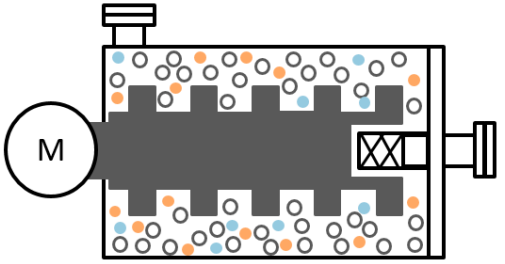
Modeling and simulation of comminution processes in stirred media mills

iPAT
Institut für Partikeltechnik

Bachelor-, Study-, Master thesis

Comminution processes play an important role in industry for the processing and production of various materials and products. Due to a large number of experimental studies, these processes can already be modeled and simulated very well in steady-state conditions using population balances. However, difficulties still exist in **simulating dynamic processes**, such as fluctuations in the composition of the feed material. This research gap is to be filled within the scope of a student thesis, with the focus being adjusted depending on the interest. At this point, the implementation of existing approaches from the literature using the software **Dyssol** or the development of a new model based on **CFD-DEM simulations** is conceivable.



Methods:

- Population balances (Dyssol)
- CFD-DEM-Simulation
- Methods of artificial intelligence (e.g. ANN)
- Experiments as a basis for modeling

Helpful knowledge:

- Basic knowledge of mechanical process engineering
- Matlab/Python
- Basic knowledge of CFD-/DEM

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