

BACHELOR / MASTER THESIS

MODELING AND SIMULATION OF RECURRENT GAS-SOLID FLOWS

Besides their industrial significance, gas-solid fluidized bed reactors are fantastic playgrounds to probe our understanding of the **dynamics of granular matter**. One observes **self-organization of characteristic patterns** such as bubbles rising through the particle bed. Their fast **recurrence** has strong implications on the way we can carry out numerical simulations of such systems. Compared to conventional techniques, our approach recurrence CFD runs **several orders of magnitude faster**.

In this project, we want to investigate the dependence of the recurrence time, i.e. the duration it takes until a pattern reappears, on the domain size and the flow conditions.

