



Calculating the Effects of Uncertainty in Advanced Structures

Structures & Materials 2008 Workshop

Thursday 15th May 2008
No.4 Hamilton Place, London UK

CONFERENCE SYNOPSIS

Royal Aeronautical Society Workshop on including uncertainty in modelling.

The workshop will describe the need for the inclusion of uncertainties in physical properties in structural analysis. A range of speakers will describe how the effect of uncertain characteristics can be included in analyses ranging from vibration to the calculation of the characteristics of composite materials. Detailed mathematics will be avoided, and the speakers will concentrate on the extra understanding which can be achieved by describing the physical properties in a probabilistic sense, or simply as having a range of possibilities. The presentations will also show that such analyses are possible without the need for massive computing resources in many cases.

PROGRAMME

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|-------|---|
| 13.00 | Registration & Coffee |
| 13.30 | Welcome & Opening Address
Chairman |
| 13.40 | (1) Uncertainty in the Design of Composite Wings
Prof Jonathan Cooper, Professor of Aerostructures and Aeroelasticity, University of Liverpool |
| 14.10 | (2) Problems in Uncertainty Analysis for Structural Systems
Prof Keith Worden, Professor of Mechanical Engineering, University of Sheffield |
| 14.40 | (3) Uncertainty Quantification for Complex Aero-mechanical Systems – A frequency domain approach
Prof Sondipon Adikhari, Chair of Aerospace Engineering, Swansea University |
| 15.10 | Coffee & Networking Break |
| 15.40 | (4) The Analysis of Uncertain Structures Using an Approach which Combines the Finite Element Method with Statistical Energy Analysis
Prof Robin Langley, Professor of Mechanical Engineering, University of Cambridge |
| 16.10 | (5) Use of Surrogate Models in the Probabilistic Analysis of the Performance of Airframe Structures
Dr Malcolm Nash, Capability leader – Structural Optimisation, QinetiQ |
| 16.40 | Discussion/ Q&A session |
| 17.00 | Close |

WHO SHOULD ATTEND

Researchers, technical managers, engineers, designers, academia, and regulatory authorities interested in seeing how the modelling of variability in structural design will become an increasingly important part of future airframe design.

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Complete and return the form to:
Conference & Events Department, Royal Aeronautical Society,
No.4 Hamilton Place, London W1J 7BQ
Fax: +44 (0)20 7670 4349
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Title:	First Name:	Surname:
Position:		
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REGISTRATION FEES:

Non Members Rate	£50.00 + VAT (8.75)	£58.75	<input type="checkbox"/>
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RAeS Student Affiliate Members may attend the forum free of charge, subject to availability

METHODS OF PAYMENTS: (Please select one of the following options)

Payment must accompany registration and all payments should be made in Sterling (UK£).

- Online: Registration and secure payment can be made on-line at www.aerosociety.com/conference
- Cheque: Cheques should be made payable to the RAeS and enclosed with this registration form. Please add £ if your cheque is not drawn on a UK bank to cover bank charges / currency exchange rates.
- Bank Transfer: Payments can be made by bank transfer into Account No. 0615 2538, Sort Code 60 02 20, National Westminster Bank plc, Berkeley Square & Mayfair Branch, PO Box 2153, 1-4 Berkeley Sq, London W1A 1SN, UK. Please indicate on your registration form if you have paid your fees direct.

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