More compactly

$$f_{Y_t|X_t y^{t-1}} = (2\pi)^{\frac{-n}{2}} |\Omega_t| \exp\left(-\frac{1}{2}\mu_t' \Omega_t^{-1} \mu_t\right)$$

PROBLEM FOR Nov 7th.

① Download the dataset from the website. This is a text file with 1000 observations on an MA(2)

② Download the MATLAB programs by Kevin Murphy for constructing the Kalman Filter.

③ Estimate the parameters q_1 and q_2 where

$$y_t = \varepsilon_t + q_1 \varepsilon_{t-1} + q_2 \varepsilon_{t-2}$$

Smoothing

Sometimes we need an estimate of ξ_t based on all of the information in the sample