Assistant Professorship of Sustainable Future Mobility
TUM School of Engineering and Design
Technical University of Munich

TUM

Development of a LabView-based data acquisition and control software for a hydrogen aero-engine combustor test-rig

Type: Semesterarbeit
Content: theoretical / experimental
Possible start: 18.11.24

Assistant Professorship for Sustainable Future Mobility

Our group carries out research in the areas of novel concepts in aviation, propulsion, and Hyperloop technology as well as safety technology. We use the principles of technical thermodynamics as a focus in research supported by elements of fluid mechanics, heat and mass transfer, acoustics, chemical reaction kinetics and systems dynamics.

Job Description

You will have the opportunity to participate in research to hydrogen combustion for the next generation of aero engines. Unlike stationary gas turbine technology, hydrogen combustion in aero engines lacks comprehensive understanding of its combustion behavior. In the upcoming 'H2-LoNOCS' project, a novel test-rig will be designed to facilitate the measurements of the stationary and dynamic behaviors, as well as emissions of hydrogen flames in aero engine combustion.
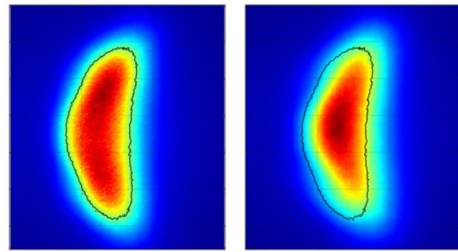

Figure 1 – Flame structure visualized with data from OH*-Chemiluminescence. Image taken from Kaufmann et al. 2022.

Your Tasks

- Develop an understanding of the test-rig setup
- Development and refinement of a LabView program based on an existing framework
- Preliminary testing of the LabView program

Our Requirements

- Knowledge of programming in LabView
- Independent and structured way of working
- Basic knowledge of control electronics and measurement techniques
- Ideally very good knowledge of German and English

Our Offer

- Insight into research topics for sustainable future air transportation
- Deep knowledge of data acquisition and test-rig control techniques
- Learn both soft and hard skills vital for engineers' daily tasks

Contact

If you are interested in working in our team, please send your application together with a motivation and a record of performance to Adrian Hochmuth (adrian.hochmuth@tum.de). If you have any questions, do not hesitate to contact us.

Prof. Dr.-Ing. Agnes Jocher

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