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# How to fill up a water reservoir using fuzzy modelling methods Diploma Thesis

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### Main tasks of the thesis

- Devise a controller which controls height of water level
- ► 5 fuzzy modelling approaches and their comparison
- Application of theoretical knowledge of fuzzy sets, logic and modelling
- Individual work on real-life problem using LFLC and LFLCSim software



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### Control system

- The goal is to maintain the quantity of interest on desired level under various circumstances
- Controller is a device that automatically implements such control
- ▶ Usually the system is a closed feedback loop control



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### Fuzzy control

- Based on the knowledge of the control mechanism not on the mathematical model of the process
- ► Fuzzy controller "replaces the person in control"
- Mathematical model of natural human thinking
- ► LFLC software



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## Fuzzy control

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# Simulation

- Simulation of the control was made by LFLCSim software
- LFLCSim is connected to LFLC where the variables and rules are implemented
- Output of simulation is an animation of development of the process

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### Results



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### Results



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### Results



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