## Relazione Kalman Filter

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## R Markdown

This is an R Markdown document. Markdown is a simple formatting syntax for authoring HTML, PDF, and MS Word documents. For more details on using R Markdown see http://rmarkdown.rstudio.com.

When you click the **Knit** button a document will be generated that includes both content as well as the output of any embedded R code chunks within the document. You can embed an R code chunk like this:

```
from kalman_filter.kalman import kalman_filter
print(inspect.getsource(kalman_filter))
```

```
def kalman_filter(
##
##
       state,
##
       state_cov,
##
       mea_cov,
##
       control=0,
##
       timedelta=1,
##
       pnoise_cov=np.zeros((2, 2)),
## ):
##
       measurement = yield
##
       while True:
##
           state = calculate_movement(state, timedelta, control)
##
           state_cov = get_a_priori_error_cov(state_cov, timedelta, pnoise_cov)
##
           gain = get_gain(state_cov, mea_cov)
##
           state = get a posteriori estimate(state, measurement, gain)
##
           state_cov = get_a_posteriori_error_cov(state_cov, gain)
           measurement = yield KalmanResult(state, state_cov, gain)
```

## **Including Plots**

You can also embed plots, for example:



Note that the  $\mbox{echo} = \mbox{FALSE}$  parameter was added to the code chunk to prevent printing of the R code that generated the plot.