

Master Thesis

Structural Health Monitoring of Lattice-Core Sandwich Structures for Aeronautical Applications

Sandwich-type structures are among the most weight-efficient structures used in lightweight applications due to their high bending stiffness. Using additive manufacturing technologies it is possible to build nowadays a full metallic sandwich with a lattice core. Structural Health Monitoring (SHM) refers to the process of monitoring the current state of a structure and measuring damage-sensible data from the sensors that are typically permanently installed on the structure. It is an emerging new technique due to its benefits in enhancing safety, reducing maintenance costs and more importantly, in accelerating the certification process of new materials and designs.

In this thesis you'll develop an integrated SHM system concept for an aircraft with lattice core structures. For this you'll have to evaluate the suitability of different SHM approaches as well as their impact on the overall aircraft design taking into account the characteristics of the additively manufactured structure.

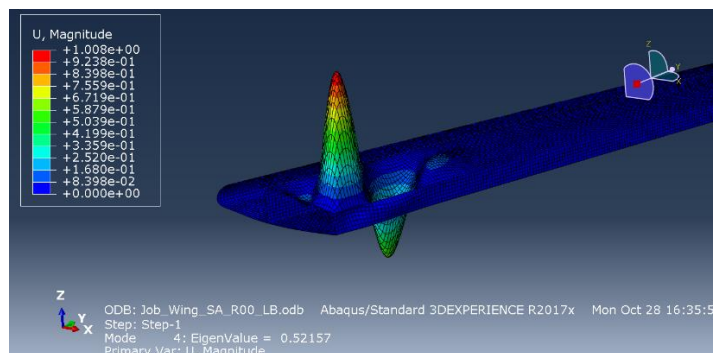
Requirements:

- Master student
- Independent, well-structured and goal-oriented working style
- Knowledge in the lightweight design and structural mechanics area

Publish date:

12.11.2019

If you're interested on this topic feel free to contact us by mail to schedule an appointment. Please include a short CV attached to your mail.



Contact Persons / Supervisors

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