

## Master Theses

### Flow Simulations in the Field of Fire Protection at Airbus

Would you like to work on exciting future topics in your Master thesis and make a contribution to making aviation even safer?



*Figure 1: Airbus aircraft fleet*

The "Fire Protection" department at Airbus in Bremen is responsible for the development of active fire protection systems in all commercial aircraft programs. As an undetected fire in the cargo compartment is a catastrophic event, the safety and reliability requirements are high. For example, any conceivable fire in the cargo compartment of an aircraft must be detected within 60 seconds and trigger an alarm in the cockpit. After receiving a smoke alarm in the cockpit, the fastest possible landing is made, i.e., a detour to the nearest airport and the evacuation of passengers. As the cargo compartments on the lower deck are not accessible from the cabin, these areas are also equipped with an active fire suppression system that will suppress the fire until the aircraft can land safely.

The task of the fire protection team in Bremen is to keep the technology of all Airbus products up to date. In order to make aircraft even safer in the future, new methods are being developed to predict smoke propagation and fire detection even faster and more accurately with the help of numerical modeling.

We are looking for student support in the form of Master theses on the following topics:

- Analysis and evaluation of test data for fire detection from laboratory, ground and flight tests
- Numerical flow simulation of smoke propagation
- Parameter studies on variables influencing the spread of smoke and the predictive accuracy of the modeling

**We are looking for students with:**

- Study at the University of Bremen in the faculty of Production Engineering - Mechanical & Process Engineering or in related faculties
- Initial experience in the field of flow measurement technology or numerical simulation

**We can offer:**

- Interesting research topics in the field of aviation
- Close technical support at Airbus in the "Fire Protection" department
- Close scientific supervision at ZARM

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