

Structural Design of TU-FLEX's Demonstrator Wings

Der Fachbereich FMRA und das DLR suchen für eine Kooperation studentische Unterstützung:

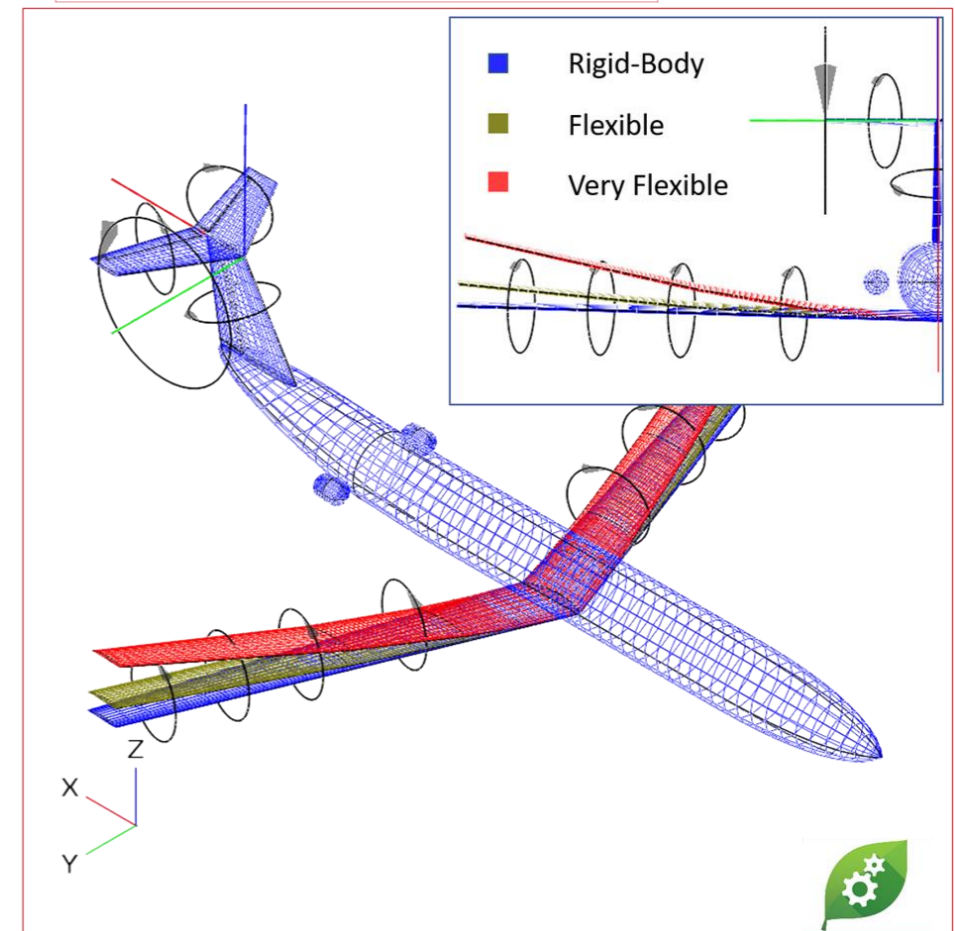
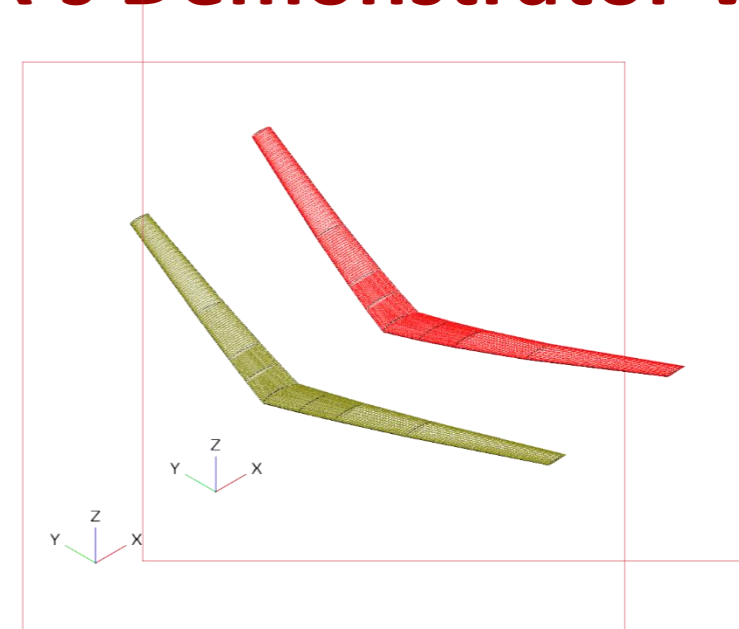
Dauer: Insgesamt ca. 6 Monate

Möglichkeiten: Hiwi, Bachelor- / Masterarbeit

Praktikum (beim DLR), oder Kombinationen

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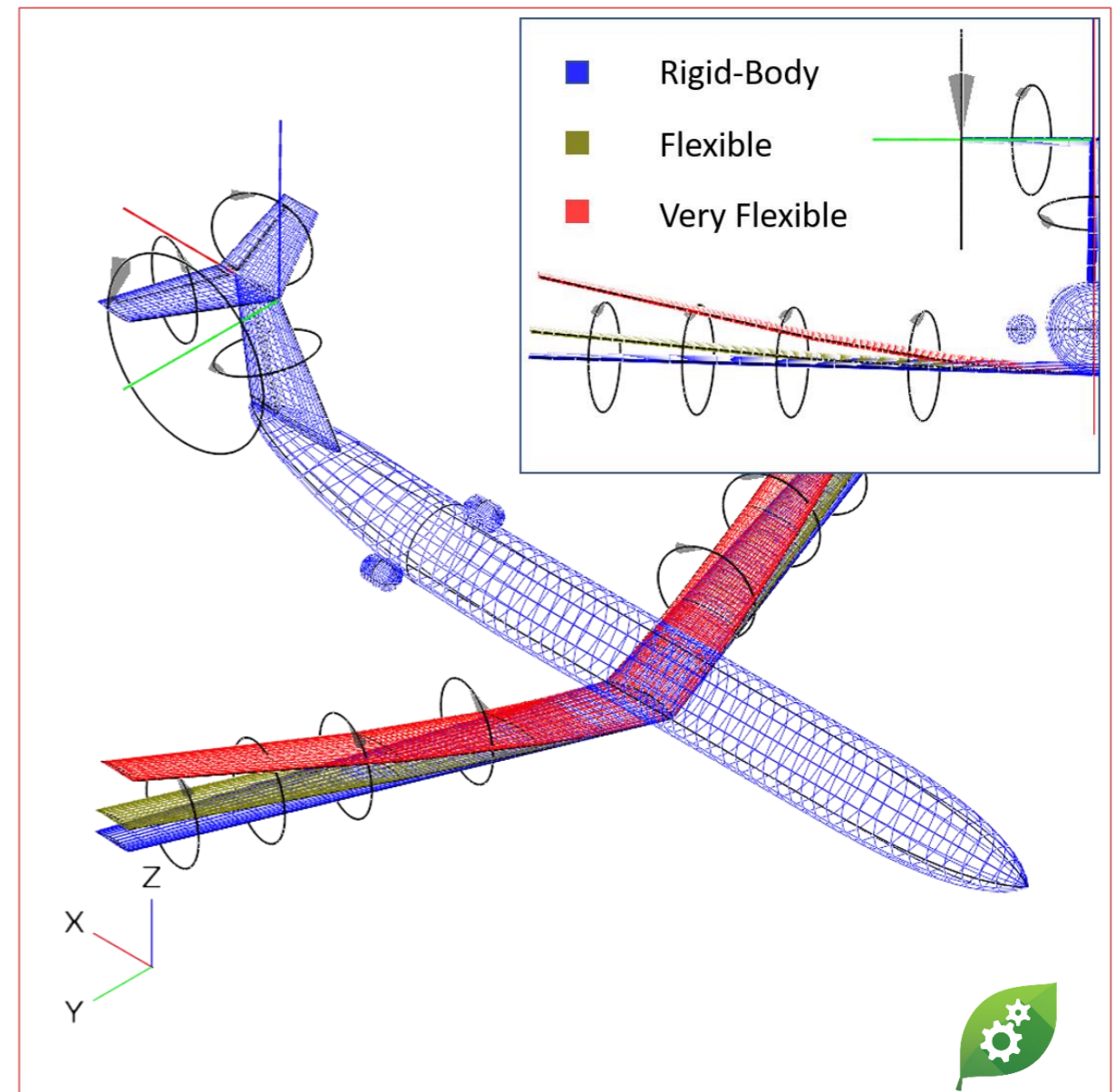


TU-FLEX - Objectives of the platform

TU-FLEX is a flexible testbed with a configuration that permits to trace conclusions applicable to, a new generation of more efficient and eco-friendly transport and commercial airliners

The design and construction of this platform would allow:

- To conduct flight experiments to observe coupled motion between flight and aeroelastic dynamics in response to control inputs
- To serve as a ground experiment testbed to define new procedures to characterize the elastic and aeroelastic properties of FA/VFA by static, ground-vibration and wind-tunnel testing



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The objective of this research is to design the wings of the TU-Flex

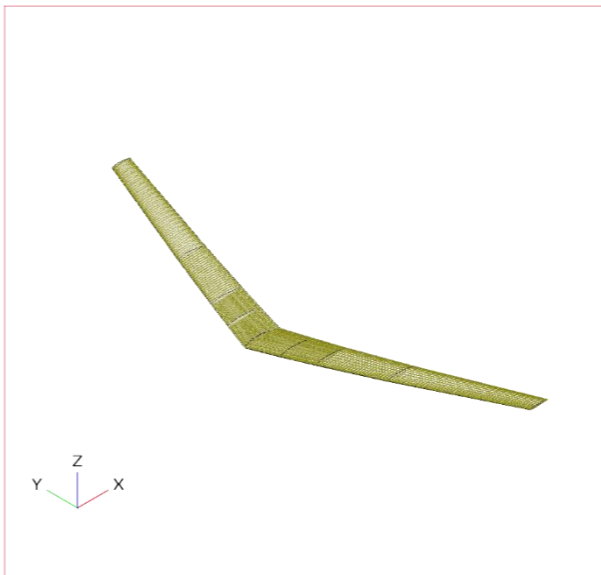
- The student will perform a structural optimization study using in-house tools at the DLR-AE in Göttingen.
- This research will include a study on the choice of material, structural layout, and design choices in the optimization.
- The final goal of this work would be a structural design of the demonstrator wings that will be manufactured in the next step.

There will different tasks performed at the Institute of Aeroelasticity of the DLR in Göttingen and at the Department of Flight Mechanics, Flight Control and Aeroelasticity of the TU-Berlin

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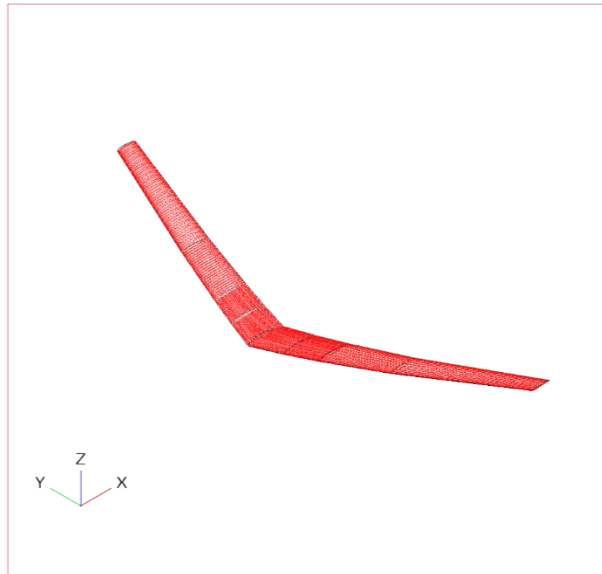
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Flexible Wing

Operating normally at 10% of vertical deflection



Very-Flexible Wing

Capable of displaying 20% of vertical deflection