



Aero 2

Rotor Step Response Modeling

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Aero 2 – Application Guide

Rotor Step Response Modeling

Why do we need a Rotor Model?

Having a dynamic model of a system is crucial for effective control design. The model is used to design a control according to certain specifications and validate it before deployment on the actual system. However, modelling a complex system can be time consuming and, sometimes, not all the system parameters are known. Instead, the model of a system can be obtained experimentally by applying an input to the system and analyzing the corresponding output response. This is also known as "black box" modelling. In this lab, we show how to apply a step input to the rotor and find its corresponding transfer function model.

Topics

- First-Order systems
- Transfer function models
- "Black box" experimentally-based modelling
- Model Validation

Getting started

The goal of this lab is to analyze an alternate approach to modeling the Aero 2's components. In this lab, we'll take a look at the step response of the Aero 2 rotor.

Ensure you have read the following concept reviews,

- Modeling (sections 2a and 2b)