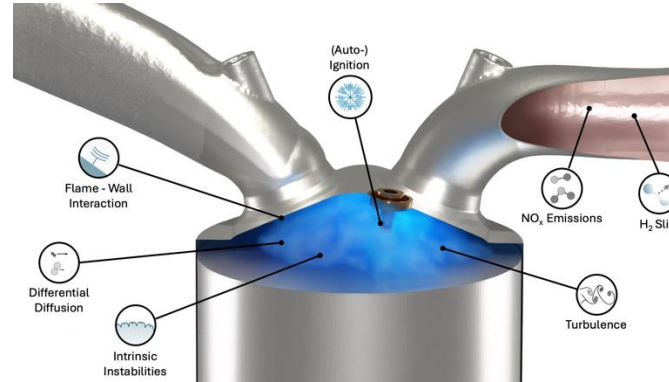
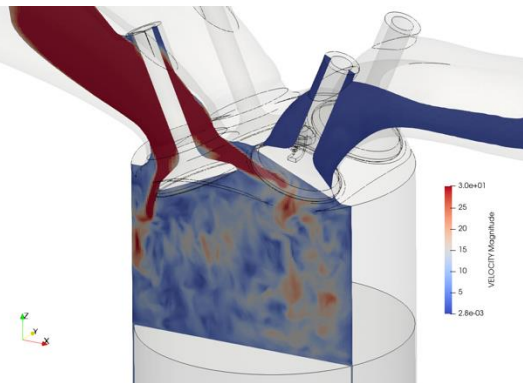
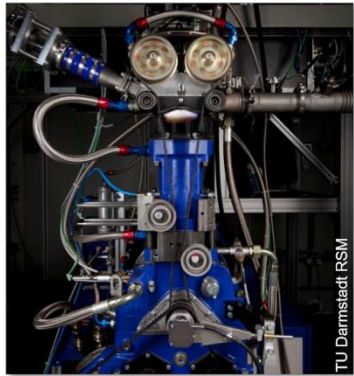


# HiWi for Hydrogen Engine CFD Simulations

## RANS / LES of hydrogen fueled spark-ignition engines using Converge CFD



### Description

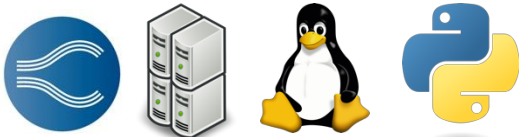
We are offering an HiWi (student assistant) position at the **Institute for Simulation of Reactive Thermo-Fluid Systems (STFS)** to support our research on **hydrogen as a carbon-free fuel** for internal combustion engines (ICEs). The position involves conducting CFD simulations of the **Darmstadt Research Engine** in collaboration with the RSM, focusing on hydrogen's unique properties as a fuel. The goal is to build a comprehensive simulation database covering various operating points, utilizing the **Converge CFD software**. Both motored (non-combustion) and fired (combustion) engine modes will be studied to explore the potential of hydrogen-fueled ICEs as sustainable transportation solutions.

### Tasks

- Perform CFD simulations of the Darmstadt Research Engine using Converge CFD
- Build a database of hydrogen engine simulations across different operation points
- Analyze hydrogen-specific properties in motored and fired operations
- Collaborate with researchers at STFS to investigate innovative engine technologies

### Requirements

- Programming skills in Python (e.g. numpy, pandas, matplotlib)
- Knowledge in the use of Linux/Unix systems
- Experience in CFD simulations
- Interest in hydrogen combustion, engine technologies, or CFD
- Alternatively: Interest and motivation to acquire this knowledge (material and assistance provided)



**Date**

28.01.2025

**Starting from**

now

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