

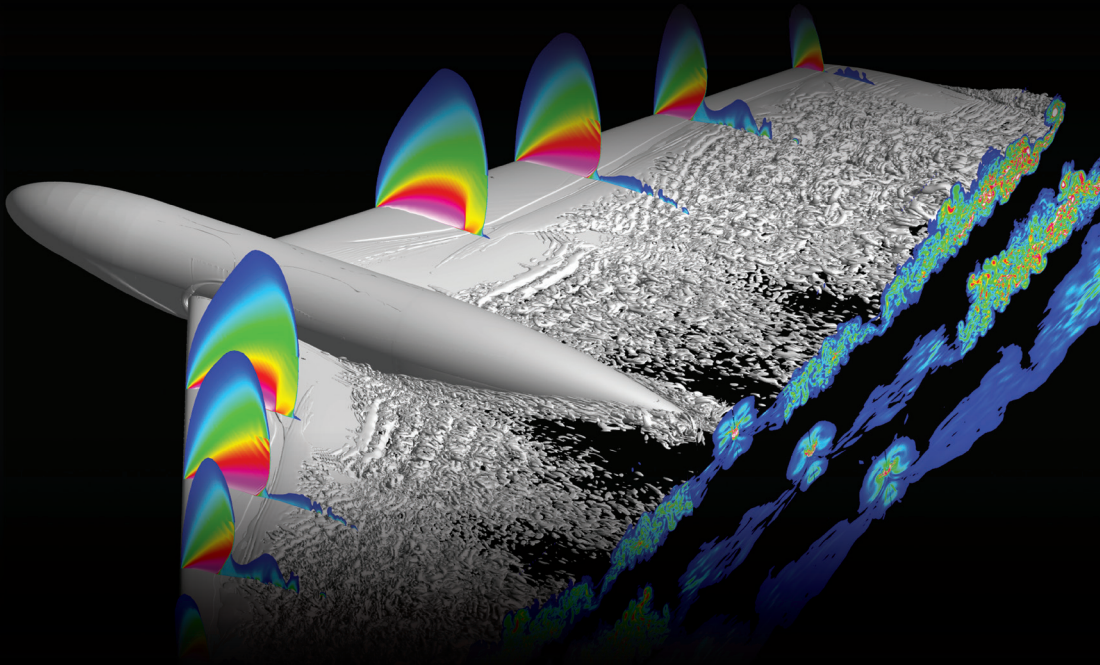
CALL FOR PAPERS



55th 3AF International Conference on Applied Aerodynamics Turbulent flows in Aerodynamic Applications

Poitiers, France - March 23-24-25, 2020

<http://3af-aerodynamics2020.com>



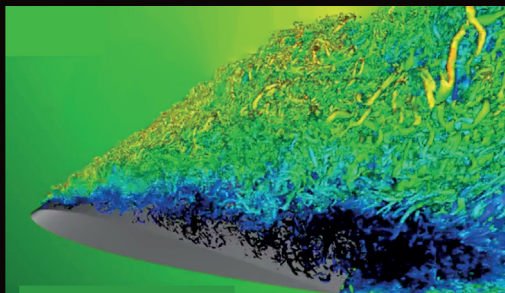
Wing wake © ONERA



CALL FOR PAPERS

Communication abstracts (300 to 500 words, preferably with figures) have to be mailed to the 3AF Executive Secretariat before **November 18, 2019**.

The Scientific Committee will inform the authors of acceptance by **December 16, 2019** at the latest.



Separated flow over a profile © ONERA-GENCI

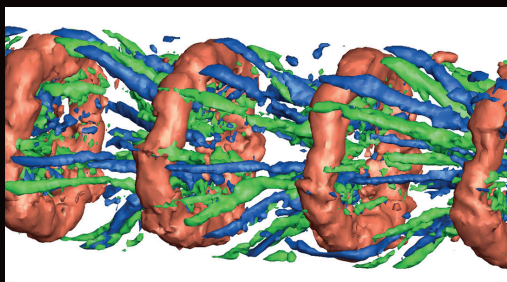
OFFICIAL LANGUAGE & PUBLICATIONS

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 Secretariat (aude.lurbe@aaaf.asso.fr) before **February 20, 2020** to allow their insertion in the conference proceedings. A 3AF template file will be provided for the preparation of the manuscript.

Authors will be invited to propose an extension of their works for publication in a special issue of the *International Journal of Numerical Methods for Heat & Fluid Flow* dedicated to the conference. Each paper is reviewed by the guest-editor and, if it is judged suitable for publication, it will be sent to at least two independent referees for peer review. It is also 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 18, 2019
Paper acceptance	December 16, 2019
Full length paper	February 17, 2020
Conference in Poitiers	March 23-24-25, 2020



Turbulent jet © ONERA

CONFERENCE SECRETARIAT COORDINATES

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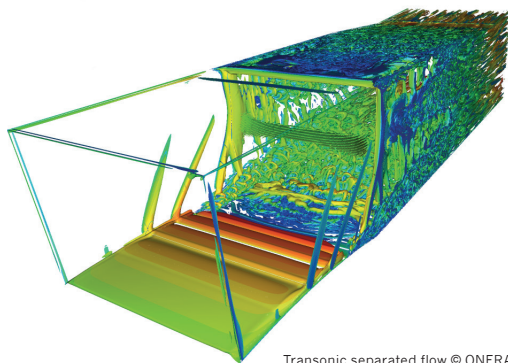
TURBULENT FLOWS IN AERODYNAMIC APPLICATIONS

The 3AF International Conference on Applied Aerodynamics is an annual event organised by the French Aeronautics and Aerospace Society (3AF) at French venues known for their activity in the field of aeronautics and/or aerospace technology. The Conference is an excellent opportunity for scientific exchange between scientists from industry, research institutions and academia. Scientists and engineers from other fluid mechanics fields are also welcome.

Each year the Conference addresses a different topic in the field of aerodynamics. It is organised on the basis of five half-days of technical presentations, each introduced by a keynote conference given by a recognised expert. The Conference is concluded by a technical visit in connection with the conference subject.

In 2020, the Conference will be hosted by the Pprime Institute (CNRS, ISAE-ENSMA, University of Poitiers) in Poitiers. This 55th 3AF International Conference on Applied Aerodynamics (AERO2020) focuses on **Turbulent flows in Aerodynamic Applications**.

Turbulent flow regimes, compressible or otherwise, are omnipresent in high-Reynolds-number aerodynamic systems. Accurate prediction is required to anticipate and optimise the performance of new concepts. Optimisation is particularly important where the reduction of chemical and noise pollution is concerned. Robustness and safety for real weather and varying environmental conditions are also critical for aeronautical/terrestrial transportation and for renewable energy industries. These constraints have driven significant progress in the academic and industrial communities in recent years, for instance in the fields of Hybrid, Large-Eddy simulation and Lattice-Boltzmann approaches for the modelling and analysis of unsteady industrial flows; or in the development of measurement methodologies that are now frequently used in the context of data-driven modelling. New theoretical frameworks have appeared for the description of out-of-equilibrium turbulence, and for the reduction and modelling of coherent structures and their sound radiation. These frameworks provide a foundation for the development of flow-control strategies. The prediction of transition to turbulence in complex flows, particularly important in the aeronautical sector, is also an active domain.



Transonic separated flow © ONERA

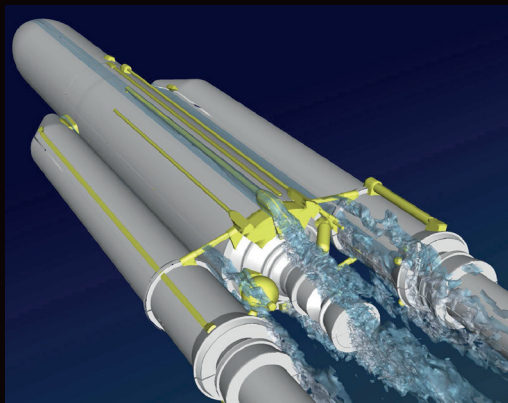
MAIN TOPICS

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

- **Turbulence modelling for analysis of unsteady industrial flows.** URANS, hybrid and LES methodologies, Lattice-Boltzmann methods.
- **Fundamentals: non-equilibrium turbulence physics for faithful representation of reality.**
- **Data-driven methods.**
- **Advances in measurement methodologies, data processing and wind tunnel experimentation.**
- **Coherent structures, stability approaches, reduced order modelling.**
- **Turbulent flow control methodologies.**
- **Laminar to turbulent transition.**
- **Aeroacoustics and turbulent sound sources.**
- **Turbulent compressible flows.**

KEYNOTE CONFERENCES

Sébastien DECK	ONERA
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Philippe SPALART	Boeing
Ulrich RIST	Stuttgart University
John Christos VASSILICOS	Imperial College



Ariane 5 afterbody © ONERA

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Cylinder wake © ONERA

Conference Location

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