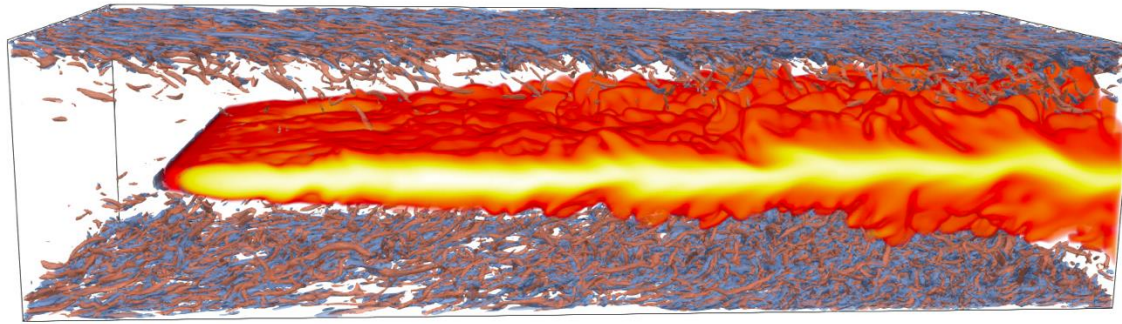
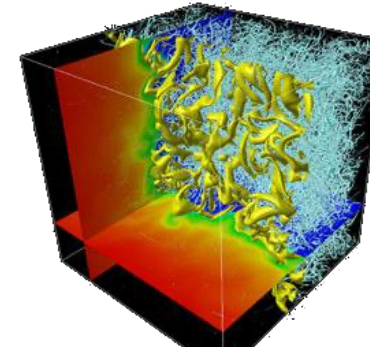


# HiWi for the analysis of high-resolution numerical simulations

## Direct Numerical Simulation (DNS) of Turbulent Flames



Hydrogen flame in a turbulent channel flow



Homogeneous isotropic turbulence

### Beschreibung

At the Department of Simulation of Reactive Thermo-Fluid Systems, we are engaged in basic research on the combustion of regenerative energy sources such as hydrogen ( $H_2$ ) and ammonia ( $NH_3$ ) using numerical simulations. For this purpose, we are looking for dedicated support in the evaluation of simulation data of turbulent combustion (large amounts of data). We offer exciting and challenging tasks, extensive support and a flexible way of working.

Depending on your interests and possibilities, the focus of your work can be adjusted (data analysis, simulations, documentation, model development, etc.). Experience in the implementation and evaluation of CFD simulations is an advantage but not essential. If the collaboration is successful, further supervision is possible if desired, e.g. for a thesis, ADP or joint publication. The scope of work is between 20 and 40 hours per month (increased hourly rate). I look forward to your inquiry!

### Tasks

- Familiarization with the necessary basics
- Efficient evaluation of simulation data with Python on computing clusters
- Presentation and analysis of the results

### Requirements

- Independent way of working and interest in acquiring the necessary basics (with supervision)
- Very good Python programming skills (e.g. numpy, pandas, matplotlib for data analysis)
- Interest and knowledge in the following topics are an advantage: combustion fundamentals, flow and turbulence, numerical flow simulation, Linux/Unix



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