

19th AIAA/CEAS Aeroacoustics Conference 2013

34th AIAA Aeroacoustics Conference

**Berlin, Germany
27-29 May 2013**

Volume 1 of 5

ISBN: 978-1-62748-888-4

Printed from e-media with permission by:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571



Some format issues inherent in the e-media version may also appear in this print version.

The contents of this work are copyrighted and additional reproduction in whole or in part are expressly prohibited without the prior written permission of the Publisher or copyright holder. The resale of the entire proceeding as received from CURRAN is permitted.

For reprint permission, please contact AIAA's Business Manager, Technical Papers. Contact by phone at 703-264-7500; fax at 703-264-7551 or by mail at 1801 Alexander Bell Drive, Reston, VA 20191, USA.

TABLE OF CONTENTS

VOLUME 1

Experimental Study of Noise Generation by a Turbulent Premixed Flame	1
<i>Lipika Kabiraj, Holger Nawroth, Aditya Saurabh, Christian O. Paschereit</i>	
Modelling Thermo-acoustic Instabilities of an Anchored Laminar Flame in a Simple Lean Premixed Combustor: Including Hydrodynamic Effects	8
<i>Charles M. Luzzato, Raphael Assier, Aimee Morgans, Xuesong Wu</i>	
Combustion Modeling Effects on the Thermoacoustic Sources of a Laminar Premixed Flame	23
<i>Georg Geiser, Stephan Schlimpert, Wolfgang Schroeder</i>	
Flame Instability Under the Influence of Its Spontaneous Sound	32
<i>Raphael Assier, Xuesong Wu</i>	
The Effect of a Boundary Layer on Engine Noise propagating to the Fuselage at Flight Conditions	40
<i>Juergen Dierke, Roland Ewert, Jan Delfs, Christian Stoehr, Marco Rose</i>	
Parametric Guidance for Turbulent Noise Reduction from Poroelastic Trailing Edges and Owls	54
<i>Justin Jaworski, Nigel Peake</i>	
Trailing-Edge Noise Modeling and Validation for Separated Flow Conditions	68
<i>Chan Yong Schuele, Karl-Stephane S. Rossignol</i>	
An Analytical Investigation of Trailing Edge Noise Reduction Using Novel Serrations	81
<i>Mahdi Azarpeyvand, Mathieu Gruber, Phillip Joseph</i>	
Tonal Noise from Trailing Edge Serrations at Low Reynolds Number	98
<i>Danielle Moreau, Con J. Doolan</i>	
An Experimental Investigation of Novel Trailing Edge Geometries on Airfoil Trailing Edge Noise Reduction	114
<i>Mathieu Gruber, Phillip Joseph, Mahdi Azarpeyvand</i>	
Airfoil Noise Analysis Using Symbolic Regression	137
<i>Ennes Sarradj, Thomas F. Geyer</i>	
DNS of a Compliant Trailing-Edge Flow	152
<i>Stefan C. Schlanderer, Richard D. Sandberg</i>	
Correlation of Aircraft Certification Noise Levels EPNL with Controlling Physical Parameters	170
<i>Ulf Michel</i>	
Community Noise Prediction of Digital High Speed Train Using LBM	187
<i>Mohammed Meskine, Franck Perot, Min-Suk Kim, Dave M. Freed, Siva Senthoooran, Zen Sugiyama, Francesco Polidoro, Sebastien Gautier</i>	
Full-field, Dynamic Pressure and Displacement Measurements of a Panel Excited by Shock Boundary-layer Interaction	204
<i>Stephen M. Spottswood, Thomas Eason, Timothy Bebermiss</i>	
A Time-domain Equivalent Source Method for Acoustic Scattering with Coincident Source and Control Points	222
<i>S. Hales Swift, Gregory A. Blaisdell, Anastasios S. Lyrintzis</i>	
An Efficient Solution of Time Domain Boundary Integral Equations for Acoustic Scattering and Its Acceleration by Graphics Processing Units	243
<i>Fang Q. Hu</i>	
A 3D Frequency-domain Linearised Euler Solver Based on the Goldstein Acoustic Analogy Equations for the Study of Nonuniform Meanflow Propagation Effects	279
<i>Vasily A. Semiletov, Sergey A. Karabasov</i>	
CFD-CAA Coupled Computation of Fan Noise Propagation from Engine Nacelle Based on Cartesian Mesh Method	285
<i>Yuma Fukushima, Takashi Misaka, Shinkyu Jeong, Shigeru Obayashi, Daisuke Sasaki, Kazuhiro Nakahashi</i>	
High-Order Pressure-based Solver for Aeroacoustic Simulations	296
<i>Hong Q. Yang, Zhijian Chen, Jonathan G. Dudley</i>	
Prediction of In-duct and Near-field Noise for a Fan Rig Intake	319
<i>Rie Sugimoto, Paul Murray, Alan McAlpine, R. Jeremy Astley</i>	
Prediction of Transmission Loss for Two Turboprop Engine Inlet Designs	330
<i>Lysbeth S. Lieber, Donald Weir, Yogi Sheoran</i>	
Sound-turbulence Interaction in Low Mach Number Duct Flow	342
<i>Chenyang Weng, Ardeshir Hanifi, Susann Boij</i>	
Aeroacoustics of Rectangular T-junctions Subject to Combined Grazing and Bias Flows - An Experimental Investigation	360
<i>Andreas Holmberg, Mikael Karlsson, Mats Åbom</i>	
Corrugated Pipe Segment with Anechoic Termination: Critical Mach Number for Whistling	369
<i>Oleksii Rudenko, Gunes Nakiboglu, Ad P. Holten, A. Hirschberg</i>	
Experimental Reproduction of Random Pressure Fields for Vibroacoustic Testing of Plane Panels	387
<i>Olivier Robin, Alain Berry, Stephane Moreau, Simon Campeau</i>	
Examination of the Influence of Flight Altitude and Speed on the Efimtsov Model Parameters	410
<i>Stefan Haxter, Carsten Spehr</i>	
Flow-Induced Input of Sound to the Interior of a Simplified Car Model Depending on Various Setup Parameters	425
<i>Stefan Müller, Stefan Becker, Christoph Gabriel, Reinhard Lerch, Frank Ullrich</i>	
Contributions of Different Aeroacoustic Sources to Aircraft Cabin Noise	442
<i>Nan Hu, Heino Buchholz, Michaela Herr, Carsten Spehr, Stefan Haxter</i>	

Interior Analysis of Impulse Noise from Weapons in a Perspective on Damage Risk Using the Alternative Image Theory	452
<i>Byunghak Kong, Sung-Soo Jung, Eunkuk Son, Soogab Lee, Kee Hyeok Song</i>	
A Comprehensive Approach for the Optimal Control of Tiltrotor Cabin Noise Through Actively-Driven Piezoelectric Actuators	462
<i>Giovanni Bernardini, Claudio Testa, Marco Molica Colella, M. Gennaretti</i>	
Experimental Investigation of Near-Field Pressure Fluctuations Generated by Supersonic Jets	479
<i>Ching-Wen Kuo, Quentin Buisson, Dennis K. McLaughlin, Philip J. Morris</i>	
Analysis of Simultaneous Measurement of Acoustic Pressure in the Far-field and Density Gradient in the Near-field in a Cold Jet	498
<i>Elena Miguel, Arne Henning</i>	
Acoustic Characterization of Compact Jet Engine Simulator Units	513
<i>Michael J. Doty, Henry Haskin</i>	
A Single-stream Jet Noise Prediction Model for a Family of Chevron Nozzles	532
<i>N. K. Depuru Mohan, Ann Dowling</i>	
Fine-scale Turbulent Noise Predictions from Non-axisymmetric Jets	544
<i>Lawrence Cheung, Nikolai Pastouchenko, Ramani Mani, Umesh Paliath</i>	
The Prediction of Jet Noise Ground Effects using an Acoustic Analogy and a Tailored Green's Function	559
<i>Steven A. Miller</i>	
Numerical Investigation of Passive Flow Controls in Subsonic jet Flow and Noise	574
<i>Rafael C. Engel, Cesar J. Deschamps, Carlos R. Ilario Da Silva</i>	
Prediction of Hot Jet Mixing Noise Using Extended Stochastic Source Correlations	586
<i>Andrej Neifeld, Roland Ewert, Marco Rose, M. Steger</i>	
The Effects of Surfaces on the Aerodynamics and Acoustics of Jet Flows	609
<i>Matthew J. Smith, Steven A. Miller</i>	
Compressor Stage Broadband Noise Prediction using a Large-Eddy Simulation and Comparisons with a Cascade Response Model	630
<i>Jerome De Laborderie, Stephane Moreau, Alain Berry</i>	
Tonal Noise Control of Centrifugal Fan Using Flow Obstructions - Experimental and Numerical Approaches	652
<i>Stephan Magne, Marlene Sanjose, Stephane Moreau, Alain Berry, Anthony Gerard</i>	
Numerical Prediction of the Aerodynamic Noise Generated by a Supersonic Centrifugal Compressor	665
<i>Peng Wang, Mehrdad Zangeneh</i>	
An Experimental Investigation of the Spectral Properties of the Tonal Noise Generated by Axial Flow Fans with and Without Rotor-stator Interaction	676
<i>Edward Canepa, Andrea F. Cattanei, Fabio Mazzocut Zecchin</i>	
Experimental Study of the Effect of the Rotor-stator Gap Variation on the Tonal Noise Generated by Low-speed Axial Fans	690
<i>Edward Canepa, Andrea F. Cattanei, Fabio Mazzocut Zecchin, Gabriele Milanese, Davide Parodi</i>	
Measurements Compared to Analytical Prediction of the Sound Emitted by a High-speed Fan Stage	705
<i>Antoine Moreau, Sebastian Oertwig</i>	
Sound Radiation from Rounded Steps and Gaps	727
<i>Manuj Awasthi, Benjamin Bryan, William Devenport, Stewart Glegg</i>	
An Investigation of Passive Control Methods for a Large Scale Cavity Model in High Subsonic Flow	753
<i>Varun Thangamani, Alistair Saddington, Kevin Knowles</i>	
Acoustic and Aeroacoustic Characterization of Rectangular Partial Enclosures	767
<i>Tiziano Pagliaroli, Roberto Camussi</i>	
Facing Rim Cavities Fluctuation Modes	778
<i>Damiano Casalino, Andre F. Ribeiro, Ehab Fares</i>	
Some Numerical Studies of Rectangular Open Cavities at Mach 2	798
<i>Vikram Sridhar, Sudhir Gai, Harald Kleine</i>	
High Dynamic Range Measurements of Acoustic Particle Velocity and Flow Velocity for the Application at Liners	814
<i>Daniel Haufe, Andreas Fischer, Jürgen Czarne, Anita Schulz, Friedrich Bake, Lars Enghardt</i>	
Aeroacoustic Source Identification Measurements Coupling Time-Resolved PIV and Array Signal Processing	822
<i>Miguel Garcia-Pedroche, Gareth Bennett</i>	
The Acoustic-particle Velocity in the Vicinity of a Liner: A PIV - CAA Comparison	850
<i>Andre Fischer, Friedrich Bake, Alessandro Bassetti</i>	
Linear Programming Acoustic Beamforming Versus Other Deconvolution Methods For A Full Scale 1.5 MW Wind Turbine	867
<i>Rakesh Chandran Ramachandran, Ganesh Raman, Robert P. Dougherty</i>	

VOLUME 2

Measurement of the Wavenumber-frequency Spectrum of Wall Pressure Fluctuations: Spiral-shaped Rotative Arrays with Pinhole-mounted Quarter Inch Microphones	881
<i>Olivier Robin, Stephane Moreau, Thomas Padois, Alain Berry</i>	
Measurement of the Spatial Coherence of Surface Pressure in the Wake of a Car's Side Mirror	899
<i>Christoph Gabriel, Stefan Müller, Frank Ullrich, Reinhard Lerch</i>	
An Experimental Procedure for the Determination of Wake-airfoil Interaction Noise Parameters	913
<i>Leandro De Santana, Bence Toth, Christophe F. Schram</i>	

Flow Field Measurements to Characterize Flap Side-Edge Noise Generation	926
<i>Karl-Stephane S. Rossignol</i>	
Noise Generation Characteristics of a High-lift Swept and Tapered Wing Model	945
<i>Yuzuru Yokokawa, Mitsuhiro Murayama, Yasushi Ito, Hiroki Ura, Dong-Youn Kwak, Hiroshi Kobayashi, Shigemi Shindo, Kazuomi Yamamoto</i>	
Effect of Sweep on Chevron Slat Noise	965
<i>Victor F. Kopiev, Mikhail Zaitsev, Ivan Belyaev</i>	
An Aerodynamic Noise Reduction Study for Airframe Noise from Flap Tips	981
<i>Kazuhide Isotani, Kenji Hayama, Yuzuru Yokokawa, Mitsuhiro Murayama, Hiroki Ura, Kazuomi Yamamoto</i>	
Parameterization and Optimization of Broadband Noise for High-lift Devices	992
<i>Arnaud Fosso Pouangue, Chokri Mnasri, Stephane Moreau</i>	
Hybrid RANS/LES Simulations for Aerodynamic and Aeroacoustic Analysis of a Multi-Element Airfoil	1010
<i>Bastian Neberführ, Huadong Yao, Shia-Hui Peng, Lars Davidson</i>	
Numerical Investigation on Change of Airframe Noise by Flap Side-edge Shape	1038
<i>Mitsuhiro Murayama, Yuzuru Yokokawa, Kazuomi Yamamoto, Hiroki Ura, Taro Imamura, Tohru Hirai</i>	
Numerical Simulation of Landing Gear Noise via Weakly Coupled CFD-CAA Calculations	1057
<i>Stephane Redonnet, Guilherme Cunha, Saloua Ben Khelil</i>	
Detached-Eddy Simulation of Landing-Gear Noise	1075
<i>Liang Wang, Charles Mockett, Thilo Knacke, Frank Thiele</i>	
Acoustic Absorption of Porous Materials Using LBM	1084
<i>Franck Perot, David Freed, Adrien Mann</i>	
Aeroacoustic Simulation of Nose Landing Gear on Adaptive Unstructured Grids with FUN3D	1093
<i>Veer N. Vatsa, Mehdi R. Khorrani, Michael A. Park, David P. Lockard</i>	
Attenuation of Sound in Wide Ducts with Flow at Elevated Pressure and Temperature	1114
<i>Claus Lahiri, Karsten Knobloch, Friedrich Bake, Lars Enghardt</i>	
A Comprehensive Study on Non-Locally Reacting Liners, Part1: Experimental Investigation	1132
<i>Stefan Busse-Gerstengarbe, Steffen Nitsch, Friedrich Bake, Lars Enghardt</i>	
A Comprehensive Study on Non-Locally Reacting Liners, Part 2: Impedance Education and Liner Modeling	1146
<i>Junis Abdel Hay, Stefan Busse-Gerstengarbe, Christoph Richter, F. Thiele, Lutz Blohm, Lars Enghardt</i>	
The Effect of Boundary Layers on Bulk Reacting Liners at Low Mach Number Flows	1165
<i>Anna Färm, Susann Boij</i>	
Acoustic Characterization of a Helmholtz Resonator Under Grazing Flow Conditions Using a Hybrid Methodology	1172
<i>Hervé Denayer, Wim De Roeck, Thomas Toulorge, W. Desmet</i>	
Acoustical Behaviour of Purely Reacting Liners	1183
<i>Yves Auregan, Lei Xiong, Wenping Bi</i>	
Segmented Liner to Control Mode Scattering	1191
<i>Carl H. Gerhold, Michael G. Jones, Martha Brown</i>	
Experimental Study of Flight Effects on Slightly Underexpanded Supersonic Jets	1209
<i>Benoît André, Thomas Castelain, Christophe Bailly</i>	
Experimental Study of Shock-cell Noise in Underexpanded Supersonic Jets	1223
<i>Alessandro Savarese, Peter Jordan, Steve Girard, Erwan Collin, Mauro Porta, Yves Gervais, Alexandre Royer, Carine Fourment</i>	
Quantifying Crackle-inducing Acoustic Shock-structures Emitted by a Fully-expanded Mach 3 Jet	1238
<i>Woutijn J. Baars, Charles E. Tinney</i>	
Correlation Studies in the Acoustic Far-Field of Non-ideally Expanded Supersonic Jets	1257
<i>Ashwin K. Subramanyam, Karthikeyan Natarajan, Lakshmi Venkatakrishnan</i>	
Near-field Wavepackets and the Far-field Sound of a Subsonic Jet	1274
<i>David E. Breakey, Peter Jordan, Andre Cavaliere, Olivier Léon, Mengqi Zhang, Guillaume Lehnasch, Tim Colonius, Daniel Rodriguez</i>	
Wavepacket Education in Turbulent Jets Based on Eigenmode Decomposition of PIV Data	1296
<i>Daniel Rodriguez, Andre Cavaliere, Tim Colonius, Peter Jordan</i>	
Instability Wave Control in Turbulent Jet	1315
<i>Victor F. Kopiev, Mikhail Zaitsev, Georgy A. Faranosov, Vladimir Kopiev, Ivan Belyaev</i>	
A Comparison of the Silent Base Flow and Vortex Sound Analogy Sources in High Speed Subsonic Jets	1335
<i>Samuel Sinayoko, Anurag Agarwal</i>	
Nonlinear and Linear Noise Source Mechanisms in Subsonic Jets	1352
<i>Yamin B. Baqui, Anurag Agarwal, Andre Cavaliere, Samuel Sinayoko</i>	
The Effect of Base-flow Changes in Kelvin-helmholtz Instability	1365
<i>Andre Cavaliere, Anurag Agarwal</i>	
Vorticity Generated Sound and Jet Noise	1381
<i>Luigi Morino, Paolo Gradassi</i>	
Analysis of the Characteristic Acoustic Tones of an Impinging Jet	1403
<i>Giorgia Simibaldi, Giovanni Lacagnina, Luca Marino, Giovanni P. Romano</i>	
The Harmonics of Jet Screech Tones	1413
<i>Christopher K. Tam, Sarah A. Parrish, Krishna Viswanathan</i>	
WENEMOR: Wind Tunnel Tests for the Evaluation of the Installation Effects of Noise Emissions of an Open Rotor Advanced Regional Aircraft	1430
<i>Gareth J. Bennett, John Kennedy, Petr Eret, Filippo Cappadona, Antonello Bianco, Raffaele Letizia, Davide Danise, Lucille Lamotte, Christophe Picard, Arthur Finez, Paolo Castellini, Paolo Chiarotti, Francesca Sopranzetti, Demosthenis Tsalhalis, Haralobos Tsalhalis, Vassilios Moussas, Antonio Paonessa, Francesco Amoroso, Massimiliano Di Giulio</i>	

The Application of Advanced Beamforming Techniques for the Noise Characterization of Installed Counter Rotating Open Rotors	1439
<i>John Kennedy, Petr Eret, Gareth Bennett, Paolo Castellini, Paolo Chiariotti, Francesca Sopranzetti, Christophe Picard, Arthur Finez</i>	
A Parametric Study of Installed Counter Rotating Open Rotors	1447
<i>John Kennedy, Petr Eret, Gareth Bennett</i>	
A Method for Predicting the Tone Noise Produced by an Open Rotor in a Rectangular Wind Tunnel	1457
<i>Prathiban Sureshkumar, Michael Kingan, Anthony Parry</i>	
Validation of a Model for Open Rotor Noise Predictions and Calculation of Shielding Effects using a Fast BEM	1480
<i>Markus Lummer, Rinie A. Akkermans, Christoph Richter, Carsten Pröber, Jan Delfs</i>	
Broadband Noise of Axial Fans: an Experimental and Computational Benchmark Study	1504
<i>Alessandro Zanon, Michele De Gennaro, Helmut Kuehnelt, Domenico Caridi</i>	
Limitations of Phased Array Beamforming in Open Rotor Noise Source Imaging	1518
<i>Csaba Horváth, Gary G. Podboy, Edmane Envia</i>	
Thermoacoustic Analysis of a Full Annular Aero-engine Lean Combustor with Multi-perforated Liners	1528
<i>Andrea Giusti, Antonio Andreini, Bruno Facchini, Ignazio Vitale, Fabio Turrini</i>	
Indirect Combustion Noise: Experimental Investigation of the Vortex Sound Generation in Accelerated Swirling Flows	1545
<i>Nancy Kings, Lars Enghardt, Friedrich Bake</i>	
Extension of a Compressible Pressure-Based Solver for Reacting Flows	1556
<i>Jean-Michel Lourier, Berthold Noll, Manfred Aigner</i>	
Numerical Simulation of Acoustic and Entropy Waves Propagating Through Turbine Blades	1569
<i>Ignacio Duran, Stephane Moreau</i>	
Verification of the Inverse Cut-off Effect in a Turbomachinery Stage - Part 2 - Comparison to Experimental Results	1589
<i>Dominik U. Broszat, Thorsten Selic, Andreas Marn</i>	
A Comprehensive Numerical Study of Tone Noise Emissions in a Multistage Cold Flow Rig	1597
<i>Lorenzo Pinelli, Francesco Poli, Ettore Di Grazia, Andrea Arnone, Davide Torzo</i>	
Large Scale Inflow Distortions as a Source Mechanism for Discrete Frequency Sound from Isolated Axial Fans	1612
<i>Michael Sturm, Thomas Carolus</i>	
On the Turbulent Boundary Layers Developed on Flat Plate with a Serrated Trailing Edge	1627
<i>Alexandros Vathylakis, Tze Pei Chong</i>	
Reduction of Airfoil Turbulence-Impingement Noise by Means of Leading-Edge Serrations and/or Porous Material	1643
<i>Michel Roger, Christophe Schram, Leandro De Santana</i>	
Investigation of Laminar Detachment by Means of Simultaneous Microphone and Surface Hot Wire Measurements	1663
<i>Thomas Ahlefeldt, Arne Henning, Carsten Spehr, Francesca Sopranzetti</i>	
Investigation of Tonal Noise Generation on an Airfoil with Time-Resolved PIV	1675
<i>Stefan Pröbsting, Jacopo Serpieri, Fulvio Scarano</i>	
Acoustic Feedback-Loop Interactions in Transitional Airfoils	1685
<i>Vladimir V. Golubev, Lap Nguyen, Reda R. Mankbadi, Michel Roger, Miguel R. Visbal</i>	
An Investigation on the Near-field Turbulence and Radiated Sound for an Airfoil with Trailing Edge Serrations	1697
<i>Weiyang Qiao, Liang Ji, Kunbo Xu, Weijie Cheng, Fan Tong</i>	
Prediction of LAGOON Landing-gear Noise Using an Unstructured LES Solver	1716
<i>Jean-Christophe Giret, Alois Sengissen, Stephane Moreau, Jean-Christophe Jouhaud</i>	
Numerical Simulations of Flow over a Landing Gear with Noise Reduction Devices using the Lattice-Boltzmann Method	1738
<i>Daniel Armstrong, Alireza Najafiyazdi, Luc G. Mongeau, Vincent Raymond</i>	
Investigating Landing Gear Noise Using Fly-over Data: the Case of a Boeing 747-400	1750
<i>Irene C. Dedoussi, Thomas P. Hynes, Henri A. Siller</i>	

VOLUME 3

Characterization of Noise Generation on a Canonical Nose Landing Gear Sub-system	1760
<i>Nikolas S. Zawodny, Derek Dussault, Lawrence S. Ukeiley, Fei Liu, Louis N. Cattafesta</i>	
Phased Array Measurements of Tandem Cylinder Noise	1780
<i>Fangli Ning, Kanthasamy Chelliah, Rakesh Chandran Ramachandran, Ganesh Raman</i>	
The Influence of Aerodynamic Interactions between Components on Landing Gear Noise	1794
<i>Malcolm Smith, Leung Choi Chow, Nicolas Molin</i>	
Simultaneous Computation of Surface and Volume Sources for Fan Broadband Noise with the Random-Particle-Mesh Method	1801
<i>Attila M. Wohlbrandt, Sebastien Guerin, Roland Ewert</i>	
The Effects of Wavy Leading Edges on Airfoil-Gust Interaction Noise	1819
<i>Alex Siu Hong Lau, Jae Wook Kim</i>	
Investigation of Noise Sources in a Two-Dimensional Model Airframe Noise Problem with Wake Interaction	1846
<i>William Wolf, Bruno Backes, Joao Luiz F. Azevedo, Edemar Morsch Filho</i>	

Validation of a Direct Noise Calculation and a Hybrid Computational Aeroacoustics Approach in the Acoustic Far Field of a Rod-Airfoil Configuration	1861
<i>Alexander Schell</i>	
Benchmarking of Trailing-Edge Noise Computations---Outcome of the BANC-II Workshop	1875
<i>Michaela Herr, Mohammad Kamruzzaman</i>	
Comparative Study of Impedance Eduction Methods, Part 1: DLR Tests and Methodology	1908
<i>Stefan Busse-Gerstengarbe, Friedrich Bake, Lars Enghardt, Michael G. Jones</i>	
Comparative Study of Impedance Eduction Methods, Part 2: NASA Tests and Methodology	1921
<i>Michael G. Jones, Willie R. Watson, Brian M. Howerton, Stefan Busse-Gerstengarbe</i>	
Direct Numerical Simulation of Turbulent Flow with an Impedance Condition	1937
<i>Simone Olivetti, Richard D. Sandberg</i>	
Numerical Investigation of Acoustically Excited Flow Through an Orifice Using Lattice Boltzmann Method	1949
<i>Chenzhen Ji, Dan Zhao</i>	
The Effect of Combined High Level Acoustic Excitation and Bias Flow on the Acoustic Properties of an In-duct Orifice	1965
<i>Lin Zhou, Hans Boden</i>	
Dynamic Modeling and Numerical Simulation of Acoustic-Thermal-Fluid Coupling for Hypersonic Vehicle Fatigue Test	1978
<i>Wenjun Yu, Siyang Zhong, Xun Huang</i>	
Acoustic Cloaking in a Mean Flow	1993
<i>Siyang Zhong, Xun Huang</i>	
Analysis of Resonance Phenomena Caused by Obstacles in HVAC Exhaust Nozzles Using a Combined CFD-CAA Approach	2004
<i>Johannes Kreuzinger, Florian Schwertfirm, Michael Hartmann, Nikolaus Peller</i>	
A Time-Domain Analysis for Aeroacoustics-Structure Interaction of Flexible Panel	2015
<i>Ka Heng Fan, R. Leung, Garret Lam</i>	
An Iterative Approach for Aeroacoustics in a Non-potential-flow	2027
<i>Jean-Francois Mercier, Vincent Pagneux</i>	
Effects of Flow and Dissipation on Acoustical Behaviour of Complex Cavities	2034
<i>Yves Auregan, Vincent Pagneux</i>	
A Turbomachinery Noise Shielding Framework Based on the Modified Theory of Physical Optics	2042
<i>Dorian F. Colas, Zoltan Spakovszky</i>	
Large Eddy Simulation for Jet Installation Effects	2056
<i>Umesh Paliath, Sachin Premasuthan</i>	
Installation Effects of Landing Gears	2066
<i>David Angland, Xin Zhang</i>	
Large Eddy Simulations of Microjets Impact on Supersonic Jet Exiting a C-D Conical Nozzle	2078
<i>Bernhard Semlitsch, Mihai Mihaescu, Laszlo Fuchs, Ephraim J. Gutmark</i>	
Numerical Investigation of Temperature Effects on Properties of Subsonic Turbulent Jets	2095
<i>Christophe Bogey, Olivier Marsden</i>	
Influence of Boundary Layers Resolution on Heated, Subsonic, High Reynolds Number Jet Flow and Noise	2114
<i>Maxime Huet</i>	
Nozzle Wall Modeling in Unstructured Large Eddy Simulations for Hot Supersonic Jet Predictions	2130
<i>Guillaume A. Brès, Frank Ham, Joseph W. Nichols, Sanjiva K. Lele</i>	
Prediction of the Sound radiated from Low-Mach Internal Mixing Nozzles with Forced Mixers using the Lattice Boltzmann Method	2149
<i>Kaveh Habibi, Hao Gong, Alireza Najafiyazdi, Luc G. Mongeau</i>	
Supersonic Jet Noise Reduction Using Steady Injection and Flapping Injection	2164
<i>Haukur E. Hafsteinsson, Lars-Erik Eriksson, Niklas Andersson, Daniel R. Cuppoletti, Ephraim J. Gutmark, Erik Prisell</i>	
Jet-noise Control by Fluidic Injection from a Rotating Plug: Linear and Non-linear Sound Source Mechanisms	2188
<i>Maxime Koenig, André V. Cavalieri, Peter Jordan, Yves Gervais</i>	
Noise Reduction Concept Using Variable Exhaust Nozzle for Supersonic Aircraft	2200
<i>Junichi Akatsuka, Yasushi Watanabe, Tatsuya Ishii, Shinji Honami</i>	
Reduction of Subsonic Jet Noise by Passive Flow Control Devices	2209
<i>Robert Meyer, Ching-Wen Kuo, Dennis K. McLaughlin</i>	
Implementation of a Semi-analytical Method for Prediction of Fan Rotor-stator Interaction Broadband Noise	2227
<i>Carlos C. Brochine, Paulo Greco</i>	
Sum and Difference Scattering of Tonal Noise in Turbomachinery	2237
<i>Ian Davis, Gareth Bennett</i>	
Swirling Mean Flow Effect on Fan-trailing Edge Broadband Noise in a Lined Annular Duct	2256
<i>Helene Posson, Nigel Peake</i>	
Investigation of Fan Wake-OGV Interaction Broadband Noise	2283
<i>Hongbin Ju, Ramani Mani, Martin Vysohlid, Anupam Sharma</i>	
Simulation of Rotor Tip Leakage Vortex Broadband Noise using IDDES	2306
<i>Björn Greschner, Gregor Neuber, Frank Thiele</i>	
Prediction of Broadband Fan Exit Guide Vane Response	2319
<i>Sheryl M. Grace, Gilbert Forsyth</i>	
The Suppression of Helmholtz Resonance Using Inside Acoustic Liner	2328
<i>Zhiliang Hong, Xiwen Dai, Nianfa Zhou, Xiaodong Jing, Xiaofeng Sun</i>	

On the Higher Hydrodynamic Modes and the Onset of Whistling in Self-sustained Cavity Oscillations	2341
<i>Gunes Nakiboglu, Oleksii Rudenko, A. Hirschberg, Joachim Golliard, Nestor Gonzalez Diez</i>	
Numerical Analysis of the Acoustic and Flow Field Associated with Perforated Liners with Variable Acoustic Forcing	2351
<i>Cosimo Bianchini, Antonio Andreini, Bruno Facchini, Ignazio Vitale, Fabio Turrini</i>	
Validation of an FSI Modeling Framework for Internal Captive Carriage Applications	2362
<i>Srinivasan Arunajatesan, Michael R. Ross, Tyler J. Garrett</i>	
Numerical and Experimental Analysis of Flow-acoustic Interactions in an Industrial Gate Valve	2377
<i>Romain Lacombe, Philippe Lafon, Frederic Daude, Fabien Crouzet, Christophe Bailly, Samir Ziada</i>	
Aerodynamic and Acoustic Measurements of a Single Landing Gear Wheel	2388
<i>Zhaokai Ma, Xin Zhang, Malcolm Smith, Michael R. Sanderson</i>	
Noise Prediction from a Partially Close Slat Junction	2404
<i>Phoi-Tack Lew, Alireza Najafiyazdi, Luc G. Mongeau, Stephen Colavincenzo, Robby Lapointe, George Waller, Richard Shock</i>	
Numerical Analysis of Slat Noise Generation	2430
<i>Thilo J. Knacke, Frank Thiele</i>	
A Study of the Sources of Slat Noise using Proper Orthogonal Decomposition	2446
<i>Daniel Sampaio Souza, Daniel Rodriguez, Marcello Medeiros</i>	
Numerical Simulation of Noise Generation of a Generic Wing-slat Configuration	2459
<i>Lilla Koloszar, Patrick Rambaud, Christophe Schram</i>	
Computation of Slat Noise Sources using Adaptive FEM and Lighthill's Analogy	2469
<i>Johan Hoffman, Johan Jansson, Niclas Jansson, Rodrigo Vilela De Abreu</i>	
Evaluation of a Genuinely Multi-Dimensional High-Order Explicit Filters for Aeroacoustic Computations	2479
<i>Fabrice Falissard, Thomas Le Garrec</i>	
A Linearized Navier-Stokes Method Including Turbulence Damping	2495
<i>Andreas Holmberg, Axel Kierkegaard, Chenyang Weng</i>	
A Discontinuous Galerkin Method for the Solution of the Linearized Navier-Stokes Equations	2505
<i>Andrea Lario, Renzo Arina, Andrea Job</i>	
Coupling Acoustic Perturbation Equations and Pierce Wave Equation for Computational Aeroacoustics	2523
<i>Manfred Kaltenbacher, Andreas Hüppe, Barbara Wohlmuth, Helmut Kuhnelt</i>	
Comparison of Source Term Formulations for Computational Aeroacoustics	2532
<i>Andreas Hüppe, Manfred Kaltenbacher</i>	
Improved Parabolization of the Euler Equations	2543
<i>Aaron Towne, Tim Colonius</i>	
Efficient Mode-Matching Based on Closed Form Integrals of Pridmore-Brown Modes	2556
<i>Martien Oppeneer, Sjoerd W. Rienstra, Pieter Sijtsma</i>	
Validation of a One Dimensional Model for Nonlinear Propagation in Air Intake Ducts	2577
<i>Morad Kassem</i>	
The EPSL Static Tests Demonstration of Liners Noise Reduction Concepts	2589
<i>Jacky Mardjono, Riou Georges, Boiteux Jean-Michel, Frederic Boubila</i>	
Acoustic Properties of Perforates Under High Level Multi-tone Excitation	2602
<i>Hans Boden</i>	
Aeroacoustic Liner Applications of the Broadband Special Acoustic Absorber Concept	2626
<i>Daniel Redmann, Reinhard Pongratz, Joergen Zillmann</i>	
Acoustic Damping Analysis of Bias Flow Liners Based on Spectral Flow Characteristics	2638
<i>Anita Schulz, Daniel Haufe, Andreas Fischer, Jürgen Czarske, Friedrich Bake, Lars Enghardt</i>	

VOLUME 4

Uncertainty Quantification of Low-speed Fan Noise	2652
<i>Julien Christophe, Marlene Sanjose, Stephane Moreau, Jeroen A. Witteveen, Gianluca Iaccarino</i>	
Investigation Of The Noise Sources On A Vertical Axis Wind Turbine Using An Acoustic Array	2661
<i>Charles E. Pearson, William Graham</i>	
Tonal and Broadband Sound Prediction of a Locomotive Cooling Unit	2671
<i>Julien Christophe, Korcan Kucukcoskun, Christophe Schram, R. Hallez</i>	
Buffeting Noise of Automobile at Running Speeds	2692
<i>Ik Hyun Bai, Yong Woo Jo, Young J. Moon, Wan-Ho Jeon, Jung-Il Kim</i>	
An Enhanced Wavenumber-extended Finite Volume Scheme for Non-uniform Grid System	2705
<i>Minwoo Kim, Soogab Lee, Kyu Hong Kim</i>	
Computation of Turbulent Pipe Flow and Jet Noise at Low Mach Numbers	2721
<i>Seung Tae Hwang, Yong Woo Jo, Young J. Moon, Eun Ji Na, Sei Young Lee, Jin Ho Mok</i>	
Open Rotor Aeroacoustic Installation Effects for Conventional and Unconventional Airframes	2730
<i>Michael J. Czech, Russell H. Thomas</i>	
Experimental Comparison of Supersonic Jets Exhausting from Military Style Nozzles with Interior Corrugations and Fluidic Inserts	2751
<i>Russell W. Powers, Ching-Wen Kuo, Dennis K. McLaughlin</i>	
Acoustic Measurements of High-Temperature Supersonic Impinging Jets in Multiple Configurations	2777
<i>Theodore Worden, Jonas J. R. Gustavsson, Chiang Shih, Farrukh S. Alvi</i>	
Correlation of Irrotational Near-Field Pressure and Far-Field Acoustic in Forced High-Speed Jets	2795
<i>Michael Crawley, Hind Alkandry, Aniruddha Sinha, Mo Samimy</i>	

Experimental Analysis of the Near Field Pressure of a Single Stream Subsonic Jet	2812
<i>Mathieu Lorteau, Franck Cléro, Francois Vuillot</i>	
On the Evolution of Crackle in Jet Noise from High-Performance Engines	2825
<i>Kent L. Gee, Tracianne B. Neilsen, Alan T. Wall, Michael B. Muhlestein, Micah Downing, Michael M. James, Richard L. McKinley</i>	
Spectral Characterization in the Near- and Mid-field of Military Jet Aircraft Noise	2841
<i>Tracianne B. Neilsen, Kent L. Gee, Michael M. James</i>	
Acoustic Source Indicators Using LES in a Fully Expanded and Heated Supersonic Jet	2859
<i>Romain Fiévet, Charles E. Tinney, Nathan Murray, Gregory Lyons, Praveen Panickar</i>	
Near-Field and Far-Field Acoustics of Laminar and Turbulent Nozzle-Jet Flows	2872
<i>Stefan Buehler, Dominik Obrist, Leonhard Kleiser</i>	
The Response of Supersonic Jet Noise Components to Fluidic Injection Parameters	2898
<i>Daniel R. Cuppoletti, Bhupatindra Malla, Ephraim J. Gutmark, Haukur E. Hafsteinsson, Lars-Erik Eriksson, Erik Prisell</i>	
The Source of Crackle Noise in Heated Supersonic Jets	2921
<i>Joseph W. Nichols, Sanjiva K. Lele, John T. Spyropoulos</i>	
Direct Computation of the Sound Radiated from a Diffusion Jet Flame Using Large Eddy Simulation	2934
<i>Alireza Najafiyazdi</i>	
Computational Study of Shock-Associated Noise Characteristics Using LES	2955
<i>Junhui Liu, Andrew T. Corrigan, Kailas Kailasanath, Nicholas S. Heeb, David E. Munday, Ephraim J. Gutmark</i>	
Assessment of Front-Rotor Trailing-Edge-Blowing for the Reduction of Open Rotor Noise Emissions	2983
<i>Rinie A. Akkermans, Arne W. Stuermer, Jan Delfs</i>	
Assessment and Comparison of Tonal Noise Models for Counter-rotating Open Rotors	2993
<i>Laurent Soulat, Irwin Kernemp, Stephane Moreau, Rasika Fernando, Marlene Sanjose</i>	
Aeroacoustics of a High-Fidelity CFD Calculation of a Counter-Rotating Open Rotor in Take-Off Conditions	3008
<i>Eirene Rebecca Busch, Manuel Kessler, Ewald Kraemer</i>	
Effects of Real Airfoil Geometry on Leading Edge Gust Interaction Noise	3020
<i>James R. Gill, Xin Zhang, Phillip Joseph</i>	
Comparison of NASA 9x15 Low Speed Wind Tunnel Counter Rotating Open Rotor Data with GE-Anechoic Facility Historic Data for Baseline F31A31 Blade Design	3035
<i>John Wojno, B. Janardan</i>	
The Flow-induced Sound of a Wall-mounted Finite Length Cylinder with Circular and Square Cross-section	3044
<i>Danielle Moreau, Con J. Doolan</i>	
Influence of the Shape of 2D Thick Bodies on Their Aeolian Noise	3061
<i>Florent Margnat, A. Baramili Fleury De Amorim</i>	
Numerical Simulations of Tandem Cylinders with Subcritical Spacing	3073
<i>Zhixiang Xiao, Kunyu Luo</i>	
Deconvolution of Sources in Aeroacoustic Images from Phased Microphone Arrays Using Linear Programming	3086
<i>Robert P. Dougherty, Rakesh Chandran Ramachandran, Ganesh Raman</i>	
An In-duct to Far-field Phased Array Technique for Validation of Fan Broadband Liner Performance at Representative Engine Mach Numbers	3100
<i>Brian J. Tester, Paul Murray</i>	
Beamforming Matrix Regularization and Inverse Problem for Sound Source Localization : Application to Aero-engine Noise	3118
<i>Thomas Padois, Alain Berry, Philippe-Aubert Gauthier, Ninad Joshi</i>	
3D Source Localization in a Closed Wind-tunnel Using Microphone Arrays	3130
<i>Thomas Padois, Olivier Robin, Alain Berry</i>	
Joint Experimental and Numerical Study of Gap-Turbulence Interaction	3144
<i>Tatiana Kozubskaya, Alexey Duben, Thilo Knacke, F. Thiele, Victor F. Kopiev, Mikhail Zaitsev</i>	
On the Effect of Flap Deflection on Jet Flow for a Jet-pylon-wing Configuration: Near-field and Acoustic Modelling Results	3155
<i>Vasily A. Semiletov, Sergey A. Karabasov, Dmitry A. Lyubimov, Georgy A. Faranosov, Victor F. Kopiev</i>	
A New Block Interface Condition for Aeroacoustic Applications	3164
<i>Yongle Du, Philip J. Morris</i>	
An Improved Grid Block Interface Flux Reconstruction Method for Numerical Simulation with High Order Finite Difference Scheme	3183
<i>Junhui Gao, Xiaodong Li</i>	
Time Domain Simulations using the Modified Myers Boundary Condition	3207
<i>Edward J. Brambley, Gwenael Gabard</i>	
Further Insights on Time-Domain Impedance Boundary Condition	3224
<i>Marie Escoufflaire, Stephane Redonnet, Yves Auregan</i>	
Evaluating Stretched Grids and Introducing Black Hole Layers As Alternative Non-reflecting Buffer Zone	3244
<i>Benjamin Krank, Gunilla Efraimsson</i>	
Derivation of Accurate Acoustic Boundary Conditions for the Numerical Calculation of Compressible Reactive Flows	3256
<i>Gilles Reichling, Berthold Noll, Manfred Aigner</i>	
Experimental Validation of Numerical Simulation for An Acoustic Liner in Grazing Flow	3278
<i>Christopher K. Tam, Nikolai Pastouchenko, Michael G. Jones, Willie R. Watson</i>	
A Systematic Impedance Model for Non-linear Helmholtz Resonator Liner	3308
<i>Deepesh K. Singh, Sjoerd W. Rienstra</i>	
Towards the Development of Adaptive Finite Element Methods for Internal Flow Aeroacoustics	3320
<i>Rodrigo Vilela De Abreu, Johan Hoffman, Johan Jansson</i>	

Investigation of Installation Effects for an Axial Fan	3332
<i>Sabry Allam, Mats Åbom</i>	
Estimation of Automotive Wind Noise by Coupling Direct Noise Computation to Statistical Energy Analysis	3340
<i>Francois Vanherpe, Philippe Lafon, Guillaume Lobel</i>	
HVAC Noise Predictions Using a Lattice Boltzmann Method	3362
<i>Franck Perot, Mohammed Meskine, Vincent Legoff, Vincent Vidal, Frederic Gille, Sandrine Vergne, Frederic Dupuy</i>	
Modal Analysis Tools to Enhance FRF-based Optimization of Vibro-acoustic Countermeasures in a Turbo-propeller Aircraft	3376
<i>Alejandro Bonillo Coll, Emiliano Tolosa González, Pierre Huguenet</i>	
Optimization of Structural Countermeasures for Noise Attenuation in Aircraft Cabins	3384
<i>Alejandro Bonillo</i>	
Global Response to Forcing in a Subsonic Jet: Instability Wavepackets and Acoustic Radiation	3411
<i>Xavier Garnaud, Richard D. Sandberg, Lutz Lesshaft</i>	
On the Sources of Jet Noise: a Numerical Study Using Band-pass Filtering	3422
<i>Alireza Najafiyazdi, Ali Uzun, Luc G. Mongeau</i>	
Toward Active Control of Noise from Hot Supersonic Jets	3441
<i>Aniruddha Sinha, Robert Schlinker, John Simonich, Ramons A. Reba, Tim Colonius</i>	
Application of a Phased Array Technique to DNS-generated Turbulent Subsonic Jet Data: Source Identification and Comparisons with Experiment and Analytic Models	3461
<i>Brian J. Tester, Richard D. Sandberg</i>	
Effects of Inflow Shear Layer Parameters on a Transitional Supersonic Jet with a Moderate Reynolds Number	3484
<i>Taku Nonomura, Kozo Fujii</i>	
Application of Azimuthal Decomposition Technique for Validation of CAA Methods	3498
<i>Georgy A. Faranosov, Sergey A. Karabasov, Victor F. Kopiev</i>	
Investigation of the Noise from a Rectangular Supersonic Jet	3513
<i>Nicholas S. Heeb, Pablo Mora, Ephraim J. Gutmark, Kailas Kailasanath</i>	

VOLUME 5

Impact of Different Aerodynamic Optimization Strategies on the Sound Emitted by Axial Fans	3530
<i>Konrad Bamberger, Thomas Carolus</i>	
Integrated “CFD - Acoustic” Computational Approach to the Simulation of a Contra Rotating Open Rotor at Angle of Attack	3543
<i>Piergiorgio Ferrante, Stephane Vilmin, Charles Hirsch, Jean Charles Bonaccorsi, Paolo Di Francescantonio</i>	
A Broadband Noise Model for Turbulence/Annular-Cascade Interaction	3562
<i>Weiguang Zhang, Xiaoyu Wang, Xiaofeng Sun</i>	
Azimuthal and Radial Mode Detection by a Slowly Rotating Rake	3574
<i>Pieter Sijtsma, Hélène Orsi</i>	
A Comparison between Radial Rakes of Sensors and Axial Arrays of Microphones for the Experimental Investigation of Tone Noise in LPTs	3585
<i>Francesco Taddei, Maurizio De Lucia, Davide Torzo, Ennio Spano</i>	
Further Development of Rotating Rake Mode Measurement Data Analysis	3604
<i>Milo D. Dahl, Duane R. Hixon, Daniel L. Sutliff</i>	
A Silent Inflow Condition for the Study of Boundary Layer Noise	3619
<i>Xavier Gloerfelt, Jean-Christophe Robinet</i>	
Flow Noise from Swept Steps in Turbulent Boundary Layers	3645
<i>Jin Hao, Meng Wang</i>	
High Reynolds Number Turbulent Boundary Layer Flow over Rough Walls: Wall Pressure Spectrum and Noise	3656
<i>Timothy W. Meyers, William N. Alexander, William Devenport, Stewart A. Glegg</i>	
The Response of a Surface Discontinuity to an Incoming Vortex	3692
<i>Benjamin Bryan, Stewart Glegg</i>	
On the Use of Particle Image Velocimetry to Predict Trailing Edge Noise	3714
<i>Marthijn Tuinstra, Stefan Pröbsting, Fulvio Scarano</i>	
S1MA High Speed Acoustic Measurement Devices for Open Rotor Mock Up	3735
<i>Fabien Mery</i>	
In-Duct Acoustic Source Detection Using Acoustic Imaging Techniques	3752
<i>Arthur Finez, Xavier Mettelle, Christophe Picard, Romain Leneveu, Pascal Souchette</i>	
Experimental Investigation of Spectral Broadening of Sound Waves by Wind Tunnel Shear Layers	3761
<i>Stefan Kroeber, Marius Hellmold, Lars Koop</i>	
CFD/CAA Analysis of the LAGOON Landing Gear Configuration	3778
<i>Andre F. Ribeiro, Damiano Casalino, Ehab Fares, Swen E. Noelting</i>	
CFD/CAA Coupling on the LAGOON #2 Landing Gear Using a Structured Multi-block Solver with the Chimera Technique	3802
<i>Laurent Sanders, Eric Manoha, Saloua Ben Khelil, Christophe François</i>	
Further Flow and Noise Predictions of the Gulfstream PDCC Nose Landing Gear on the CEDRE Unstructured Solver	3817
<i>Laurent Sanders, David Luquet, Nicolas Lupoglazoff, Francois Vuillot, Eric Manoha</i>	
Aeroacoustics of a Landing Gear Door	3837
<i>Ryu J. Fattah, Zhiwei Hu, David England</i>	

A Testbed for Large Scale and High Reynolds Number Airframe Noise Research	3854
<i>Michael Pott-Pollenske, Jan Delfs, Johann Reichenberger</i>	
Fly-over Source Localization on Civil Aircrafts	3867
<i>Cédric Camier, Jonathan Provencher, Thomas Padois, Philippe-Aubert Gauthier, Alain Berry, Jean-François Blais, Robby Lapointe</i>	
Phased Microphone Array Measurements of a Bombardier Aircraft Scaled Model	3878
<i>Jerry Syms, Mahmoud Mamou</i>	
High Resolution Simulations of High Reynolds Number Jets with Microjet Injection	3893
<i>Max E. Rife, Gary Page</i>	
Assessment of SNGR Method for Robust and Efficient Simulations of Flow Generated Noise	3912
<i>Paolo Di Francescantonio, Piergiorgio Ferrante, Thomas Deconinck, Charles Hirsch</i>	
Direct Flow-induced Noise Prediction of a Simplified HVAC Duct Using a Lattice Boltzmann Method	3925
<i>Franck Perot, Mohammed Meskine, Joerg Ocker</i>	
Numerical Simulation of the Flow and Sound Field of a Serrated Nozzle	3939
<i>Dandy Eschricht, Ulf Michel, Frank Thiele, Marco Rose</i>	
Flow Noise Prediction of Confined Flows Using Synthetic Turbulence and Linearized Euler Equations in a Hybrid Methodology	3952
<i>Bart Vanelderden, Wim De Roeck, W. Desmet</i>	
Impedance Prediction of Three-Dimensional Honeycomb Liners with Laminar/Turbulent Boundary Layers using DNS	3969
<i>Qi Zhang, Daniel J. Bodony</i>	
Numerical Simulations of Perforate Liners: Part I - Model Description and Impedance Validation	4003
<i>Maud Lavieille, Toufic Abboud, Ahmed Bennani, Nolwenn Balin</i>	
Numerical Simulations of Perforate Liners: Part II - Local Velocity Fields Validation	4016
<i>Maud Lavieille, Estelle Piot, Francis Micheli</i>	
Characterization of Acoustic Liners Absorption using a Lattice-Boltzmann Method	4032
<i>Adrien Mann, Franck Perot, Min-Suk Kim, Damiano Casalino</i>	
Linear Simulations of Liners Sandwiched with a Metal Foam	4053
<i>Axel Kierkegaard, Gunilla Efraimsson, Anurag Agarwal</i>	
ONERA-NASA Cooperative Effort on Liner Impedance Education	4063
<i>Julien Primus, Estelle Piot, Frank Simon, Michael G. Jones, Willie Watson</i>	
A Comparative Study of Four Impedance Education Methodologies Using Several Test Liners	4078
<i>Willie R. Watson, Michael G. Jones</i>	
On the Effect of Mach Number on Subsonic Jet Noise Sources in the Goldstein Acoustic Analogy Model	4105
<i>Vasily G. Kondakov, Sergey A. Karabasov, Vasily Goloviznin</i>	
Comparison of RANS-based Methods for the Prediction of Noise Emitted by Subsonic Turbulent Jets	4123
<i>Victor H. Rosa, Cesar J. Deschamps, Juan P. Salazar, Carlos R. Ilario Da Silva</i>	
On the Modification of the Ffowcs Williams-Hawkings Integration for Jet Noise Prediction	4139
<i>Tomoaki Ikeda, Shunji Enomoto, Kazuomi Yamamoto, Kazuhisa Amemiya</i>	
Towards a Comprehensive Model of Jet Noise using an Acoustic Analogy and Steady RANS Solutions	4152
<i>Steven A. Miller</i>	
Acoustic Field Associated with Parabolized Stability Equation Models in Turbulent Jets	4179
<i>Daniel Rodriguez, Aniruddha Sinha, Guillaume A. Brès, Tim Colonius</i>	
Investigation of the Near and Far Pressure Fields of Dual-stream Jets Using an Euler-based PSE Model	4197
<i>Olivier Léon, Jean-Philippe Brazier</i>	
A Simple Model for the Frequency Dependence of Turbulence Length Scales in Jets	4216
<i>John Kennedy, David E. Breakey</i>	
Jet Noise Source Modeling Suited to Estimate a Shielding Effect	4226
<i>Kenji Hayama, Satoshi Fukata, Guillaume Sylvand, Stephane Alestra, Toshihiko Azuma</i>	
Intensification and Suppression of Jet Noise Sources in the Vicinity of Lifting Surfaces	4236
<i>Victor F. Kopiev, Georgy A. Faranosov, Mikhail Zaitsev, Eugeny Vlasov, Ivan Belyaev, Nikolay Ostrikov, Rudolf Karavosov</i>	
Noise from a Rotor Ingesting a Planar Turbulent Boundary Layer	4257
<i>William N. Alexander, William Devenport, Michael Morton, Stewart Glegg</i>	
Propeller Noise: Inflow Distortion In a Non Axisymmetric Flow	4276
<i>Stewart Glegg, Emilia Kawashima, Felipe Lachowski, William Devenport</i>	
On the Effect of Acceleration on Trailing Edge Noise Radiation from Rotating Blades	4294
<i>Samuel Sinayoko, Michael Kingan, Anurag Agarwal</i>	
Active Twist Rotor Controller Identification for Blade-Vortex Interaction Noise Alleviation	4310
<i>Alessandro Anobile, Giovanni Bernardini, M. Gennaretti</i>	
Parallel Blade-Vortex Interaction Analyses and Rotor Noise Control Synthesis	4324
<i>Sara Modini, M. Gennaretti, Giovanni Bernardini, Giorgio Graziani</i>	
Validation of a Moving-Body High-Order Immersed Boundary Method for Direct Tonal Noise Predictions of Rotor-Stator Interactions	4338
<i>Roberto F. Bobenrieth Miserda, Braulio G. Pimenta, Rafael L. Bites, Ana Luisa Maldonado</i>	
Behaviors of Fan Tone Noise Under the Influence of Circumferentially Non-uniform Steady Pressure Perturbation	4364
<i>Shinya Kusuda, Tsutomu Oishi, Hidekazu Kodama, Masanobu Namba, Junichi Kazawa</i>	
Acoustic Optimization of Rotor-Stator Interaction Noise by Trailing-Edge Blowing	4377
<i>Michael Kohlhaas, Konrad Bamberger, Thomas Carolus</i>	
Acoustic Optimization of Ultra-Low Count Bypass Outlet Guide Vanes	4388
<i>Davide Giacche, Thomas P. Hynes, Stephane Baralon, John Coupland, Nicholas Humphreys, Peter Schwaller</i>	

An Investigation of the Inlet and Exhaust Noise Sources of Turbofan Using Linear Microphone Array	4405
<i>Liang Ji, Weiyang Qiao, Lei Zhao, Kunbo Xu, Liangfeng Wang</i>	
Exhaust (Broadband) Noise Simulation of a Realistic Turbofan Forced Mixer by Using a CFD/CAA-approach	4415
<i>Paul Traub, Dominik U. Broszat, Jens Wellner, Thomas Rober</i>	
Effect of Stator Trailing Edge Blowing on the suppression of Stator/Rotor Interaction Noise.....	4428
<i>Tongqing Wang, Dong Liang, Mingsui Yang</i>	
Author Index	