

Design and Testing of Different Options for a Leading Edge Protection of Rotorblades

(Design / Testing / Method Implementation)

Keywords: Rotorblade, Leading Edge, Abrasion, Environment Protection, VTOL

Background: At the institute, several rotor blades have been designed and tested. Also we are currently in the beginning of designing a VTOL propeller system. Depending on the test flight environment the abrasion effects on the leading edge are considerable. Therefore several ideas for retrofitting a leading edge protection have been devised and shall now be investigated regarding feasibility and their effect on the blade aerodynamics.

Goal: The design and implementation of a leading edge protection for a rotor blade. Evaluation of several options, regarding feasibility, cost and durability. Testing of the leading edge protection regarding aerodynamics on the rotor test stand. Also the abrasion protection shall be validated using tests.

About us: We are looking for independent and highly motivated Master's students who want to develop their knowledge in the areas of rotor / propeller blades construction and design as well as testing methods and environment. This thesis offers an excellent opportunity to participate in applied and industry-related research. If you are interested, please contact us personally. We will be happy to discuss all possibilities! We currently also offer other topics for theses.

Abilities: High motivation and the ability to familiarize yourself independently with new topics. Experience with design and construction, rotor and propeller dynamics as well as structural dynamics is beneficial. Experience with Carbon Composites, Coating and Testing would be preferable.

Language:

Englisch/Deutsch

Start: from 05/2024

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