

State Estimation and Filtering Homework - Final Report

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Answer to question #1

This is the template for the final report of the State Estimation and Filtering Homework. There are no specific limitations to the length of the answers to each question or to the number of figures to be inserted. In any case, the entire report should not exceed *8 pages*.

In every answer, you have to:

- explain in a concise way the method you adopted;
- motivate the choices you made;
- report the results;
- discuss them from both a qualitative and quantitative point of view.

The best way to illustrate the results is through figures. To include a Matlab figure, the following commands are suggested:

```
print -depsc2 figure_name.eps % if you are using LaTeX
```

```
print -dpdf figure_name.pdf   % if you are using PDFLaTeX
```

The content of the figures must be explained precisely in the text or in the caption, like in the following example:

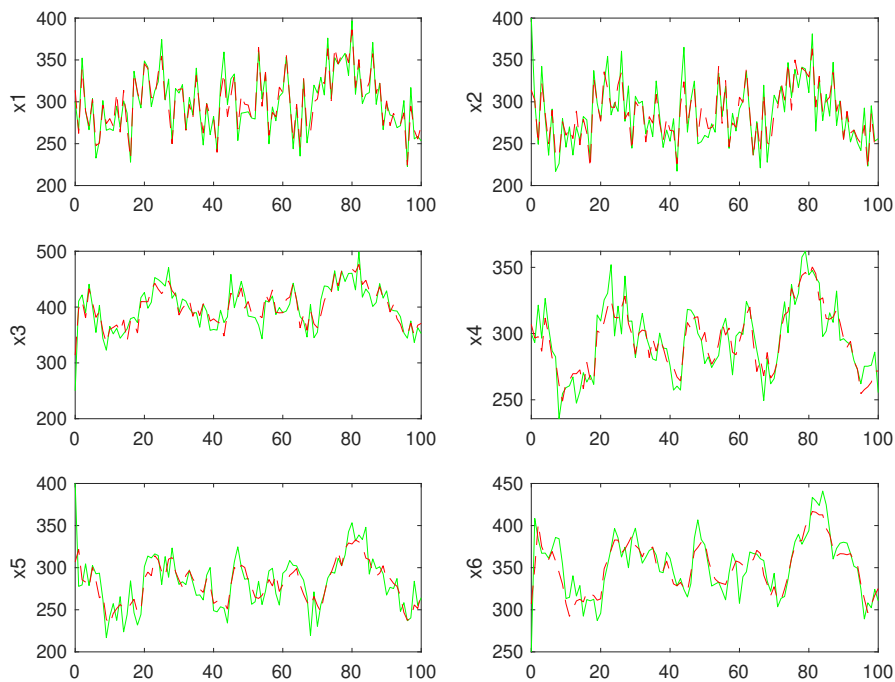


Figure 1: Estimation results for the six state variables: true state $x_i(t)$ (green), Kalman Filter estimates $\hat{x}_i(t|t)$ (red), for $i = 1, \dots, 6$.

When you have finished to answer the first question, proceed with the others (the answer will start in a new page).

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Answer to question #2

Please, write here the answer to the second question.

When you have answered all the questions, please generate a unique archive `SurnameName.zip` (with your surname and name; if you are a team of two students only one name will be sufficient), containing:

- the pdf file of this report;
- the Matlab script `SurnameName.m` containing your solution of the homework.