Dr. Richard Butler, Beng, CEng, PnD, MRAeS

See:
http://www.bath.ac.uk/mech-eng/people/butler/
http://www.bath.ac.uk/mech-eng/research/composites/
http://www.bath.ac.uk/cnm/people.html
http://www.researchgate.net/researcher/71580360_Richard_Butler

Reader in Aircraft Structures
Department of Mechanical Engineering
University of Bath

Profile:
Dr Butler obtained his BEng and PhD from the University of Wales, Cardiff. He was appointed as Lecturer in Aerospace Structures at Bath in 1990. Since then he has worked closely with aerospace manufacturers to understand and improve the structural performance of advanced wing structures and helicopter rotor blades. In order to create closer links with industry, he has recently undertaken a Royal Academy of Engineering secondment to the Composites Technology Centre in GKN Aerospace.

Research Interests:
Structural optimisation
Composite structures
Buckling and vibration
Aeroelasticity
Damage detection
Compressive strength of delaminated composites.

Dr Butler’s research interests are currently focused on the damage tolerance and elastic tailoring of composite structures. In particular, he has developed novel analytical methods for predicting the compressive strength of composite laminates following delamination damage. Such damage could either be sustained in service, or could arise from small manufacturing defects.

Other interests include: the prediction of stability (as a result of buckling) in aerospace structures; the optimum placement of carbon or glass fibres in structures, and the development of novel methods for joining composite and metallic structures. Ongoing projects are exploring the use of future manufacturing capability, such as curved fibre paths and additive layer processes, to further improve structural efficiency.

The Composite Research Unit has a full suite of structural test facilities, along with the ability to use non-linear Finite Element software for verification and validation purposes. The team’s optimisation and analysis methods have been used to achieve strength and stiffness improvements of over 20%, leading to significant opportunity for savings in structural weight and fuel-saving potential.

Teaching units:
Solid Mechanics 4
Aerospace Structures I
Aerospace Structures II
Composite Materials.

Publications:


Articles


Conference or Workshop Items


