CALL FOR PAPERS

3AF
Association Aéronautique
et Astronautique de France

61st 3AF International Conference on Applied Aerodynamics

Aerodynamics for Sustainable Transport and Energy

Montréal, Canada – June 28-30, 2027

www.3af-aerodynamics.com



Unsteady Aerodynamic interactions on the GULLHYVER configuration, featuring open-rotor engines and high-aspect-ratio braced wings.- Credit: ONERA

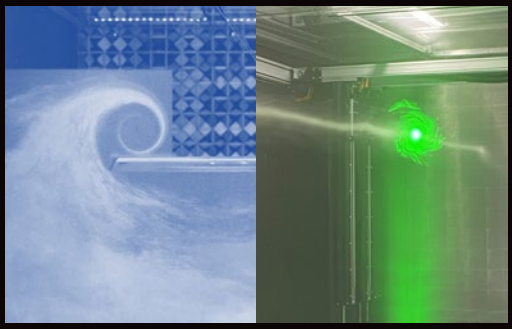
POLYTECHNIQUE MONTRÉAL
ISAE SUPAERO
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CEAS Council of European Aerospace Societies
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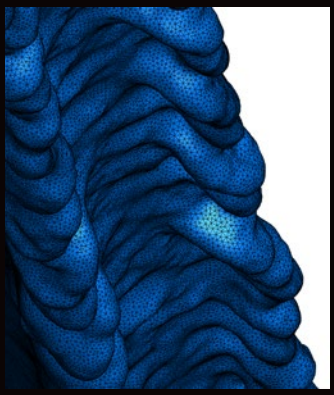
OFFICIAL LANGUAGE & PUBLICATIONS

Communication abstracts (300 to 500 words, preferably with figures) must be submitted on the dedicated website www.3af-aerodynamics.com by **January 11, 2027**.

The Scientific Committee will inform authors of acceptance by **February 01, 2027**, at the latest.



Wingtip vortex visualisation at NTUT Wind tunnel
Credit: ONERA / Norwegian University of Science & Technology



Lobster tail ice accretion on aircraft wing –
Credit: Polytechnique Montréal

Papers must be submitted and presented in English. The written version of each communication will be in English and must be submitted on the website www.3af-aerodynamics.com by **June 7, 2027**, to allow its inclusion in the conference proceedings. A 3AF template file will be provided for manuscript preparation.

The authors of the most instructive contributions will be invited to submit extended versions of their work for possible publication in a special issue of the International Journal of Heat and Fluid Flow. This special issue does not constitute the conference proceedings. Each submitted paper will be reviewed by the Guest Editor-in-Chief and the Advisory Editor of the journal. If the article is judged suitable for publication, it will be sent to at least two independent referees for peer review through the journal's rigorous evaluation process. Authors are nevertheless free to publish their paper in any other journal; a reference to the conference would then be appreciated.

CONFERENCE DEADLINES

Abstract Submission:	**January 11, 2027**
Paper acceptance:	**February 01, 2027**
Full Length Paper:	**June 7, 2027**
Conference in Montréal:	**June 28-30, 2027**



SWIFT configuration - supported by Clean Aviation - Credit: ONERA

CONFERENCE SECRETARIAT COORDINATES

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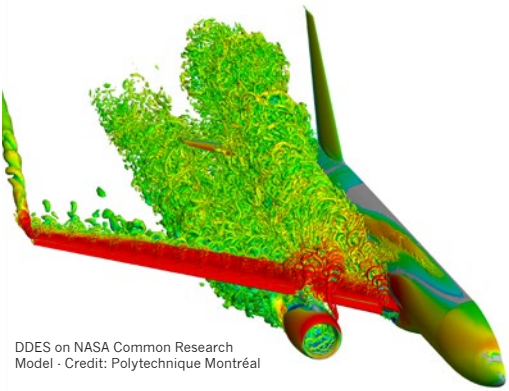
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AERO2027

Aerodynamics for Sustainable Transport and Energy

For the first time in its sixty-one-year history, the 3AF International Conference on Applied Aerodynamics will be held outside France. In 2027, the conference, organized by the 3AF Aerodynamics Technical Committee in collaboration with leading Canadian universities, will be hosted by Polytechnique Montréal, Canada.



DDES on NASA Common Research Model · Credit: Polytechnique Montréal

AERO2027, focusing on the timely and critical theme Aerodynamics for Sustainable Transport and Energy, will cover both external and internal aerodynamics, including experimental, theoretical, and numerical aspects, ranging from fundamental research to industrial applications.

This edition invites researchers, engineers, and industry leaders to explore cutting-edge advancements in aerodynamic theory, experimentation, and computational modelling across diverse domains—from aircraft design and sustainable propulsion to urban air mobility, space launchers, ground vehicles, and renewable energy systems. **Join us in Montréal as we shape the future of aerodynamics for a sustainable world.**

KEYNOTE SPEAKERS

ALAUZET Frédéric	Director of Research, INRIA, France
BLANC Sébastien	eXtra performance WING Technical Director, Airbus, France
DeBLOIS Antoine	MDO Project Manager, Bombardier, Canada
THOMASSIN Jean	Executive Director New Products, Pratt & Whitney Canada
ZINGG David W.	Prof. Computational Aerodynamics, University of Toronto, Canada

MAIN TOPICS

This event will explore the following domains, among others:

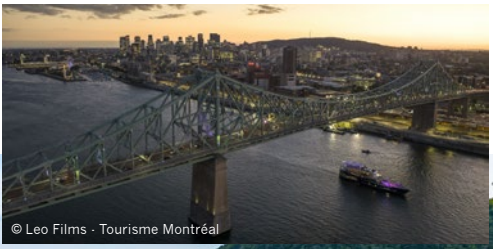
- **Aircraft Configuration & Design:** Aerodynamic optimization; wingtip motion management and aeroelasticity; high-aspect-ratio wings and aeroelastic tailoring; morphing and adaptive wing
- **Turbomachinery, Aircraft Propulsion & Energy Integration:** Boundary-layer ingestion (BLI) aerodynamics; distributed electric, hybrid-electric, and hydrogen propulsion; thermal management and cooling drag; compressor and turbine aerodynamics; unsteady rotor-stator interactions; noise; sustainable propulsion
- **Flow Control & Drag Reduction:** Natural laminar flow; transition prediction and control; active and passive flow-control techniques; turbulent drag-reduction strategies; shock-wave boundary-layer interaction (SBLI) management
- **Rotorcraft, Urban Air Mobility & eVTOL:** Rotor aerodynamics; transition flight: rotor-wing interaction and interference; noise reduction for urban operations; aerodynamic efficiency in hover, transition, and cruise; gust and turbulence response in urban environments
- **Space Launchers & Rockets:** Supersonic and high-speed aerodynamics; vibro-acoustics prediction and mitigation; hypersonic-flow physics and thermal protection; reusable stages descent and landing; retro-propulsion
- **Ground Vehicles:** EV aerodynamics: drag vs. battery-range optimization; sensor/camera soiling for autonomous-driving perception systems; active aerodynamic devices, such as adaptive spoilers and underbody flaps
- **Renewable Energy and Industrial Aerodynamics:** Wind-turbine aeroelasticity and aeroacoustics; airborne wind energy and dynamic unsteady modelling; ventilation systems; heat exchangers
- **Environmental & Operational Challenges:** Icing and de-icing system aerodynamics; aeroacoustics: airframe noise, jet noise, and community noise; wake-vortex prediction and mitigation; high-altitude and low-Reynolds-number aerodynamics
- **Computational Methods / CFD:** Advanced simulations (LES, DES, LBM, hybrid RANS-LES) for turbulent, separated, and vortex-dominated flows, high-lift aerodynamics, and exascale/HPC scaling, enhanced by machine learning and real-time data fusion
- **Experimental / Measurement Techniques:** Optical, non-intrusive techniques (time-resolved PIV, pressure-sensitive paint/PSP); unsteady/fast-response PSP for separated-flow analysis; icing and cryogenic testing; CFD-experiment fusion and data assimilation

EXECUTIVE PROGRAMME COMMITTEE

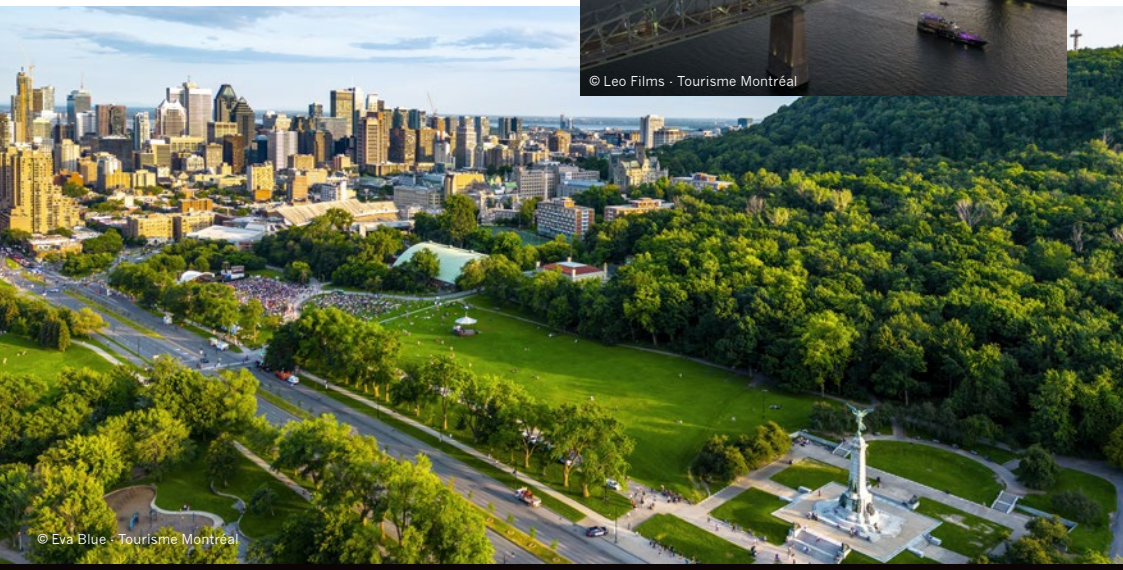
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CONFERENCE LOCATION

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