Probabilistic Robotics
PRRO6, Fall 2017
Book Assignment 3.8.2
Assigned: Monday September 11;
Due: Tuesday September 12, 13:00 in the afternoon

September 11, 2017

We will now add measurements to our Kalman filter. Suppose at time t, we can receive a noisy observation of x. In expectation, our sensor measures the true location. However, this measurement is corrupted by Gaussian noise with covariance $\sigma^2 = 10$.

(a) Define the measurement model. Hint: You need to define a matrix C and another matrix Q (c.f., Equation (3.6) and Table 3.1).

(b) Implement the measurement update. Suppose at time $t = 5$, we observe a measurement $z = 5$. State the parameters of the Gaussian estimate before and after incorporating the measurement (see above for instructions as how to plot an uncertainty ellipse).

Hand-In

This assignment doesn't have to be handin, it will be discussed in class.