

PhD Positions ‘Data-Assisted Real-Time Simulations of Particulate Flows’

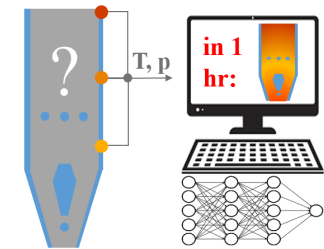
Location: Johannes Kepler University, Linz, Austria

Start Date: January 2026 or as soon as possible thereafter

Application Deadline: 19.10.2025

We invite applications for four fully funded PhD positions in the field of **data-assisted computational modeling of particulate multiscale and multiphysics flows**. These positions are part of the newly founded **Christian Doppler Laboratory for Data-Assisted Simulations of Complex Flows**.

The PhD projects target data-assisted surrogates (e.g. recurrence CFD, universal physics transformers) to reach real-time capability and ultimately build digital process twins of complex particulate flows, such as moving and fluidized bed reactors and rotary kilns. Besides dealing with highly relevant, fundamental questions on data-assisted modeling, these projects will contribute to the reduction of energy consumption and CO₂ emissions of important industrial processes.



Digital process twin of an industrial shaft furnace

Candidate Profile

We are looking for **motivated and curious PhD candidates** with the following qualifications:

- Master's degree in Physics, Applied Mathematics, Mechanical Engineering, Computational Science, or a related discipline
- solid background in classical simulation techniques (e.g., CFD, CFD-DEM)
- strong programming skills in at least one scientific computing language
- interest in (or willingness to learn) deep learning or other data-driven modeling methods
- beneficial, but not a must-have: previous experience with machine learning frameworks especially for the ML-heavy positions

We also welcome applicants from a machine learning background who are enthusiastic about developing a deeper understanding of physics-based simulations and modeling.

What We Offer

- a dynamic and supportive research environment in a leading computational modeling group
- access to high-performance computing resources and collaborative networks
- international collaborations, conference participation, and career development opportunities
- a gross salary of EUR 3715 (**14 times** per year)

Application Instructions

To apply, please submit the following documents to andrea.scharinger@jku.at:

- a short but honest cover letter detailing your research interests and motivation to apply
- a 2-page CV including relevant publications (if any)