Chair of Astrodynamics
School of Engineering and Design
Technical University of Munich

HiWi Position: Multiphysics Simulation of a Novel Aerospace System for Microgravity Experimentation

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Background

The Chair of Astrodynamics is investigating a disruptively new aerospace system for microgravity experimentation.

We are looking for a student assistant (HiWi) to support the multiphysics simulation of this system, covering structural, thermal, and mechanical (dynamics and control) aspects, as well as the associated mechanical design.

The work will be embedded in a collaborative research environment together with researchers at the Chair and will be partially performed in collaboration with an industry partner.

Before applying, please read the following task description and necessary prerequisites. If you are interested in the position and feel like you are a good fit, send a short *motivational statement* (max 1 page), a tabular *CV*, a current *transcript* and a description/list of any *relevant projects* you previously took part in to `positions.coa@ed.tum.de`.

We offer an **8 h/week HiWi contract**. Applicants must be able to commit **at least until the end of the winter semester 2026/27**, ideally longer.

Regular presence onsite at our Chair on the **TUM Ottobrunn campus** may be necessary.

Tasks

- Multiphysics simulation of a novel aerospace system for microgravity experimentation, including:
  - Structural simulation
  - Thermal simulation
  - Mechanical simulation (dynamics and control)
- Mechanical design, including CAD drawing
- Collaboration with researchers at the Chair and with an industry partner

Prerequisites

- Passion for mechanical design (including CAD drawing) and multiphysics simulation, covering structural, thermal, and mechanical (dynamics and control) simulation
- Excellent communication skills in both German and English (native or C1)
- Capability to work under uncertainty
- European (EU/EEA/CH/UK) nationality

Beneficial qualifications include:

- Previous experience in developing a novel robotic, aerospace or similar system “from scratch”
- Knowledge of either train transportation systems or aircraft/spacecraft systems

Not all of the listed qualifications are mandatory; but the more, the better.