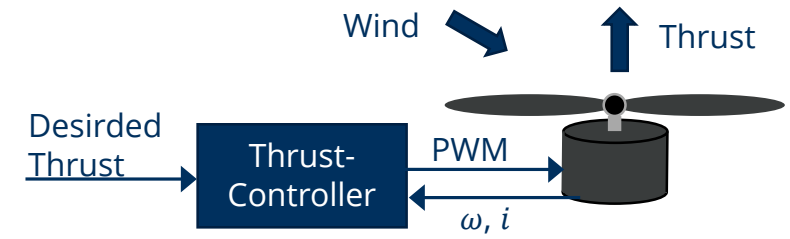


## Research Project/Master's Thesis

# Thrust Control for Multicopters

### Background

The rotors of a multicopter are the key element for generating forces and torques. In most multicopters, however, it is not the thrust of the rotors that is controlled, but the motor voltage or speed. A simple constant relationship between the rotor speed and the generated thrust force is usually assumed. This simplification is not sufficient, especially in the case of varying aerodynamic conditions (wind, turbulences). Therefore, the aim of this work is the development and improvement of a thrust controller for the rotors, which allows to precisely control the thrust of the rotors even under wind influence.



### Possible work packages

- Development and testing of models to determine the actual thrust force
- Implementation of a thrust controller on a microcontroller or in the firmware of the motor electronics
- Validation and testing on a test bench and in flight

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### Prior Knowledge

- Control engineering
- $\mu$ C programming
- Aerodynamic basics (optional)