

# System identification & parameter estimation (wb2301)

## Final assignment, course 2009-2010

With this assignment you have to identify a system from a real dataset acquired from movement experiments on human subjects. You are requested to identify the system and estimate its parameters. Details on the assignment are given in separate sheets.

## Choosing and doing the assignment

Do the assignment in groups of two. Choose one of the assignments (see below) and enrol into the group of your choice under the menu button 'Enrolment'.

### Some notes on the report:

- a) Give short and clear answers to the questions asked; use minimal means to make your point clear. More words often lead to more errors while they will not be rewarded with bonus points.
- b) Clearly show which question you are answering by using the question's indexing.
- c) All figures should be clear: set the axis limits to the relevant part of the data and set proper labels and units for all axes.
- d) If you have any doubt of the correctness of your results, and you were not able to ask either Stijn or Asbjørn, explain what you suspect to be the cause and what results you would have expected.
- e) Finally, be aware that you are not allowed to copy someone else's work, neither code nor text. This will not be tolerated in the final assignment. Finished reports will be cross checked with work of previous years.

## Marks, deadline

The mark for this course comprises the assignments (25%), the final assignment (25%) and the written exam (50%). We can only determine your final mark after the final assignment is handed in. Submit the assignment on Blackboard before the exam of **June 26, 2010**.

## Assignments:

- I. Arm admittance  
How do muscle properties and reflexes vary with environmental stiffness, damping, etc.?
- II. Ankle admittance  
How do muscle properties and reflexes vary with task instruction and perturbation bandwidth?
- III. Human controller  
Generate your own dataset behind your own computer! Can you control the system, what is your crossover frequency?

## Questions:

For questions regarding the assignment check for the assistance hours in the lectures schedule or send an email to Stijn or Asbjørn.