



Masterarbeit/Studienarbeit/HiWi positions

Coupled adjoint aero-structural optimization of the composite lifting surfaces in preliminary aircraft design

Focusing area	MDO, Nonlinear Finite Element, Aero-structural optimization, Composite Structures
Tools	Matlab/Python
Your background	Experience in FEM and programming, Interest in MDO
Duration	3-6 months (starting immediately)

The project aims to develop locking free composite beam and extend the existing aero-structural optimization framework. The composite lifting surfaces should be modelled as thin walled composite beams with arbitrary cross-section. Further, the composite structural model should be integrated with FEMWET, a toolbox for finite element based wing weight estimation. Thus, the fully coupled aero-structural optimization for the A320 like aircraft can be performed by optimizing the wing structure as well as aerodynamic shape to minimize the fuel.

Severely disabled persons are preferred if they are equally suitable. Proof must be enclosed. For the purpose of the application procedure, personal data will be stored is saved.

The project can be customised as per the interest of student.

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