Title: Experimental Testing of Wing Loads Alleviation using Sloshing

Type of award PhD Research Studentship
Department Aerospace Engineering
Scholarship Details Scholarship covers full UK/EU (EU applicants who have been resident in the UK for 3 years prior to 1st September 2019) PhD tuition fees and a tax-free stipend at the RCUK rate (£15,009 in 2019/20). EU national’s resident in the EU may also apply.
Duration 3 years
Eligibility Home/EU
Latest Start Date 1 October 2019

PhD Topic Background/Description
The use of sloshing in aircraft wing fuel tanks to reduce the loading effects of gusts and turbulence has recently been identified. Such an approach could lead to reduce aircraft weight with consequent improvement in fuel efficiency and reduction in environmental impact. The Airbus led H2020 SLOW-D project is aimed at developing fluid-structure interaction technologies to enhance the design of fuel tanks and their use such that loads reduction is achieved leading to improved fuel efficiency and reduced environmental impact. The team will consider: the interactions between the fuel and the moving tank, the forces acting on the tank and wing attachment, the effect of the fuel sloshing on the aeroelastic behaviour of the wing and the effect of fuel sloshing on the response to gusts and turbulence.

This studentship will address the experimental validation of the modelling techniques to be developed in the SLOW-D project, including the design and test of prototype test rigs to simulate the response of a wing like structure to a gust and the measurement of the structure and fluid motions. The student will work closely with Airbus engineers, including participation in large scale tests, and will spend some time on placement at Airbus UK.

URL for further information:
http://www.bristol.ac.uk/engineering/departments/aerospace/courses/postgraduate/

Further Particulars
Doing research at the University of Bristol
The quality of research at the University of Bristol places it within the top five Universities in the UK based on the Research Excellence Framework and Times higher Education rankings 2014-15.
The PhD candidate will be a part of a friendly and diverse community. The University has a Doctoral College (BDC) which offers approximately 200 courses, interactive workshops and seminars as a part of the University's Personal and Professional Development Programme for PGR students. The BDC organises University-wide events and provides a hub of information, guidance and resources to help researchers to get the most of their time at Bristol.

**Candidate Requirements**

A minimum 2.1 degree in Aerospace Engineering, Mechanical Engineering or a related discipline.

**Basic skills and knowledge required**

**Essential:**

Good mathematical skills. Knowledge of vibrations. Programming and FE skills (ideally with MATLAB and NASTRAN). Good communication and report writing skills. Experience of vibration and/or static structural tests.

**Desirable:**

Knowledge of aerodynamics, aeroelasticity and nonlinear dynamics.

**Informal enquiries**

Please email Prof Jonathan Cooper ([j.e.cooper@bristol.ac.uk](mailto:j.e.cooper@bristol.ac.uk)) or Dr Brano Titurus ([brano.titurus@bristol.ac.uk](mailto:brano.titurus@bristol.ac.uk))

For general enquires, please email [came-pgr-admissions@bristol.ac.uk](mailto:came-pgr-admissions@bristol.ac.uk)

**Application Details**

To apply for this studentship submit a PhD application using our [online application system](http://www.bristol.ac.uk/pg-howtoapply)

Please ensure that in the Funding section you tick “I would like to be considered for a funding award from the Aerospace Engineering Department” and specify the title of the scholarship in the “other” box below with the name of the supervisor.

Closing date for applications: **31 March 2019**

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