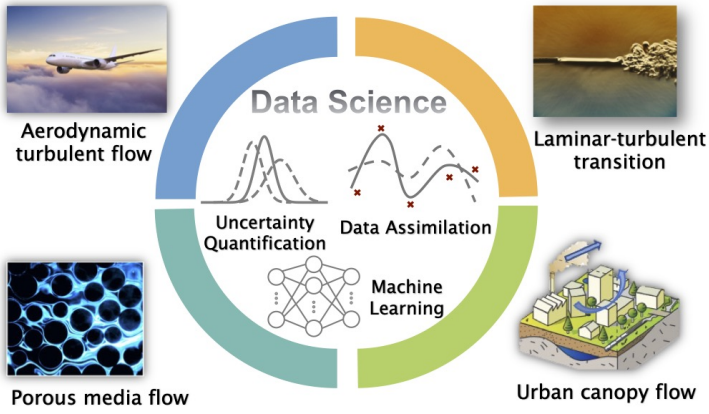
Universität Stuttgart
INSTITUT FÜR THERMODYNAMIK DER LUFT- UND RAUMFAHRT
Direktor: Professor Dr.-Ing. B. Weigand
Pfaffenwaldring 31, 70569 Stuttgart, Germany · http://www.uni-stuttgart.de/itlr/

Master thesis opportunity: Data-Driven Modeling of Multi-phase Flows

At the Chair of Data-Driven Fluid Dynamics (DDSim) within the Institute für Thermodynamik der Luft- und Raumfahrt (ITLR), we develop innovative data science methods to tackle technically challenging, socially impactful problems of computational fluid dynamics. More details about our research can be found at: www.hengx.org



In this context, we offer two opportunities for multiple master's thesis projects in the field of **data-driven modeling of multi-phase and turbulent flows**. In this project, you will work on developing novel algorithms and techniques for modeling the complex behavior of multi-phase turbulent flows using data-driven approaches. You will have the opportunity to work with large-scale DNS datasets, state-of-the-art simulation tools, and cutting-edge machine-learning techniques. We look for students with a strong background in fluid dynamics and simulation science, specifically:

- basic knowledge of computational fluid dynamics,
- experience with programming languages such as Python or Matlab, and
- strong interests in data analysis and machine learning.

This project is ideal for students who are interested in advancing the state-of-the-art in simulation science and developing skills in machine learning and data-driven modeling. You will work closely Dr. Xu Chu, Prof. Heng Xiao, as well as other members of DDSim.

If you are interested, we look forward to receiving your CV and a brief statement of interest at:

- xu.chu@simtech.uni-stuttgart.de (Dr. Xu Chu)
- heng.xiao@itlr.uni-stuttgart.de (Prof. Heng Xiao)