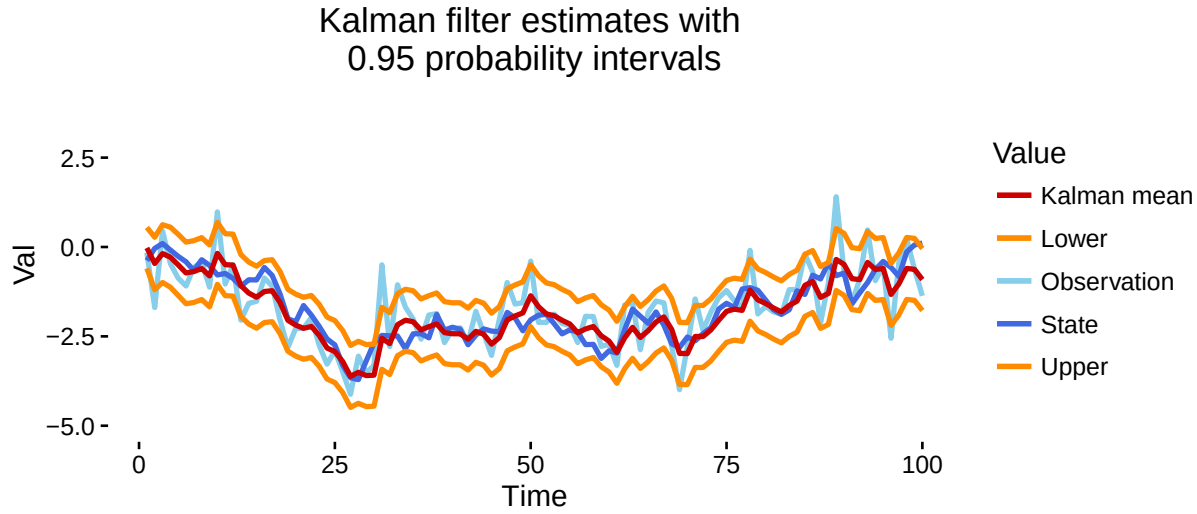
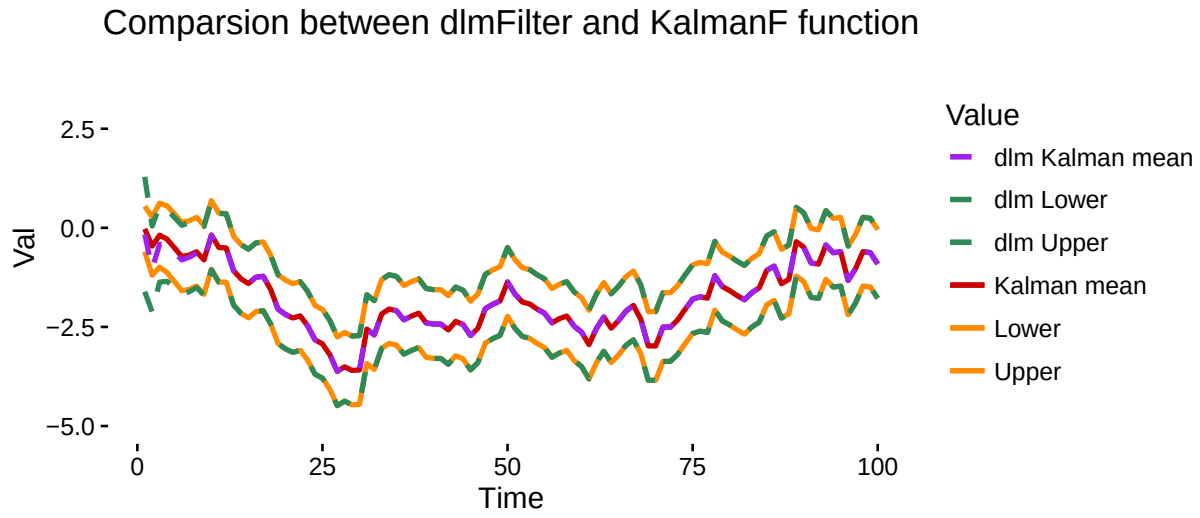
Assignment 1

a) - Simulate the model

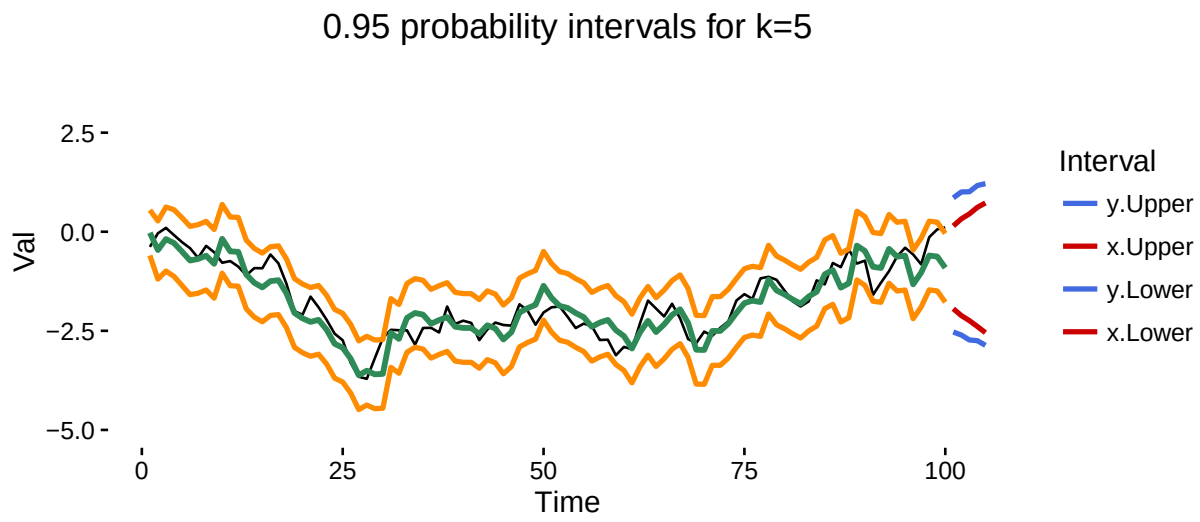


b) - Filtering: Sequential state inference





c) - Prediction of state and data by simulation



Assignment 2

a) - Estimating the variance components by MLE.

$\sigma^2_\epsilon = 0.00226756298233307$

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

b) - Filtering and smoothing