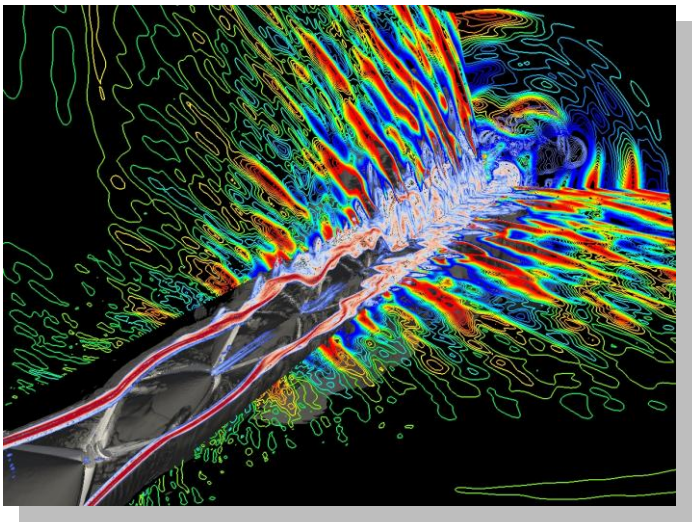
22nd AIAA/CEAS Aeroacoustics Conference

Lyon, France – 30 May – 1 June, 2016

www.aeroacoustics2016.com



The Conference

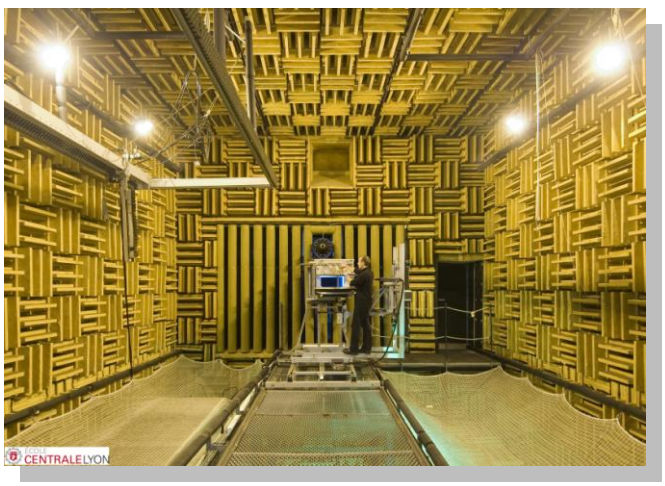
The AIAA/CEAS Aeroacoustics Conference has established itself as the premier international forum for the field of aeroacoustics. It offers scientists and engineers from industry, government, and universities an exceptional opportunity to exchange knowledge and results of current studies and to discuss directions for future research. Papers that address all aspects of the generation, propagation, and control of vehicle noise, as well as the effect of noise on structures and individuals are being sollicitated. The program's technical content will include theoretical, experimental, and numerical contributions that describe original research results and/or innovative design concepts.

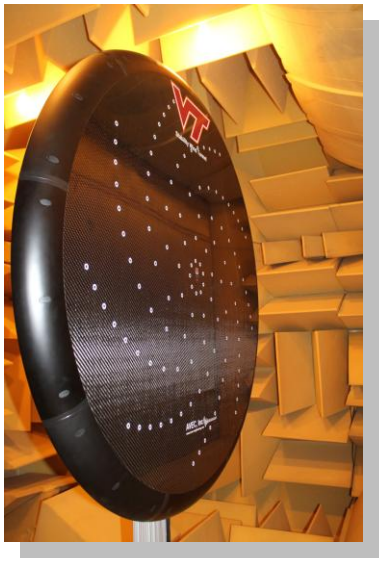
In addition, in-depth reviews and timely surveys will be considered. Topics for the conference are listed below. Studies in other related areas, particularly the application of aerospace noise suppression technologies in other industries, and papers pertaining to non-aerospace research with potential application to the aerospace industry are encouraged.

CALL FOR PAPERS AND ANNOUNCEMENT

Student Paper Award

Undergraduate and graduate students are encouraged to submit papers for consideration in the *Aeroacoustics Student Paper Competition*. Student papers should report on thesis work conducted by students in collaboration with faculty advisors. The student submitting a paper for consideration must be the primary author, and must have been a student at the time of the preceding AIAA/CEAS Aeroacoustics Conference. Papers submitted by students must be presented by the primary author at the conference. The student author of the best paper will receive a monetary award and certificate during the conference. The award will be selected on the basis of the technical quality of the paper, including its presentation. Papers not received by the student paper submission deadline or not presented by the student at the conference will not be considered for the award.





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Conference Topics

Acoustic/Fluid Dynamics Interactions
Analysis, measurements and control of subsonic and supersonic flows, vortex-driven flows, reacting and non-reacting flows, combustion instabilities, flow-acoustic interactions and resonance, and flow receptivity to acoustic disturbances.

Active Control of Noise, Vibration and Flows
Active control of noise and related unsteady flows and vibration; noise cancellation through active acoustic treatments and active source control as related to noise and vibration in the cabin and within engine ducts and jets; development of associated sensors and actuators, and feedback and feed-forward control strategies.

Advanced Testing Techniques
Development and application of novel testing techniques, advanced diagnostic methods and test facilities. Topics of particular interest are detailed measurements of mean and turbulent flow phenomena that contribute to noise generation and/or affect the radiated sound; source localization including phased arrays ; properties of sound-absorbing materials; interior-noise test facilities, including source simulation and noise-path identification; and comparison of model and full-scale testing.

Airframe/High-Lift Noise
Noise source mechanisms of flow/surface interaction as related to airframe acoustics. Measurement, analysis and prediction methods for wing, flap, slat and landing gear noise. Noise reduction strategies including devices and methods of circulation and boundary layer control.

Community Noise and Metrics
Response of individuals and the community to aircraft noise, including noise from rotating wings, prop-fans, subsonic and supersonic jets and sonic boom. Virtual acoustic simulations. Noise assessment methodologies and criteria for acceptability. Tools for land-use planning with respect to aircraft noise. Development of airport noise reduction strategies and airport noise monitoring methods. Noise abatement procedures.

Computational Aeroacoustics
Development of innovative numerical techniques for aeroacoustics applications. Emphasis is placed on the ability of algorithms to simulate and/or tack accurately acoustics information from flows, and on the development of proper boundary conditions for aeroacoustic applications. Applications are sought in areas of sound generation by turbulence, unsteady flows or moving boundaries; and propagation, transmission, and scattering of sound through non-uniform flows

Duct Acoustics
New and innovative methods to analyze, predict, and control the turbomachinery noise propagating through nacelle ducts. A topic of particular interest is lightweight passive and active/adaptive liners to control the noise in ducts.

General Acoustics
Theoretical, numerical, and experimental research involving all areas of physical acoustics and those involving noise associated to commercial systems.

Integration Effects and Flight Acoustics
Aeroacoustics effects of propulsion and airframe integration. Understanding and prediction of noise source modifications originating from the interaction of flow and/or acoustics propagation mechanisms. Noise reduction approaches based on aspects of propulsion and airframe system integration or aircraft configuration. Integrated test model and flight vehicle acoustic experimental and/or prediction research.

Interior Noise/Structural Acoustics
Reduction of interior noise and vibration associated with aircraft, launch vehicles, automobiles and trains. Noise transmission through structures, vibro-acoustic testing and prediction methods. Acoustic meta materials.

Jet Aeroacoustics
Aerodynamics and aeroacoustics of jets focusing on identifying and modeling noise production mechanisms; near-field noise; shock noise; turbulence prediction and characterization for subsonic, supersonic, and circular, non-circular, and multi-stream jets including those associated with launch vehicles; and suppression methods for both subsonic and supersonic jet noise. Of particular interest are new aeroacoustic modeling methods and flow and noise diagnostics techniques; and the effects of jet heating.

Loads/Sonic Fatigue
Prediction, testing, design, and control of sonic fatigue; sources of fluctuating loads on structures; jet/structure interactions; flow-resonance phenomena; structural and material stress-strain responses; and high temperature effects.

Propeller, Rotorcraft and V/STOL Noise
Conventional and advanced single and counter rotating propellers; tonal and broadband noise, propagation and ground reflection effects, fuselage boundary layer refraction and scattering, noise source control, effects of inflow distortions, and installation effects. Rotorcraft source studies, including rotor harmonic noise, high speed impulsive and blade/vortex interaction noise, blade/turbulence interaction noise, jet/surface interaction noise including both ground and aircraft surfaces. Components and system noise prediction and validation, ground and flight test measurements, and noise control/reduction strategies.

Sonic Boom
Modeling and prediction of noise from supersonic aircraft. Methods for sonic boom prediction, minimization through design and/or operation, response studies and metrics; atmospheric effects on sonic boom propagation, including refraction, diffraction, absorption and scattering by turbulence.

Turbomachinery and Core Noise
Generation, propagation and control of noise from fans, compressors and turbines; combustion noise; propagation and interaction with the mean flow field; transmission and reflection from blade and vane rows; control using active or passive techniques; and measurement techniques for source identification.

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Important Dates

9 November 2015
Extended abstract due

2 February 2016
Notification to authors

20 April 2016
Complete manuscript for student competition e-mailed to Educational Subcommittee Chair

27 April 2016
Complete manuscript submitted for on-line proceedings

Contact Information

Questions about the abstracts themselves should be referred to:

AIAA Technical Co-Chair
William J. Devenport / devenport@vt.edu

CEAS Technical Co-Chair
Denis Gely / denis.gely@onera.fr

Administrative Chair
Daniel Juvé / daniel.juve@ec-lyon.fr

Interested students should select "Student Paper Submission" as the presentation type when submitting their extended abstract and send an e-mail to the Organizing Committee (denis.gely@onera.fr and daniel.juve@ec-lyon.fr) stating that you want your paper to be considered for the student paper award. A copy of their manuscript must also be sent to the Education Subcommittee Chair (s.w.rienstra@tue.nl) no later than 25 April 2016. Please use "Student Paper Manuscript" as the subject line of your e-mail.

Abstract Instructions

An extended abstract of at least 1000 words, with key figures and extended references to existing publications is required. Authors must clearly identify in the abstract new or significant aspects of their work. Abstract reviewers will base their recommendations on acceptance or rejection on:

- Whether the abstracts meets the requirements described above
- The relevance of the work
- The originality of the work,
- Contribution to the field: does it advance the current state of knowledge ?
- Are significant results presented to ensure timely completion of the paper ?

Abstracts will be due no later than 9 November 2015. Authors will be notified of paper acceptance by 2 February 2016. An Authors Kit, containing detailed instructions and guidelines for submitting papers to AIAA, will be made available to authors of accepted papers. Authors of accepted papers must provide a complete manuscript to AIAA online by 27 April 2016 for inclusion in online proceedings and for the right to present at the conference It is the responsibility of those authors whose presentations or papers are accepted to ensure that a representative attends to present the paper. Sponsor and/or employer approval of each paper is the responsibility of the author. Authors should determine the extent of approval necessary early in the paper presentation process to preclude paper withdrawals or late submission. Abstracts submissions to the conference will be available online.

"No Paper, No Podium" and "No Podium, No Paper" Policies

If a written paper is not submitted by the final manuscript deadline, authors will not be permitted to present the paper at the conference. It is the responsibility of those authors whose papers or presentations are accepted to ensure that a representative attends the conference to present the paper in person. If a paper is not presented in person at the conference, it will be withdrawn from the conference proceedings. These policies are intended to eliminate no-shows and to improve the quality of the conference for attendees.

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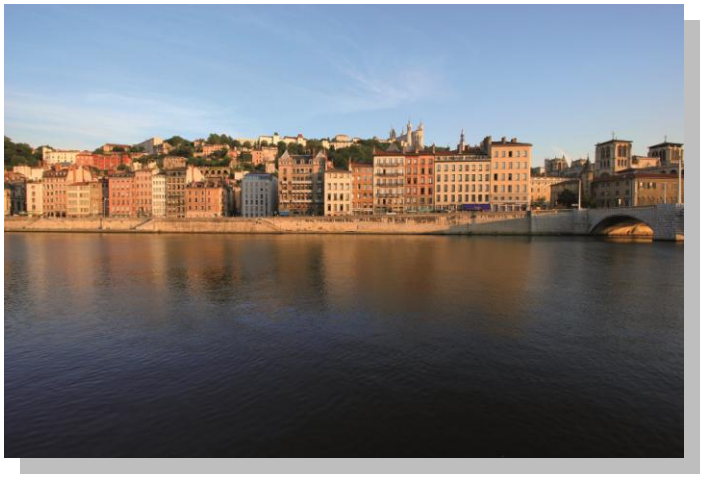

Lyon, sits at the confluence of the Rhône and Saône rivers. Its city center reflects 2,000 years of history, with a Roman amphitheater in Fourvière, medieval and Renaissance architecture in Vieux Lyon, and the modern, redeveloped Confluence district on the Presqu'île peninsula between the rivers. Traboules, covered passageways between buildings, connect Vieux Lyon and La Croix-Rousse hill.

The city is known for its historical and architectural landmarks and is a UNESCO World Heritage Site. Lyon was historically known as an important area for the production and weaving of silk. Since the late 20th century, it has developed a reputation as the capital of gastronomy in France and in the world

Lyon–Saint Exupéry Airport, located east of Lyon, serves as a base for domestic and international flights. **With its in-house train station (Gare de Lyon Saint-Exupéry), the airport is also connected to the TGV network.** Since August 2010, the new Rhônexpress tram links the international airport with the business quarter of La Part Dieu in less than 30 minutes and can reach up to 100 km/hour; it offers connections with Underground A&B, Tramway T1,T2 & T3, and many bus lines.

Between the River Rhône and the Parc de la Tête d'Or, lies an events complex that is unique in Europe. The Lyon Convention Centre dominates this complex with its cutting-edge technology and innovative architecture, boasting 25,000 m2, three auditoriums and numerous meeting rooms. La Cité internationale offers all the elements of a modern city in tune

CITE | CENTRE DE CONGRES | LYON

50 Quai Charles de Gaulle
69463 Lyon cedex 06
Tél. : +33 (0)4 72 82 26 26

info@ccc-lyon.com
http://www.ccc-lyon.com

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