CALL FOR PAPERS

ROYAL AERONAUTICAL SOCIETY

Structures and Materials Conference

6TH AIRCRAFT STRUCTURAL DESIGN CONFERENCE

BRISTOL / 9 - 11 OCTOBER 2018

The Royal Aeronautical Society's 6th Aircraft Structural Design Conference, undertaken with the support of the University of Bristol, will as with the previous conference in this series, address the challenges facing the designers of the next generation aircraft. New designs will need to meet progressively stricter environmental constraints and be subjected to ever increasing pressures for reductions in manufacturing and life-cycle costs coupled with a requirement for continual improvements in overall performance/efficiency factors. The resulting aircraft will be complex, requiring the use of advanced or novel materials, multi-disciplinary design approaches and solutions operating in a distributed design environment.

The conference seeks contributions covering current research focused on the design and manufacture of future civil and military air - vehicle structures both manned and uninhabited. The scope of the conference covers both airframe and engines. This includes consideration of innovative forms and design scenarios together with the challenges resulting from considering the complete aircraft life-cycle from initial concept to final disposal. The design and analysis of structures constructed from CFRP composites and novel materials is a major topic area for the conference.

Papers and other contributions will be sought to cover the following broad topic areas:

- **Structural Design**

Contributions may be submitted that discuss the application of knowledge based engineering methods and tools in supporting the design task. Papers that introduce multidisciplinary aspects and novel configurations into the design task are welcome.

- **FRP and Advanced/Novel Materials**

Contributors may wish to consider how these material systems can be maintained in service through non-destructive testing and characterisation, real time structural health monitoring and subsequently remanufactured or re-cycled. Papers discussing the potential for novel nano-materials such as graphene and the associated manufacturing evaluation and certification issues would be welcome.

- **Computational Methods**

Papers under this heading can cover the full range of design and analysis methods involving multi-disciplinary or single discipline environments employing a range of discipline models from simple to complex including the incorporation of advanced optimisation methods. Improvements in the performance of these computational methods through the use of massively parallel computing facilities can be addressed. The design focus may be directed at flexible aircraft including active/ adaptive structures and non-linear behaviour.

INSTRUCTIONS TO AUTHORS

The International Organising Committee invites prospective authors to submit abstracts of original work for presentation at the Conference. Authors are requested to contribute both a half hour presentations at the conference and a written paper for the proceedings. The Organising Committee reserve the right to enforce a no paper, no present / no present, no paper rule.

Abstracts should be written in English and contain between 200 - 500 words, preferably in electronic pdf format.

The deadline for submitting abstracts is **Monday 1 April 2018**. Accepted scripts and presentations, fully cleared for publication and presentation should be submitted by **Friday 15 September 2018**.

All written papers will be included in the Conference Proceedings and made available to delegates on a CD-ROM or through the Society's web pages. Accepted papers may also be considered for inclusion in the Royal Aeronautical Society's Aeronautical Journal, subject to the refereeing process.

It is important to note that papers should not have been published previously and they should avoid inappropriate sales or marketing content.

Speakers will be entitled to register using a reduced delegate rate.
To submit an abstract please email us with the following information:
-Corresponding author's name
-Speaker's name (including title)
-Speaker's job title
-Speaker's employer
-Title of presentation/ paper
-Abstract

KEY DATES AND DEADLINES

- Abstracts submitted by: 1 April 2018
- Authors notified by: 30 April 2018
- Programme Circulation: June 2018
- Presentations / papers submitted: 15 September 2018
- Conference: 9 - 11 October 2018

CONFERENCE AND EVENTS DEPARTMENT

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- **Case Studies**

Contributions from such case studies would allow researchers to re-focus their research targets to meet these needs. Papers looking at the particular structural design problems imposed by integration requirements would be welcome.

Potential contributors should note that the first three of the major areas outlined above are not to be considered as discrete and papers which combine topics in two or more of the above headings will be welcome.

CHAIRMAN OF ORGANISING COMMITTEE

Prof Alan Morris, Royal Aeronautical Society, UK

CHAIRMAN OF THE LOCAL ORGANISING COMMITTEE

Professor Jonathan Cooper, University of Bristol, UK

INTERNATIONAL ORGANISING COMMITTEE

Prof Horst Baier, Institute of Lightweight Structures, Germany
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Prof Rade Vignevic, Brunel University, UK
Prof Paul Weaver, University of Bristol, UK
Prof Karen Willcox, MIT, USA
Prof Zheng Zhong, Tongji University, Shanghai, China

VENUE

The 6th Aircraft Structural Design Conference is hosted on behalf of the Royal Aeronautical Society by the University of Bristol and takes place at @Bristol, a science discovery museum in the heart of Bristol.

Bristol is a town with a major maritime history, its own airport and rapid rail links to London and Birmingham.
It is the home of the famous Bristol Aeroplane Company which was founded at Filton on the current Airbus facility in 1910 and is the British site with the longest record of aircraft manufacture. Bristol can be considered to be the centre of the UK aerospace industry with Airbus, Rolls-Royce and GKN having a major presence in the city, and with Leonardo and Safran not more than an hour's drive away. The city has a proud engineering heritage, being home to three major engineering achievements; the Concorde aircraft and Brunel's Suspension Bridge and SS Great Britain. There are also two universities at Bristol offering aerospace courses.

Bristol is the major city in the west of the UK and has won many prizes for being one of the best places to live. The centre of the city is based around the harbour-side, combining the tradition of a historic port with the atmosphere of a fast-paced dynamic and modern metropolis. Bristol provides all the amenities that you would expect in a big city, but packed into an area that you can easily explore on foot or by bike.

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