

Aeroacoustics

Papers Presented at the AIAA Aviation Forum 2021

Online
2-6 August 2021

Volume 1 of 4

ISBN: 978-1-7138-4350-4

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 34922 Uwytkug'Xcmg{'Ftkxg.'Uwky'422, Reston, VA 20191, USA.

TABLE OF CONTENTS

VOLUME 1

JET NOISE I

ON THE GENERATION OF ENTROPY NOISE IN A SHOCK CONTAINING NOZZLE OF HIGH-PERFORMANCE AIRCRAFT AT AFTERBURNER.....	1
<i>Christopher K. Tam</i>	
ASSESSMENT OF A GENERALIZED ACOUSTIC VARIABLE FOR SUPERSONIC JET NOISE	35
<i>Chitrarth Prasad, Datta Gaitonde</i>	
A COMPARISON OF JET ACOUSTIC ANALYSIS METHODS	49
<i>Tejal K. Shanbhag, Beckett Y. Zhou, Eduardo Molina, Juan Alonso</i>	
AEROACOUSTIC COUPLING IN TWIN SUPERSONIC RECTANGULAR JETS	62
<i>Jinah Jeun, Gao Jun Wu, Sanjiva K. Lele</i>	

JET NOISE II

MODELLING TURBULENT JETS AT HIGH-REYNOLDS NUMBER USING ONE-DIMENSIONAL TURBULENCE	79
<i>Sparsh Sharma, Marten Klein, Heiko Schmidt</i>	
POD-BASED SPATIO-TEMPORAL SUPERRESOLUTION MEASUREMENT ON A SUPERSONIC JET USING PIV AND NEAR-FIELD ACOUSTIC DATA	92
<i>Yuta Ozawa, Takayuki Nagata, Taku Nonomura, Keisuke Asai</i>	
ANALYSIS OF FORCED SUBSONIC JETS USING SPECTRAL PROPER ORTHOGONAL DECOMPOSITION AND RESOLVENT ANALYSIS	99
<i>Liam Heidt, Tim Colonius, Akhil Nekkanti, Oliver Schmdit, Igor Maia, Peter Jordan</i>	

ACOUSTIC/FLUID DYNAMICS INTERACTIONS I

NEW STRATEGY ON POROUS TRAILING EDGE FOR SELF-NOISE REDUCTIONS	115
<i>Max M. Scholz, Tze Pei Chong, Edward Smith</i>	
EFFECT OF 2D ICE ACCRETION ON TRAILING-EDGE NOISE	127
<i>Hyunjune Gill, Seongkyu Lee</i>	
TRAILING-EDGE SERRATIONS: IMPROVING THEORETICAL NOISE REDUCTION MODELS	148
<i>Lorna J. Ayton, Mate Szoke , Chaitanya C. Paruchuri, William J. Devenport, William N. Alexander</i>	
TURBULENCE CHARACTERISTICS OF FINLET TREATMENTS APPLIED FOR TRAILING EDGE NOISE REDUCTION OF A NACA 0012 AIRFOIL	163
<i>Felix Gstrein, Bin Zang, Yannick Mayer, Mahdi Azarpeyvand</i>	

AIRFRAME/HIGH-LIFT NOISE I

OVERVIEW OF AEROACOUSTIC TESTING OF THE HIGH-LIFT COMMON RESEARCH MODEL.....	179
<i>David P. Lockard, Travis L. Turner, Christopher J. Bahr, Florence V. Hutcheson</i>	
DEVELOPMENT OF A SLAT COVER LINER.....	204
<i>Michael Pott-Pollenske</i>	
GPU CABARET SOLUTIONS FOR 30P30N THREE-ELEMENT HIGH-LIFT AIRFOIL WITH SLAT MODIFICATIONS.....	215
<i>Anton P. Markesteijn, Hasan Kamliya Jawahar, Sergey A. Karabasov, Mahdi Azarpeyvand</i>	
INVESTIGATION OF THE 30P30N SLAT FLOW FIELD WITH PASSIVE CONTROL DEVICES USING PARTICLE IMAGE VELOCIMETRY.....	228
<i>Yang Zhang, Ross Richardson, Louis N. Cattafesta, Meelan M. Choudhari, Kyle A. Pascioni, Mehdi R. Khorrami, David P. Lockard, Travis L. Turner</i>	
LOW NOISE ATRA – AN AIRCRAFT NOISE REDUCTION STUDY BASED ON RETRO-FIT TECHNOLOGIES.....	247
<i>Michael Pott-Pollenske</i>	

JET NOISE III

EXCHANGE MECHANISMS BETWEEN HYDRODYNAMIC AND ACOUSTIC COMPONENTS OF AN UNDER-EXPANDED SUPERSONIC IMPINGING JET	261
<i>Chitrarth Prasad, Spencer Stahl, Datta Gaitonde</i>	
AN EXPERIMENTAL INVESTIGATION ON THE UNSTEADY PRESSURE FIELD INDUCED BY AN INSTALLED JET IN SUPERSONIC FLOW CONDITIONS	274
<i>Stefano Meloni, Roberto Camussi, Mirko Prestianni, Elisa De Paola, Francesco Biondo</i>	
WAVEPACKET MODELS FOR SUPERSONIC TWIN-JETS	285
<i>Daniel Rodriguez</i>	
CONTROL OF COUPLING IN TWIN RECTANGULAR SUPERSONIC JETS	301
<i>Ata Ghassemi Isfahani, Nathan J. Webb, Mo Samimy</i>	

ACOUSTIC/FLUID DYNAMICS INTERACTIONS II

ANALYSIS OF SELF-EXCITED COMBUSTION OSCILLATION CHARACTERISTICS OF SOLID FUEL RAMJET ENGINE.....	321
<i>Lei Han, Junwei Li, Dan Zhao, Yuze Sun, Weixuan Li</i>	
REDUCING AEROACOUSTIC FEEDBACK MECHANISMS IN RECTANGULAR CAVITY FLOWS USING PASSIVE MODIFICATIONS.....	329
<i>Simone Mancini, Alexander Kolb, Florian Mayer</i>	
MULTI-PORTS REDUCTION OF INSTALLATION EFFECTS IN A TANGENTIAL FAN.....	344
<i>Joachim N. Dominique, Julien Christophe, Christophe F. Schram, Fabrice Ailloud, Olivier Cheriaux, Manuel Henner</i>	

A GENERALIZED CORCOS MODEL FOR THE PREDICTION OF THE COHERENCE FUNCTION IN TURBULENT BOUNDARY LAYERS WITH ZERO AND ADVERSE PRESSURE GRADIENT	356
<i>Anna Caiazzo, Hao Wu, Stephane Moreau, Marlene Sanjose</i>	

ADVANCED TESTING TECHNIQUES I

TOWARD RELATING OPEN- AND CLOSED-TEST SECTION MICROPHONE PHASED ARRAY AEROACOUSTIC MEASUREMENTS	369
<i>Christopher J. Bahr</i>	

EXTENSION OF THE SOURCE LOCALIZATION METHOD SODIX FOR COHERENT SOUND SOURCES	390
<i>Sebastian Oertwig, Timo Schumacher, Henri A. Siller, Stefan Funke</i>	

ACOUSTIC LUCKY IMAGING.....	405
<i>Julian Biesheuvel, Marthijn Tuinstra, Leandro D. De Santana, Cornelius Venner</i>	

FINITE THICKNESS EFFECTS AND CORRECTIONS FOR ACOUSTIC WAVES PROPAGATING THROUGH SHEAR LAYERS	422
<i>Julian Biesheuvel, Marthijn Tuinstra, Leandro D. De Santana, Cornelius Venner</i>	

A FLUSH-MOUNT, IEPE MEMS PIEZOELECTRIC MICROPHONE FOR AEROACOUSTIC APPLICATIONS.....	440
<i>David A. Mills, William Patterson, James R. Underbrink, Mark Sheplak</i>	

AIRFRAME/HIGH-LIFT NOISE II

AEROACOUSTIC STUDY OF A SUBSCALE LARGE CIVIL TRANSPORT (STAR) MODEL – PART 1: SIMULATIONS.....	452
<i>Benedikt Konig, Ehab Fares, Mehdi R. Khorrami</i>	

AEROACOUSTIC STUDY OF A SUBSCALE LARGE CIVIL TRANSPORT (STAR) MODEL – PART 2: VALIDATION OF SIMULATED RESULTS.....	470
<i>Mehdi R. Khorrami, Benedikt Konig, Ehab Fares</i>	

EFFECT OF GEOMETRIC GRANULARITY ON THE NOISE SIGNATURE OF A FULL-SCALE LARGE CIVIL TRANSPORT NOISE.....	498
<i>Ehab Fares, Benedikt Konig, Mehdi R. Khorrami</i>	

COMMUNITY NOISE, SONIC BOOM AND METRICS I

DELAYED DECELERATION APPROACH PROCEDURE NOISE MODELING VALIDATION USING NOISE MEASUREMENTS AND RADAR DATA	514
<i>Jacqueline L. Thomas, Ara Mahseredjian, Sandro Salgueiro, John Hansman</i>	

NOISE MODEL VALIDATION USING REAL WORLD OPERATIONS DATA.....	533
<i>Ana B. Gabrielian, Tejas G. Puranik, Mayank V. Bendarkar, Michelle Kirby, Dimitri Mavris, Dylan Monteiro</i>	

PARAMETRIC STUDY OF THE NOISE EMITTED BY UNCORRELATED, DISTRIBUTED, ELECTRIC FANS.....	551
<i>Sebastien Guerin, Antoine Moreau, Robert Meier Zu Ummeln, Martin Staggat</i>	

COMPUTATIONAL AEROACOUSTICS I

BACKSCATTERING IN COMPLEX FLOWS: APPLICATION OF THE ONE-WAY EULER EQUATIONS TO POISEUILLE FLOW INSIDE LINED DUCT	573
<i>Clement Rudel, Sebastien Pernet, Jean-Philippe Brazier</i>	
MODELLING OF AN INFINITE IMPEDANCE GROUND PLANE FOR AIRCRAFT NOISE FLIGHT SIMULATION	589
<i>Toufic Abboud, Ahmed Bennani, Benoit Chaigne, Nadezda Petrova, Xiaodong Zhou, Vincent P. Blandeau</i>	
DIRECT COMPUTATION OF WALL-PRESSURE FLUCTUATIONS IN A COMPRESSIBLE TURBULENT CHANNEL FLOW	604
<i>Yi Liu, Kan Wang, Meng Wang</i>	

DUCT ACOUSTICS I

BENCHMARK DATA FOR EVALUATION OF NASA IMPEDANCE REDUCTION METHODS	615
<i>Michael G. Jones, Brian M. Howerton</i>	
NUMERICAL INVESTIGATION OF ACOUSTIC LINERS EXPERIMENTAL TECHNIQUES USING A LATTICE-BOLTZMANN SOLVER.....	627
<i>Lucas Schroeder, Andre M. Spillere, Lucas A. Bonomo, Andrey R. Da Silva, Francesco Avallone, Julio A. Cordioli</i>	
MAINE FLOW FACILITY FOR MEASUREMENT OF LINER PROPERTIES IN MULTIMODAL ACOUSTIC FIELD WITH GRAZING FLOW: QUALIFICATION AND FIRST LINER CHARACTERIZATION	642
<i>Joachim Golliard, Eric Portier, Jean-Christophe Le Roux, Thomas Humbert</i>	
DESIGN CONSIDERATIONS OF ACOUSTIC LINERS FOR SCALED TEST MODELS	658
<i>Remco Habing, Mark-Jan Van Der Meulen</i>	

GENERAL ACOUSTICS I

DOWNSTREAM PERFORATIONS FOR THE REDUCTION OF TURBULENCE-AEROFOIL INTERACTION NOISE: PART II - THEORETICAL INVESTIGATION	674
<i>Matthew J. Priddin, Lorna J. Ayton, Sergi Palleja-Cabre, Paruchuri Chaitanya, Phillip Joseph</i>	
SIMULATION OF THE VIBRO-ACOUSTIC INTERACTION IN A FLEXIBLE FLOW DUCT USING A PARTITIONED APPROACH IN THE TIME DOMAIN.....	690
<i>Jurgen Kersschot, Herve Denayer, Wim De Roeck, Wim Desmet</i>	
DOWNSTREAM PERFORATIONS FOR THE REDUCTION OF TURBULENCE-AEROFOIL INTERACTION NOISE: PART I - EXPERIMENTAL INVESTIGATION.....	704
<i>Sergi Palleja-Cabre, Chaitanya C. Paruchuri, Phillip Joseph, Matthew J. Priddin, Lorna J. Ayton</i>	
WALL PRESSURE FLUCTUATIONS OVER A SERRATED TRAILING EDGE AT DIFFERENT ANGLES OF ATTACK.....	717
<i>Lourenco Tercio Lima Pereira, Francesco Avallone, Daniele Ragni</i>	

JET NOISE IV

PARAMETRIC STUDY OF THERMALLY NON-UNIFORM SUPERSONIC JETS USING LES FOR NOISE PREDICTIONS.....	732
<i>Monika Chauhan, Luca Massa</i>	
LARGE-EDDY SIMULATIONS OF THE FLOW AND ACOUSTIC FIELDS OF A ROCKET JET IMPINGING ON A PERFORATED PLATE.....	757
<i>Mathieu Vare, Christophe Bogey</i>	
INTERNAL AND EXTERNAL FEEDBACK IN RECTANGULAR JET SCREECH.....	772
<i>Gao Jun Wu, Sanjiva K. Lele, Jinah Jeun</i>	
TOWARDS LARGE-EDDY SIMULATIONS OF SUPERSONIC JETS FROM TWIN RECTANGULAR NOZZLE WITH PLASMA ACTUATION	787
<i>Guillaume A. Bres, Brandon Yeung, Oliver T. Schmidt, Ata Ghassemi Isfahani, Nathan J. Webb, Mo Samimy, Tim Colonius</i>	

ADVANCED TESTING TECHNIQUES II

A NEW PLATE DESIGN TO IMPROVE THE ACCURACY OF AIRCRAFT EXTERIOR NOISE MEASUREMENTS ON THE GROUND	804
<i>Vincent P. Blandeau, Philippe Bousquet</i>	
FEASIBILITY OF DETERMINING AIRCRAFT CERTIFICATION NOISE LEVELS USING GROUND PLANE MICROPHONE MEASUREMENTS	820
<i>Philippe Bousquet, Vincent P. Blandeau</i>	

VOLUME 2

LOW NOISE ATRA - PHASED ARRAY MEASUREMENTS OF JET NOISE IN FLIGHT	838
<i>Henri A. Siller, Timo Schumacher, Wolfram Hage</i>	

AIRFRAME/HIGH-LIFT NOISE III

AIRFRAME NOISE SIMULATIONS OF A FULL-SCALE LARGE CIVIL TRANSPORT IN LANDING CONFIGURATION	847
<i>Mehdi R. Khorrami, Benedikt Konig, Ehab Fares, Andre Ribeiro, Michael Czech, Patricio A. Ravetta</i>	
COMPARISON OF BOEING 777 AIRFRAME NOISE FLIGHT TEST DATA WITH NUMERICAL SIMULATIONS	880
<i>Michael Czech, Leon Brusniak, Mehdi R. Khorrami, Ehab Fares, Benedikt Konig</i>	
MULTIPLANAR SYNTHETIC ARRAYS AND THEIR APPLICATION TO FULL-SCALE LANDING GEAR NOISE SOURCE IDENTIFICATION.....	892
<i>Patricio A. Ravetta, Mehdi R. Khorrami, Benedikt Konig, Ehab Fares</i>	

COMPUTATIONAL AEROACOUSTICS II

PREDICTION OF FAN-OGV INTERACTION BROADBAND NOISE USING POD SYNTHETIC TURBULENCE MODEL	924
<i>Xiaowan Liu, Chaitanya C. Paruchuri, Phillip Joseph</i>	
DELAYED DETACHED-EDDY SIMULATIONS OF TRANSONIC CAVITY NOISE	938
<i>Ozgur Yalcin, Yusuf Ozyoruk</i>	
INDUSTRIAL-SCALE TIME DOMAIN MODELLING OF ACOUSTIC SURFACE TREATMENTS FOR AERO-ENGINES USING DISCONTINUOUS GALERKIN METHOD	955
<i>Mehdi Nair, Benjamin De Bbye, Cesar Legendre, Loris Casadei, Guilherme Cunha</i>	
FAN NOISE SHIELDING PREDICTIONS WITH A COUPLED DG / FM-BEM METHOD FOR INSTALLED AIRCRAFT ENGINES	985
<i>Stanislav Proskurov, Michael Moessner, Roland Ewert, Markus Lummer, Jan W. Delfs</i>	
NUMERICAL IMPLEMENTATION OF AN IMPEDANCE BOUNDARY CONDITION CONSIDERING A FINITE BOUNDARY LAYER	998
<i>Leonardo A. Seki, Andre M. Spillere, Julio A. Cordioli</i>	

DUCT ACOUSTICS II

ACOUSTIC-INDUCED VELOCITY IN A MULTI-ORIFICE ACOUSTIC LINER GRAZED BY A TURBULENT BOUNDARY LAYER.....	1011
<i>Francesco Avallone, Casalino Damiano</i>	
EFFECT OF MOMENTUM TRANSFER ON THE ACOUSTIC BOUNDARY CONDITION OF PERFORATED LINERS WITH GRAZING MEAN FLOW	1024
<i>Anita Schulz, Friedrich Bake, Dirk Ronneberger</i>	
FURTHER EVALUATION OF PREDICTION CAPABILITY OF THE BROADBAND TIME- DOMAIN IMPEDANCE MODEL FOR SOUND PROPAGATION IN TURBULENT GRAZING FLOW.....	1047
<i>Michael Shur, Michael Strelets, Andrey Travin, Takao Suzuki</i>	
OPTIMISATION OF SLANTED SEPTUM CORE AND MULTIPLE FOLDED CAVITY ACOUSTIC LINERS FOR AERO-ENGINES	1076
<i>Suresh Palani, Paul Murray, Alan McAlpine, Christoph Richter</i>	

EMERGING URBAN AND ADVANCED AIR MOBILITY NOISE I

STATISTICAL ASSESSMENT OF THE INFLUENCE FROM UNCERTAINTIES IN ACOUSTICAL DATA FOR UAM VEHICLES ON NOISE METRICS	1093
<i>Michael Bauer</i>	
EXPERIMENTAL CHARACTERIZATION OF AN ELECTRIC DUCTED FAN UNIT'S ACOUSTIC EMISSIONS.....	1101
<i>Jakob Schmidt, Manfred Kaltenbacher, Andreas Furlinger, Stefan Schoder</i>	
CLOSED-FORM ANALYTICAL APPROACH FOR CALCULATING NOISE CONTOURS OF DIRECTIVE AIRCRAFT NOISE SOURCES.....	1109
<i>Daniel C. Amargianitakis, Rodney H. Self, Antonio J. Torija, Anderson Proenca, Athanasios P. Synodinos</i>	

MACHINE LEARNING METHODS FOR ESTIMATING PROPELLER SOURCE NOISE SPHERES.....	1132
<i>Andrew Patterson, Naira Hovakimyan, Kyle A. Pascioni, Irene M. Gregory</i>	

JET NOISE V

EXPERIMENTAL INVESTIGATION ON THE JET NOISE SOURCES FOR CHEVRON NOZZLES IN UNDER-EXPANDED CONDITION.....	1144
<i>Hasan Kamliya Jawahar, Stefano Meloni, Roberto Camussi, Mahdi Azarpeyvand</i>	
IMPLEMENTATION OF VORTEX GENERATORS AS A NOISE REDUCTION SYSTEM FOR A FACETED SUPERSONIC NOZZLE	1154
<i>Omar Lopez Rodriguez, Mohammad Saleem, Ephraim Gutmark, Junhui Liu</i>	
SUPERSONIC JET NOISE REDUCTION USING MICRO VORTEX GENERATORS	1167
<i>Junhui Liu, Yu Yu Khine, Mohammad Saleem, Omar Lopez Rodriguez, Ephraim Gutmark</i>	
EFFECTS OF CHEVRONS ON JET-INSTALLATION NOISE.....	1191
<i>Hasan Kamliya Jawahar, Annabel P. Markesteijn, Sergey A. Karabasov, Mahdi Azarpeyvand</i>	
TRAILING-EDGE TREATMENTS FOR JET-INSTALLATION NOISE REDUCTION	1209
<i>Hasan Kamliya Jawahar, Mahdi Azarpeyvand</i>	

PROPELLER, ROTORCRAFT AND V/STOL NOISE I

COMPUTATION OF ROTOR NOISE GENERATION IN A THICK AXISYMMETRIC TURBULENT BOUNDARY LAYER.....	1219
<i>Di Zhou, Kan Wang, Meng Wang</i>	
AERODYNAMIC AND AEROACOUSTIC CHARACTERISTICS OF AN ISOLATED PROPELLER AT POSITIVE AND NEGATIVE THRUST.....	1232
<i>Jatinder Goyal, Tomas Sinnige, Francesco Avallone, Carlos Ferreira</i>	
AEROACOUSTIC PERFORMANCE OF PROPELLERS IN TURBULENT FLOW	1256
<i>Nur Syaifiqah Jamaluddin, Alper Celik, Kabilan Baskaran, Djamel Rezgui, Mahdi Azarpeyvand</i>	
BEAMFORMING OF BROADBAND ROTOR NOISE.....	1268
<i>Stewart A. Glegg, Christopher Hickling, N. Agastya Balantrapu, Jarrod T. Banks, Humza Butt, William N. Alexander, William J. Devenport</i>	
EXPERIMENTAL VALIDATION OF A LOWER-ORDER MODEL FOR LEADING-EDGE NOISE BASED ON VORTEX METHOD	1280
<i>Sparsh Sharma, Thomas F. Geyer, Ennes Sarradj, Heiko Schmidt</i>	

ACOUSTIC/FLUID DYNAMICS INTERACTIONS III

MODELLING CHORDWISE-VARYING POROSITY TO REDUCE AEROFOIL-TURBULENCE INTERACTION NOISE	1294
<i>Lorna J. Ayton, Matthew Colbrook, Thomas F. Geyer, Paruchuri Chaitanya, Ennes Sarradj</i>	
SPANWISE VARYING POROSITY FOR THE ENHANCEMENT OF LEADING-EDGE NOISE REDUCTION.....	1305
<i>Lorna J. Ayton, Orestis Karapiperis, Manuj Awasthi, Danielle Moreau, Con J. Doolan</i>	

PERMEABLE STRUCTURES FOR LEADING EDGE NOISE REDUCTION	1328
<i>Christof Ocker, Felix Czwielong, Thomas F. Geyer, Paruchuri Chaitanya, Markus Merkel, Stefan Becker</i>	

POROUS GEOMETRY EFFECTS ON THE GENERATION OF TURBULENCE INTERACTION NOISE	1348
<i>Luke Bowen, Alper Celik, Mahdi Azarpeyvand, Carlos R. Da Silva</i>	

AIRFRAME/HIGH-LIFT NOISE IV

AEROACOUSTIC COMPUTATIONS OF A GENERIC LOW BOOM CONCEPT IN LANDING CONFIGURATION: PART 1 - AERODYNAMIC SIMULATIONS	1362
<i>Ryan Ferris, Michael Sacks, Davide Cerizza, Andre Ribeiro, Mehdi R. Khorrami</i>	

AEROACOUSTIC COMPUTATIONS OF A GENERIC LOW BOOM CONCEPT IN LANDING CONFIGURATION: PART 2 - AIRFRAME NOISE SIMULATIONS.....	1380
<i>Andre F. Ribeiro, Ryan Ferris, Mehdi R. Khorrami</i>	

AEROACOUSTIC COMPUTATIONS OF A GENERIC LOW BOOM CONCEPT IN LANDING CONFIGURATION: PART 3 - AERODYNAMIC VALIDATION AND NOISE SOURCE IDENTIFICATION	1391
<i>Mehdi R. Khorrami, Patrick Shea, Courtney S. Winski, Patricio A. Ravetta, Andre Ribeiro, Ryan Ferris, Michael Sacks</i>	

COMPUTATIONAL AEROACOUSTICS III

CABARET ON UNSTRUCTURED PRISMATIC MESHES FOR COMPUTATIONAL AEROACOUSTICS PROBLEMS	1431
<i>Mihail A. Zaitsev, Vasily M. Goloviznin, Sergey A. Karabasov</i>	

LARGE EDDY SIMULATION FOR AIRFOIL WITH SERRATED TRAILING-EDGES AT HIGH ANGLE OF ATTACK	1444
<i>Anton P. Markesteijn, Hasan Kamliya Jawahar, Sergey A. Karabasov, Mahdi Azarpeyvand</i>	

TIME DOMAIN BOUNDARY ELEMENT METHOD PREDICTION OF NOISE SHIELDING BY A NACA 0012 AIRFOIL.....	1462
<i>Douglas M. Nark, Fang Q. Hu</i>	

ON C295 FWSAR MILITARY TRANSPORT AIRCRAFT ACOUSTIC CERTIFICATION BY CAA	1486
<i>Fernando De La Puente, Juan Jose Guerra Crespo, Javier Rodriguez Ahlquist, Ignacio Garcia Merino, Simone Mancini, Alexander Kolb</i>	

DUCT ACOUSTICS III

LEONAR LINER CONCEPT : MULTIPHYSICS COUPLING IN PRESENCE OF GRAZING FLOW, THERMAL GRADIENTS AND HIGH SOUND LEVELS	1503
<i>Victor Lafont, Fabien Mery, Frank Simon</i>	

DOUBLE DEGREE OF FREEDOM HELMHOLTZ RESONATOR BASED ACOUSTIC LINERS	1517
<i>Abhishek Gautam , Alper Celik, Harry Meek, Mahdi Azarpeyvand</i>	

AN INVESTIGATION ON NECK EXTENSIONS FOR SINGLE AND MULTI-DEGREE OF FREEDOM ACOUSTIC HELMHOLTZ RESONATORS.....	1529
<i>Abhishek Gautam , Alper Celik, Mahdi Azarpeyvand</i>	

EMERGING URBAN AND ADVANCED AIR MOBILITY NOISE II

SURFACE VIBRATION MEASUREMENT AND ANALYSIS FOR UAM/UAS ELECTRIC MOTOR NOISE.....	1542
<i>Jordan D. Cluts, Dennis L. Huff, Brenda S. Henderson, Charles Ruggeri</i>	
NOISE MEASUREMENTS FROM GROUND TESTS OF THE MOOG SUREFLY VEHICLE	1555
<i>Dennis L. Huff, Brenda S. Henderson, Jordan D. Cluts, Devin K. Boyle, Jeffrey Bennett, Justin Janzen</i>	
SIMULATION OF EMERGING URBAN AIR MOBILITY NOISE PROPAGATION USING ACOUSTIC RAYTRACING TECHNIQUES IN COMPLICATED 3D URBAN ENVIRONMENTS	1608
<i>Kevin Nelson, Bryan Franklin</i>	
A SYNTHESIS PLUGIN FOR AURALIZATION OF ROTOR SELF NOISE	1621
<i>Siddhartha Krishnamurthy, Aric R. Aumann, Stephen A. Rizzi</i>	
SUAS ROTOR-AIRFRAME INTERACTION.....	1636
<i>Jeremiah Whelchel, William N. Alexander</i>	

VOLUME 3

GENERAL ACOUSTICS III

EFFECTS OF PROBE VIBRATION ON HOT WIRE TURBULENCE MEASUREMENT: A TECHNIQUE FOR ITS REMOVAL.....	1664
<i>Angelis Karlos, Chaitanya C. Paruchuri, Phillip Joseph, Victor Bahrs, Robert Meyer, Wolfram Hage, Lars Enghardt</i>	
SIMULTANEOUS USE OF GROUND REFLECTION AND LATERAL ATTENUATION NOISE MODELS.....	1688
<i>Jeffrey J. Berton</i>	
EXPERIMENTAL AND NUMERICAL AEROACOUSTIC ANALYSIS OF AN ULTRASOUND WHISTLE	1703
<i>Zhangming Zeng, Anupam Sharma</i>	
NUMERICAL INVESTIGATION OF THE EFFECT OF INFLOW NON-UNIFORMITY ON THE NOISE RADIATED BY A VERTICAL AXIS WIND TURBINE.....	1716
<i>Kartik Venkatraman, Julien Christophe, Christophe F. Schram, Stephane Moreau</i>	

JET NOISE VI

DEMONSTRATION AND VERIFICATION OF EXACT DMD ANALYSIS APPLYING TO DOUBLE-PULSED SCHLIEREN IMAGE OF SUPERSONIC IMPINGING JET.....	1730
<i>Kasumi Omizu, Yuta Ozawa, Takayuki Nagata, Taku Nonomura, Keisuke Asai</i>	

NOISE OF INTERNALLY MIXED EXHAUST SYSTEMS WITH EXTERNAL PLUG FOR SUPERSONIC TRANSPORT APPLICATIONS 1738
James E. Bridges, Mark P. Wernet

COMPARATIVE STUDY OF SEMI-EMPIRICAL JET NOISE PREDICTION MODELS FOR FUTURE COMMERCIAL SUPERSONIC AIRCRAFT 1758
Junichi Akatsuka, Tatsuya Ishii

EFFECT OF NOZZLE SPACING ON FLOW AND ACOUSTICS CHARACTERISTICS OF SUPERSONIC TWIN JETS IMPINGING ON AN INCLINED SURFACE 1771
Karthikeyan Natarajan, Yogesh Mehta, Jonas Gustavsson, Rajan Kumar

PROPELLER, ROTORCRAFT AND V/STOL NOISE II

TESTING UAS PROPELLERS DESIGNED FOR MINIMUM INDUCED DRAG 1786
Kenneth W. Van Treuren, Ricardo Sanchez, Brett Bennett, Charles Wisniewski

OPTIMIZED PERFORMANCE AND ACOUSTIC DESIGN FOR HOVER-PROPELLER 1800
Ohad Gur, Jonathan Silver, Radovan Dite, Raam Sundhar

PARAMETRIC PERFORMANCE STUDY OF THE AERODYNAMICS AND AEROACOUSTICS OF SMALL PROPELLERS IN STATIC CONDITIONS 1822
Nicholas Maier, Shreyas Narsipur, Robert Deters

AEROACOUSTIC ANALYSIS OF A WING-TIP MOUNTED PROPELLER CONFIGURATION 1848
Beckett Yx Zhou, Myles Morelli, Payam Dehpanah, Nicolas R. Gauger, Alberto Guardone

DESIGN OF PROPELLERS FOR MINIMUM INDUCED DRAG 1867
Kenneth W. Van Treuren, Ricardo Sanchez, Brett Bennett, Charles Wisniewski

ACOUSTIC/FLUID DYNAMICS INTERACTIONS IV

INTERNAL AND NEAR-WALL FLOW FIELDS OF A STRUCTURED POROUS COATED CYLINDER AND THEIR ROLE IN PASSIVE FLOW AND NOISE CONTROL 1885
Elias Arcondoulis, Yu Liu, Yannian Yang, Daniele Ragni, Alejandro Rubio Carpio, Francesco Avallone

EFFECT OF A POROELASTIC EXTENSION ON ACOUSTIC SCATTERING OF A FINITE PLATE 1903
Qian Liu, Yu Liu, Hanbo Jiang, Yannian Yang, Peng Zhou

NUMERICAL INVESTIGATION OF THE NEAR-ELD AND WAKE CHARACTERISTICS OF NACA 0012 AIRFOIL AT STALL CONDITION 1918
Anton P. Markesteijn, Sergey A. Karabasov, Bin Zang, Mahdi Azarpeyvand, Yannick Mayer

FREQUENCY-TARGETABLE AEROFOIL SELF-NOISE REDUCTION 1932
Phillip C. Woodhead, Tze Pei Chong, Phillip Joseph, Jan G. Wissink, Paruchuri Chaitanya

AIRFRAME/HIGH-LIFT NOISE V

COMPARATIVE ANALYSIS OF LOW ORDER WALL PRESSURE SPECTRUM MODELS FOR TRAILING EDGE NOISE BASED IN AMIET THEORY 1943
Hussain Ali Abid, Oksana Stalnov, Sergey A. Karabasov

TRAILING EDGE NOISE MODELLING OF FLOW OVER NACA AIRFOILS INFORMED BY LES	1967
<i>Hussain Ali Abid, Anton P. Markesteijn, Sergey A. Karabasov</i>	

THE INCREASE OF THE AIRFOIL TRAILING EDGE NOISE AND UNSTEADY SURFACE PRESSURE DUE TO HIGH INFLOW TURBULENCE	1990
<i>Laura Botero, Fernanda Leticia Dos Santos, Cornelius Venner, Leandro D. De Santana</i>	

COMPUTATIONAL AEROACOUSTICS IV

AEROACOUSTIC ANALYSIS OF WING-MOUNTED PROPELLER ARRAYS	2012
<i>Caterina Poggi, Giovanni Bernardini, Massimo Gennaretti</i>	

DATA-DRIVEN AEROACOUSTIC MODELLING: TRAILING-EDGE NOISE	2025
<i>Renzo Arina, Andrea Ferrero</i>	

SOLUTION OF PIERCE'S EQUATION FOR TAM & AURIAULT'S MIXING NOISE MODEL	2036
<i>Etienne Spieser, Cesar Legendre, Christophe Bailly</i>	

A GENERIC DEEP LEARNING FRAMEWORK FOR PROPAGATION AND SCATTERING OF ACOUSTIC WAVES IN QUIESCENT FLOWS	2057
<i>Antonio Alguacil, Michael Bauerheim, Marc C. Jacob, Stephane Moreau</i>	

TOWARDS A FAST NON-EMPIRIC SOURCE MODEL FOR INSTALLED ROTOR NOISE	2079
<i>Andrea Franco, Roland Ewert, Michael Moessner, Jan W. Delfs</i>	

DUCT ACOUSTICS IV

MODELLING THE SUPPRESSION OF ROTOR-ALONE FAN NOISE WITH OVER-TIP-ROTOR LINERS AND COMPARISON WITH MEASUREMENTS FROM A HIGH-BYPASS TURBOFAN RIG	2097
<i>Sergi Palleja-Cabre, Brian J. Tester, R. Jeremy Astley</i>	

EVALUATION OF VARIABLE POROSITY LINER CONFIGURATIONS IN GRAZING INCIDENCE FOR BROADBAND NOISE REDUCTION	2116
<i>Martha C. Brown, Michael G. Jones</i>	

A DIELECTRIC ELASTOMER ACOUSTIC LINER	2129
<i>Chelsea Dodge, Yang Zhang, Louis N. Cattafesta, Brian M. Howerton, Jordan R. Kreitzman</i>	

EMERGING URBAN AND ADVANCED AIR MOBILITY NOISE III

NOISE EXPOSURE MAPS FOR URBAN AIR MOBILITY	2141
<i>Jinhua Li, Hok Kwan Ng, Yun Zheng, Sebastian Gutierreznolasco</i>	

URBAN AIR MOBILITY: PRELIMINARY NOISE ANALYSIS OF COMMUTER OPERATIONS	2149
<i>Mihir Rimjha, Antonio Trani, Susan Hotle</i>	

EVALUATING THE PERFORMANCE AND ACOUSTIC FOOTPRINT OF AIRCRAFT FOR REGIONAL AND URBAN AIR MOBILITY	2164
<i>Matthew A. Clarke, Juan Alonso</i>	

JET NOISE VII

ACOUSTIC RADIATION OF COHERENT STRUCTURES IN A TURBULENT ROUND JET	2195
<i>Nishanth Muthichur, Santosh Hemchandra, Arnab Samanta</i>	
INTERMITTENT STATISTICS AND STOCHASTIC MODELLING OF LOW AND HIGH RE COMPRESSIBLE JETS.....	2209
<i>Roberto Camussi, Gaetano L. Micci, Stefano Meloni, Christophe Bogey</i>	
ON THE USE OF THE DATA- AND PHYSICS-DRIVEN APPROACHES FOR JET NOISE MODELLING	2220
<i>Vasily Gryazev, Anton P. Markesteijn, Sergey A. Karabasov, Vassili Toropov, Umberto Armani, Elnaz Naghibi, Vladimir Riabov</i>	
UNDERSTANDING TWIN-JET SCREECH USING A VORTEX-SHEET MODEL	2242
<i>Michael Stavropoulos, Matteo Mancinelli, Peter Jordan, Vincent Jaunet, Daniel M. Edgington-Mitchell, Petrônio Nogueira</i>	

SPECIAL SESSION: HYBRID WIND TUNNEL WORKSHOP II

COMPARABILITY OF HIGH-LIFT NOISE MEASUREMENTS IN A KEVLAR-WALL, A HARD-WALL AND AN OPEN-JET TEST SECTION.	2256
<i>Martinus P. Sanders, Leandro D. De Santana, Cornelius Venner</i>	
AIRFOIL TRAILING EDGE NOISE MEASUREMENTS IN AN OPEN-JET, HARD-WALL AND KEVLAR-WALL TEST SECTION: A BENCHMARK EXERCISE.....	2278
<i>Martinus P. Sanders, Laura Botero, Leandro D. De Santana, Cornelius Venner</i>	
DATA-DRIVEN SPARSE SAMPLING FOR RECONSTRUCTION OF ACOUSTIC-WAVE CHARACTERISTICS USED IN AEROACOUSTIC BEAMFORMING.....	2296
<i>Sayumi Kaneko, Yuta Ozawa, Kumi Nakai, Yuji Saito, Taku Nonomura, Keisuke Asai, Hiroki Ura</i>	
INVESTIGATING THE AEROACOUSTIC PROPERTIES OF KEVLAR FABRICS.....	2304
<i>Mate Szoke , Stewart A. Glegg, William J. Devenport</i>	

TURBOMACHINERY AND CORE NOISE I

WALL-RESOLVED LARGE EDDY SIMULATION OF A REALISTIC TURBOFAN ROTOR FOR NOISE PREDICTION.....	2318
<i>Pavel Kholodov, Regis Koch, Marlene Sanjose, Stephane Moreau</i>	
3D CAA METHODOLOGY USING SYNTHETIC TURBULENCE TO ASSESS TURBULENCE-CASCADE INTERACTION NOISE EMISSION AND REDUCTION FROM SERRATED AIRFOILS	2333
<i>Martin Buszyk, Cyril Polacsek, Raphael Barrier, Thomas Le Garrec, Christophe Bailly</i>	
A STUDY ON THE FAN TONE NOISE REDUCTION WITH WAVY LEADING EDGE OGV.....	2362
<i>Hang Tong, Kangshen Xiang, Liangji Zhang, Lin Li, Weijie Chen, Weiyang Qiao</i>	
SPIRAL FLOW INSTABILITY IN INTERSTAGE FLOW OF HIGH-SPEED FAN RIGS	2376
<i>Takao Suzuki, Michael Shur, Michael Strelets, Andrey Travin</i>	

LATTICE BOLTZMANN SIMULATIONS OF WAVE PROPAGATION THROUGH A HIGH-PRESSURE TURBINE STAGE	2396
<i>Julian Winkler, Jeffrey M. Mendoza</i>	

ACOUSTIC/FLUID DYNAMICS INTERACTIONS V

THE FORMATION OF THE AEROACOUSTICS FEEDBACK LOOP FOR A LAMINAR AEROFOIL	2415
<i>Auris Juknevičius, Tze Pei Chong</i>	

EXPERIMENTAL INVESTIGATION OF BIO-INSPIRED UNIDIRECTIONAL CANOPIES.....	2440
<i>Nandita Nurani Hari, Mate Szoke , William J. Devenport, Stewart A. Glegg, Matthew J. Priddin, Lorna J. Ayton</i>	

INVESTIGATIONS ON THE APPLICATION OF VARIOUS SURFACE TREATMENTS FOR TRAILING EDGE NOISE REDUCTION ON A FLAT PLATE	2456
<i>Felix Gstrein, Bin Zang, Mahdi Azarpeyvand</i>	

AIRFRAME/HIGH-LIFT NOISE VI

NUMERICAL STUDY ON TRAILING-EDGE NOISE ATTENUATION USING 3D-PRINTED POROUS INSERT	2473
<i>Christopher Teruna, Francesco Avallone, Daniele Ragni, Damiano Casalino, Alejandro Rubio Carpio</i>	

VOLUME 4

PARAMETER STUDY OF A POROUS TRAILING EDGE USING IMPROVED DELAYED DETACHED EDDY SIMULATION.....	2490
<i>Yuejun Shi, Wolfgang Kollmann</i>	

EXPERIMENTAL INVESTIGATION OF NOISE GENERATION BY POROUS COATED TANDEM CYLINDER CONFIGURATIONS	2511
<i>Thomas F. Geyer, Elias Arcondoulis, Yu Liu</i>	

DUCT ACOUSTICS VI

EXPERIMENTAL INVESTIGATION FOR DETERMINATION OF NON-LINEAR PROPERTIES OF PERFORATED PLATES FOR TONAL, MULTI TONE AND RANDOM EXCITATION.....	2525
<i>Niloofar Sayyad Khodashenas, Hans Boden, Susann Boij</i>	

EXPERIMENTAL CHARACTERIZATION OF THE ACOUSTIC BEHAVIOR OF MICRO-PERFORATIONS UNDER GRAZING FLOW	2540
<i>Simon Vandemaele, Herve Denayer, Wim De Roeck, Wim Desmet</i>	

THREE-PORT MEASUREMENTS FOR DETERMINATION OF THE EFFECT OF FLOW ON THE ACOUSTIC PROPERTIES OF PERFORATES	2555
<i>Shail A. Shah, Hans Boden, Susann Boij, Massimo E. D'Elia</i>	

INFLUENCE OF SOUND PRESSURE LEVEL TO 2D ACOUSTIC LINER MODEL WITH 3 RESONATORS UNDER GRAZING FLOW	2565
<i>Takeru Nomura</i>	

INTERIOR NOISE/STRUCTURAL ACOUSTICS AND ACTIVE NOISE CONTROL

CONTRIBUTIONS OF DIFFERENT SOURCES TO CABIN NOISE OF A SUPERJET 100 IN CRUISE FLIGHT CONDITION.....	2589
<i>Petr Moshkov</i>	
PLANE WAVE SCATTERING AND ABSORPTION ANALYSIS OF PERIODIC METASURFACE WITH MODE MATCHING METHOD	2598
<i>Chao Shen, Yu Liu, Lixi Huang</i>	
REDUCING FLOW-INDUCED NOISE AND VIBRATIONS BY RESONANT METAMATERIALS WITH MULTIPLE STOP BAND BEHAVIOR	2609
<i>Felipe Alves Pires, Herve Denayer, Elke Deckers, Claus Claeys, Wim Desmet</i>	
ACTIVE CONTROL OF TRAILING EDGE NOISE	2619
<i>Steven Buck, Stefan Oerlemans, Octavio Hernandez Mascarell, Phillip Joseph, William N. Alexander, Stefan Leticia</i>	

JET NOISE VIII

NEAR-FIELD TURBULENT STRUCTURES IN SUPERSONIC RECTANGULAR JETS USING 3D PARABOLIZED STABILITY EQUATIONS	2639
<i>Daniel Rodriguez, Chitrarth Prasad, Datta Gaitonde</i>	
NONLINEAR DYNAMICS OF FORCED WAVEPACKETS IN TURBULENT JETS	2655
<i>Igor Maia, Peter Jordan, Liam Heidt, Tim Colonius, Akhil Nekkanti, Oliver T. Schmidt</i>	
EFFECT OF RELATIVE MOMENTUM AND TEMPERATURE ON THE AEROACOUSTIC CHARACTERISTICS OF DUAL IMPINGING JETS	2669
<i>Vikas Nataraj Bhargav, Yogesh Mehta, Rajan Kumar, Farrukh Alvi</i>	
UNSTEADY CHARACTERISTICS OF MODE OSCILLATION FOR SCREECHING JETS	2689
<i>Hasan Kamliya Jawahar, Kabilan Baskaran, Mahdi Azarpeyvand</i>	
EFFECT OF APPROXIMATE TENSOR REPRESENTATIONS FOR HIGH-ORDER TURBULENCE CORRELATIONS IN COMPLEX AXI-SYMMETRIC FLOW FIELDS.....	2700
<i>Mohammed Z. Afsar, Vasily Gryazev, Anton P. Markesteijn, Sergey A. Karabasov</i>	

PROPELLER, ROTORCRAFT AND V/STOL NOISE IV

ON THE VERY LOW FREQUENCY SCATTERING OF PROPELLER NOISE BY A NEIGHBORING CYLINDER	2725
<i>Elina Cros, Michel Roger, Gilles Serre</i>	
ON THE NOISE GENERATION MECHANISMS OF OVERLAPPING PROPELLERS.....	2741
<i>Chaitanya C. Paruchuri, Phillip Joseph, Deepak C. Akiwate, Anthony B. Parry, Stephen D. Prior</i>	
AEROACOUSTIC PERFORMANCE OF ROTORS IN TANDEM CONFIGURATION	2760
<i>Alper Celik, Nur Syafiqah Jamaluddin, Kabilan Baskaran, Djamel Rezgui, Mahdi Azarpeyvand</i>	

WING-TIP MOUNTED PROPELLER: ANALYSIS AND ADJOINT SENSITIVITIES OF NOISE
GENERATION AND PROPAGATION..... 2773
Ramiz O. Icke, Oktay Baysal

ANTI-PHASE VORTEX REDUCTION CONTROL FOR ROTOR NOISE SUPPRESSION..... 2787
Nhan T. Nguyen, Juntao Xiong, Raja Zahirudin, Sihong Yan, Jose Palacios

TURBOMACHINERY AND CORE NOISE II

SWIRL-NOZZLE INTERACTION EXPERIMENTS: INFLUENCE OF INJECTION-
RESERVOIR PRESSURE AND INJECTION PULSE DURATION 2832
Lionel Hirschberg, Friedrich Bake, Karsten Knobloch, Steven J. Hulshoff

TURBINE TONE NOISE PREDICTION IN HIGH SPEED TURBINES USING A LINEARIZED
CFD SOLVER: COMPARISON WITH MEASUREMENTS..... 2843
Jose Ramon Fernandez Aparicio, Adolfo Serrano

ACOUSTIC/FLUID DYNAMICS INTERACTIONS VI

EXPERIMENTAL AND ANALYTICAL INVESTIGATION OF THE DISTORTION OF
TURBULENCE INTERACTING WITH A POROUS AIRFOIL 2857
Riccardo Zamponi, Stephane Moreau, Daniele Ragni, Christophe F. Schram

NON-LINEAR FORCHHEIMER CORRECTIONS IN ACOUSTIC SCATTERING..... 2877
Matthew Colbrook, Lorna J. Ayton

EXPERIMENTAL CHARACTERIZATION OF THE NOISE GENERATED BY AN AIRFOIL
OSCILLATING ABOVE STALL..... 2887
*David Raus, Benjamin Cotte, Romain Monchaux, Lisa Sicard, Emmanuel Jondeau, Pascal
Souchotte, Michel Roger*

AIRFRAME/HIGH-LIFT NOISE VII

MODELLING THE DISSIPATION RANGE OF VON KÁRMÁN TURBULENCE SPECTRUM..... 2900
Fernanda Leticia Dos Santos, Laura Botero, Cornelius Venner, Leandro D. De Santana

FLOW FIELD ANALYSIS AROUND PRESSURE SHIELDING STRUCTURES..... 2920
*Mate Szoke, Nandita Nurani Hari, William J. Devenport, Stewart A. Glegg, Tom-Robin
Teschner*

INFLUENCE OF SURFACE ROUGHNESS GEOMETRY ON TRAILING EDGE WALL
PRESSURE FLUCTUATIONS AND NOISE..... 2945
*Fernanda Leticia Dos Santos, Nikolaj A. Even, Laura Botero, Cornelius Venner, Leandro D.
De Santana*

LAMINAR-TURBULENT TRANSITION AND INTERMITTENCY EFFECTS ON
SECONDARY TONES FROM A NACA0012 AIRFOIL..... 2960
Tulio Rodarte Ricciardi, William Wolf, Kunihiko Taira

AEROACOUSTIC CHARACTERISTICS OF A WIND TURBINE AIRFOIL UNDER DUSTY
AIR CONDITIONS..... 2970
Yuejun Shi, Wolfgang Kollmann

DUCT ACOUSTICS V

- TOWARDS SOUND ABSORPTION IN A CYLINDRICAL LINED DUCT USING CFD WITH TIME-DOMAIN IMPEDANCE BOUNDARY CONDITION..... 2986
Loris Casadei, Thomas Node-Langlois, Hugues Deniau, Estelle Piot, Cyril Polacsek
- ERROR ANALYSIS FOR 1D PROPAGATION USING EIGEN ANALYSIS IN GENERAL CURVILINEAR COORDINATES 3004
Rhiannon Hawkins, Alexander G. Wilson
- SIGNIFICANCE OF CUT-OFF MODES IN ACOUSTIC RADIATION FROM DUCTS 3046
Ben Baddour, Phillip Joseph, Alan McAlpine, Ronnie Leung

INTEGRATION EFFECTS AND FLIGHT ACOUSTICS

- THEORETICAL METHODS FOR THE PREDICTION OF NEAR-FIELD AND FAR-FIELD SOUND RADIATION OF FAN TONES SCATTERED BY A CYLINDRICAL FUSELAGE..... 3062
Dionysios-Marios Rouvas, Alan McAlpine
- MEASUREMENT AND MODELLING OF AERO-ACOUSTIC INSTALLATION EFFECTS IN TRACTOR AND PUSHER PROPELLER ARCHITECTURES 3092
Jernej Drofnik, Matej Andrejasic, Blaz Mocan, Tadej Kosel, Julien Christophe, Joachim N. Dominique, Christophe F. Schram, Antoine Hajczak, Corneliu Stoica, Raluca Balasa, Mihaela Manea
- NUMERICAL ASSESSMENT OF FAN NOISE CONFINEMENT EFFECTS IN A CLOSED WIND-TUNNEL..... 3119
Mathieu Lorteau, Thomas Le Garrec

JET NOISE IX

- A STUDY OF FLOW AND NOISE FROM SUPERSONIC PLUG NOZZLES..... 3134
Khairul Q. Zaman, Brian Heberling
- BLOCKAGE EFFECTS ON THE PRESSURE FIELD OF 3D-PRINTED SMALL-SCALE JET NOZZLES 3156
Anderson Proenca, Jack Lawrence
- EFFECT OF NOZZLE GEOMETRY ON THE SPACE-TIME EMISSION OF SCREECH TONES 3174
David Morata, Dimitri Papamoschou
- THE USE OF A NOISE BARRIER WITH A CUT-OUT TO REDUCE ACOUSTIC LEVELS DURING A ROCKET LAUNCH 3190
Evren Yenigelen, Philip J. Morris

PROPELLER, ROTORCRAFT AND V/STOL NOISE V

- ON THE BALANCE BETWEEN THE TONAL AND BROADBAND NOISE OF UNINSTALLED PROPELLERS 3205
Deepak C. Akiwate, Anthony B. Parry, Phillip Joseph, Chaitanya C. Paruchuri

ACOUSTICALLY TESTING STOCK AND MODIFIED UAS PROPELLERS IN BOTH THE
NEAR AND FAR FIELD 3226
Kenneth W. Van Treuren, Ricardo Sanchez, Charles Wisniewski, Paul Leitch

HELICOPTER ACOUSTICS MODEL (HAM): A MID-FIDELITY AEROACOUSTICS MODEL
FOR PREDICTING HELICOPTER NOISE USING LIMITED MEASUREMENTS 3241
Nathan Moshman

AERODYNAMICS AND AEROACOUSTICS CHARACTERISATION OF ISOLATED ROTOR
IN HOVER AND TRANSITION TO FORWARD FLIGHT 3252
*Nur Syafiqah Jamaluddin, Alper Celik, Kabilan Baskaran, Djamel Rezgui, Mahdi
Azarpeyvand*

TURBOMACHINERY AND CORE NOISE III

LARGE-EDDY SIMULATION OF A LINEAR COMPRESSOR CASCADE WITH TIP GAP:
AERODYNAMIC AND ACOUSTIC ANALYSIS 3263
Regis Koch, Marlene Sanjose, Stephane Moreau

AEROACOUSTIC NOISE PREDICTION FROM A CONTRA-ROTATING COOLING FAN
USED IN DATA CENTER COOLING SYSTEMS 3284
Sahan Wasala, Yutong Xue, Ted Wiegandt, Lon Stevens, Tim Persoons

FAN TEST RIG FOR DETAILED INVESTIGATION OF NOISE GENERATION
MECHANISMS DUE TO INFLOW DISTURBANCES 3297
*Ulf Tapken, Luciano Caldas, Robert Meyer, Maximilian Behn, Lukas Klähn, Robert Jaron,
Angelo Rudolphi*

EMPIRICAL STABILITY OF ENGINE TONES MEASURED IN RIG AND ENGINE TESTING..... 3315
William Schuster

Author Index