

## Announcement for Master/Bachelor Thesis, Research project

# Different topics in the field of modeling and controlling particulate systems

### Motivation

Particulate systems and processes are an important part of many industrial fields today. The particle size distribution hereby describes the process medium and gives a way to determine physical parameters of the produced product. It is therefore important to model and control this distribution as well as other process parameters.

### Task description

Different tasks around this topic can be done as a student thesis or research project. A personal topic can be derived from among the fields of modeling a particulate process or process part, the implementation of an existing model with different controllers, the comparison and benchmarking of different existing models or similar ideas.

### Requirements

The exact requirements vary depending on the personal topic, although some kind of programming will be required for every type of project. It will also be necessary that you have heard the control engineering lectures regarding your chosen topic (e.g. Regelungstechnik A/B or Dynamical Systems and Control for a task around controller design). Note that the thesis can be written in either English or German.

### References

- [1] Yixiang L., Dirk L. (2010). A literature review on mechanisms and models for the coalescence process of fluidparticles. *Chemical Engineering Science*, 65 (2010), 2851–2864.
- [2] Yixiang L., Dirk L. (2009). A literature review of theoretical models for drop and bubble breakup in turbulent dispersions. *Chemical Engineering Science*, 64 (2009), 3389-3406.

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