CALL FOR PAPERS

51st 3AF International Conference on Applied Aerodynamics
Thermal effects and Aerodynamics
Strasbourg, France - April 4-5-6, 2016

http://3af-aerodynamics2016.com

Plasma test on reentry thermal protection system. © Tekna/Airbus D&S
Call for papers

Communication abstracts (300 to 500 words, preferably with figures) have to be mailed to the 3AF Executive Secretary before **November 16, 2015**.

The Scientific Committee will inform the authors of acceptance by **December 14, 2015** at the latest.

**Official language**

Papers must be submitted and presented in English. The written version of the communications will be in English and must be sent to the 3AF Executive Secretary (secr.exec@aaaf.asso.fr) before **February 22, 2016** to allow their insertion in the conference proceedings. A 3AF template file will be provided for the written version.

A selection of papers will be published in special issues of the International Journal of Numerical Methods for Heat & Fluid Flow and of the International Journal of Engineering Systems Modelling and Simulation dedicated to the International Conference on Applied Aerodynamics. It will also be possible to submit papers for publication in the CEAS Aeronautical Journal. Authors are however free to publish their paper in any other journal, a reference to the conference being then appreciated.

**Conference deadlines**

Abstract submission: **November 16, 2015**
Paper acceptance: **December 14, 2015**
Full length paper: **February 22, 2016**
Conference in Strasbourg: **April 4-5-6, 2016**

**Conference secretariat coordinates**

**Executive Secretary:** Anne Venables  
3AF – 6 rue Galilée - 75016 Paris, France  
Tel: +33 1 56 64 12 30  
Fax: +33 1 56 64 12 31  
Email: secr.exec@aaaf.asso.fr  
Web: www.3af.fr

**Programme Coordinator:** Jean Déley  
Onera – 8 rue des Vertugadins  
92190 Meudon, France  
Tel. : +33 6 33 02 88 84  
Email : jean.delery@free.fr

Ice accretion on a profile. © Onera  
Projectile nose heating. © ISL
Thermal effects and aerodynamics

The 3AF International Conference on Applied Aerodynamics is organized each year by the French Aeronautics and Space Society (3AF) in a different venue in France known for its activities in the field of aeronautics and/or space technology. The conference is an excellent opportunity for scientific exchanges among the aerospace community where aerodynamicists from industry, research institutions and academics meet. Scientists and engineers from other domains involving fluid mechanics are also welcome.

Each year the conference concentrates on a different topic representative of current concerns in the field of aerodynamics. It is organized on the basis of five half-days of technical presentations, each introduced by a keynote conference given by an expert in the field covered by the session. The conference is concluded by a technical visit in connection with the conference’s subject.

In 2016, the conference is hosted by the University of Strasbourg.

The 51th 3AF International Conference on Applied Aerodynamics will focus on problems involving a strong coupling between heat transfer phenomena and aerodynamics, or more generally fluid dynamics. Such phenomena play a crucial role in a large variety of devices including engines of all kinds, reentry vehicles, electronic components, buildings, air conditioning, etc. Mastering of heat transfer is essential for the design of more efficient vehicles with reduced fuel consumption, hence pollutant emission. This aspect also concerns the design of more economical heating/cooling systems for terrestrial and aerial vehicles, buildings, etc. Heat transfers also play an important role in some flow control devices involving heat deposition.

Main Topics

Among the many aspects of the problem, the following items will be considered (the list not being exhaustive):

- convection phenomena
- thermal effects in hypersonic flow
- heat transfer effect on laminar-turbulent transition
- thermal issues in multi-phase flows (heat transfers, evaporation, condensation)
- icing (anti-icing systems, de-icing systems, icing tests, ice-accretion)
- cooling systems (turbomachinery, electronic devices)
- air conditioning for building and vehicles
- heat exchangers
- cooling problems in the domain of terrestrial (engines, under hood, etc.) and aerial vehicles (engines, landing gear brakes), space launchers (nozzle cooling), missiles
- flow control by energy deposition (plasma)
- thermal effects on sound generation and propagation
- multi physics approach (modelling aspects, numerical simulation coupling, thermal effects in aerodynamics)
- experimental techniques and numerical methods for wall heat flux prediction.

Keynote conferences

Abderrahmane BAĪRI
Eberhard BODENSCHATZ
José LONGO
Alexander WHITE
Israel WYGNANSKI

University Paris-West
Max Planck Institute
ESA - Technical Centre ESTEC
University of Cambridge
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Joël RENEAUX  
Jean-Pierre ROSENBLUM  
William S. SARIC  
Christophe SICOT  
Jean TENSI  

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University of Aix-Marseille  
Onera  
Dassault Aviation  
Texas A&M University  
ISAE-ENSMA  
3AF

Conference Location

European Doctoral College  
University of Strasbourg  
46 boulevard de la Victoire  
67000 STRASBOURG