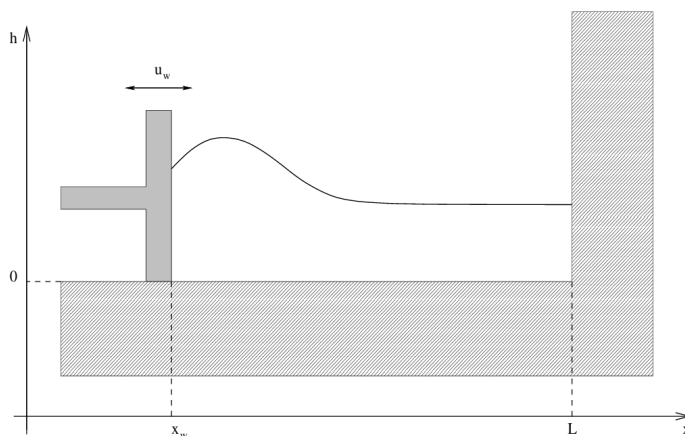


Masterarbeit

Modeling and control of a wavemaker

Motivation

The study of waves is an important aspect of mathematics and engineering. One of the long-term goals of our institute is to build a wavetank for the study of linear and nonlinear wave effects. Along with this, a simulated model of the tank and the wavemaker is needed. There is already plenty of theory about the modeling of water tanks, but this thesis would dive deeper into the different options for wave-making instruments, and the intricacies of modeling these. Since we are also interested in the control of water waves in the wavetank, the options for wave-making instruments would need to be studied for their controllability properties as well.



A diagram of a wavemaker

Problem Statement

This thesis would contain a short literature review of the theory already out there, along with a investigation into wave-making appliances. This would be followed with the testing and validation of the model. The master thesis version would also include testing the model with the latest control algorithms for boundary value control.

Prior knowledge

- Mathematical knowledge and interest
- Some knowledge about modeling
- Experiences with Matlab/Python programming
- Experiences with Complex analysis will help

Research area

- Partial Differential Equations
- Signal Analysis

Studiengang

- ☒ Elektro- und Informationstechnik
- ☒ Mechatronik

Alignment

- ☒ Method development
- ☒ Research
- ☒ Implementation
- ☒ Modelling

Start

From now on

Links

[Mitarbeiter](#)

Contact person

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