Simulation von Micro-Generator-Batterie-Konfigurationen für automatische Armaturen

Motivation

Automatic faucets are used in public and semi-public spaces to conserve water and increase comfort. They require energy to operate, which is either provided by a fixed installation with cables or by batteries. Both is cumbersome, as cables are expensive to install and batteries cumbersome to replace. For future applications, hydro-generators in combination with rechargeable batteries might serve as “worry free” power source.

Task

The task is to develop a model that helps to assess different micro-generator and battery configurations of a self-powered smart faucet. It should include a model of a user (or N instances) that extracts water from time to time.

Expected results

Expected results include a documented model that allows for Monte-Carlo analyses in order to estimate the probability associated to different battery statuses.

Title English

- Simulation of micro-generator and battery configurations for energy autarkic faucets

Level: Master thesis, bachelor upon request

Methodology

- Concept development, modelling

Special prerequisites

- Basic programming skills
- Basic statistical skills

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