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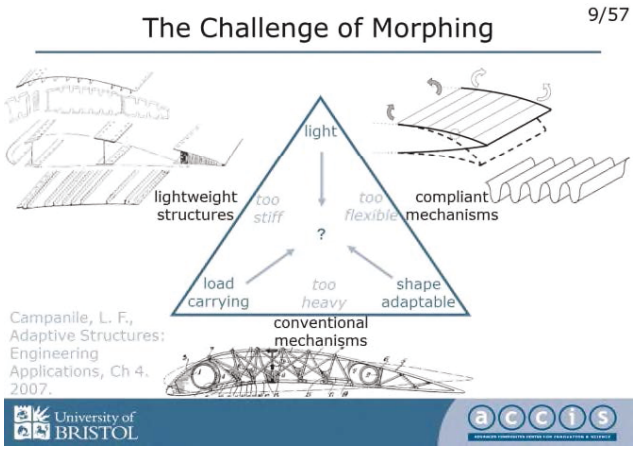
Arbeitskreis Luft- und Raumfahrt

Invitation to an RAeS lecture in cooperation with the DGLR and VDI

Material Tailoring for Lightweight and Morphing Structures - the Shapes of things to come

Paul Weaver, PhD
Professor in Lightweight Structures
Dept. of Aerospace Engineering,
University of Bristol



Lecture
followed by discussion

Entry free !
No registration required !

Date: **Thursday, 11th June 2015, 18:00**
Location: **HAW Hamburg**
Berliner Tor 5, (Neubau), Hörsaal 01.12

Hochschule für Angewandte Wissenschaften Hamburg
Hamburg University of Applied Sciences
Praxis Seminar Luftfahrt

Simply put, a structure should resist loads without failing. For structures that contain humans, i.e. houses, boats, cars, aeroplanes etc., they do not stretch (or deform) a great deal and those that are required to move around should be lightweight to keep fuel costs down e.g. aeroplanes and superlightweight to overcome gravity (e.g. rockets, spacecraft). This lecture explores the possibility of using unusual properties of materials with some additional nonlinear geometric behaviour to either reduce mass or to achieve a significant shape change (morphing) of a structure. Examples are drawn from aeroplanes, helicopters, rockets, wind turbine blades, my Ferrari and Nature.

Professor Weaver's research interests lie in elastic tailoring for lightweight structures, particularly using anisotropy in structures subject to buckling. He has worked with design aspects of composite materials for 20 years having started his career with Courtaulds Aerospace as a sponsored PhD student. He currently works closely with NASA Langley, Airbus UK, GE Aviation and leads the university partnership with Vestas Wind Systems. Since 2009 he is Director of the EPSRC Centre for Doctoral Training in Advanced Composites for Innovation and Science (ACCIS CDT).
He has worked with Airbus on various projects since 1999 and has delivered methods for coupled stress/temperature modelling for what was then the A3XX. His anisotropic blade concept for the BERP IV blade is flying on EH101 helicopters.

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RAeS Hamburg Branch http://www.raes-hamburg.de
VDI, Arbeitskreis L&R Hamburg http://www.vdi.de/2082.0.html

HAMBURG AVIATION www.hamburg-aviation.com

Der Besuch der **Veranstaltung ist steuerlich absetzbar**. Bringen Sie dazu bitte eine ausgefüllte Teilnahmebestätigung zur Unterschrift zum Vortrag mit. Mittels **E-Mail-Verteilerliste** wird über aktuelle Veranstaltungen informiert. **Vortragsunterlagen** vergangener Veranstaltungen, aktuelles **Vortragsprogramm**, Eintrag in E-Mail-Verteilerliste, Vordrucke der Teilnahmebestätigung: Alle Services über die Internetseite zur gemeinsamen Vortragsreihe von DGLR/VDI/RAeS/HAW: http://hamburg.dglr.de .