22nd International Congress on Acoustics (ICA 2016)

Buenos Aires, Argentina
5-9 September 2016

Volume 1 of 7

Editors:

Federico Miyara          Vivian Pasch
Ernesto Accolti          Nilda Vechiatti

# TABLE OF CONTENTS

**VOLUME 1**

## PLENARY LECTURE

**FROM ACOUSTIC SIMULATION TO VIRTUAL AUDITORY DISPLAYS** ................................................................. 1
  Michael Vorländer

## EN2 - NOISE MAPPING

**REDUCING GEOMETRY OR DETAILING IT? COMPARISON BETWEEN MEASURED AND MODELED MICROSCALE URBAN SPACES** .................................................................................................................. 11
  Rafaela Estevão Da Rocha, Stelamaris Rolla Bertoli, Alexandre Virginelli Maiorino

**NOISE PROPAGATION SOFTWARE COMPARISON: A CASE OF STUDY BETWEEN SOUNDPLAN AND CODE_TYMSPAN** .................................................................................................................. 21
  Esteban Zanardi, Jorge Carrasco Henríquez, Jorge Torres

**TIME AND COST SAVING SOFTWARE TECHNIQUES AND THEIR APPLICATION IN LARGE-SCALE NOISE MAPPING PROJECTS** ........................................................................................................... 29
  Antonio Notario

**ISO 1996 MEASUREMENT PROCEDURE AND THE UNCERTAINTY ASSOCIATED IN STRATEGIC NOISE MAPS** ................................................................................................................................................. 39
  David Montes González, Juan Miguel Barrigón Morillas, Guillermo Rey Gozalo, Pedro Atanasio Moraga, Rosendo Vilchez-Gómez, Juan Antonio Méndez Sierra, Rubén Maderuelo Sanz

**ACOUSTIC BARRIER FOR OUTDOOR MUSIC EVENT: THE “RODA DE SAMBA” IN RIO DE JANEIRO** ............... 48
  Lygia Niemeyer, Marina Cortês, Nayara Gevú

## EN1 – NOISE ASSESSMENT AND CONTROL

**LOW FREQUENCY NOISE AND DISTURBANCE ASSESSMENT METHODS: A BRIEF LITERATURE OVERVIEW AND A NEW PROPOSAL** ............................................................................................................. 58
  Marco Caniato, Federica Bettarello, Fausti Patrizio, Lucia Marsich, Alessio Ferluga, Chiara Schmid

**ANALYSIS OF ENVIRONMENTAL NORMATIVE ASSESSMENTS OF NOISE IMMERSION: GLOBAL VALUES VS SPECIFICALLY DETAILED VALUES** .................................................................................................. 67
  Jorge Carrasco Henríquez, Esteban Zanardi, Jorge Torres

**EFFECTS OF NOCTURNAL AIR AND RAIL TRAFFIC NOISE ON SLEEP** .......................................................... 77
  Uwe Müller, Eva-Maria Elmenhorst, Franco Mendolia, Mathias Rastner, Sarah McGuire, Daniel Aeschbach

**TESTS OF INFLUENCE OF HIGH FREQUENCY NOISE ON HUMAN PSYCHOPHYSICAL EFFICIENCY** ............ 83
  Bozena Smagowska

**USING A SMARTPHONE APPLICATION TO PERFORM A FAST QUALITATIVE NOISE EXPOSURE EVALUATION IN A MINE SITE** ............................................................................................................. 92
  Luis Corral, Pierre Aumond

**NORAH (NOISE RELATED ANNOYANCE, COGNITION, AND HEALTH): QUESTIONS, DESIGNS, AND MAIN RESULTS** .................................................................................................................................................. 98
  Rainer Guski, Maria Klatte, Ulrich Moehler, Uwe Müller, Anja Zur Nieden, Dirk Schreckenberg

## BA1 – BIOMEDICAL ACOUSTICS

**BIOMEDICAL ACOUSTIC IMAGING SENSORS FOR U-HEALTH CARE APPLICATIONS** ........................................... 106
  V. R. Singh

**A STUDY ON THE FEASIBILITY OF MEMS PIEZOELECTRIC ACCELEROMETER COUPLED TO THE MIDDLE EAR AS SENSOR FOR TOTALLY IMPLANTABLE HEARING DEVICES** ......................................................... 114
  André Geising, Diego Calero, Bernardo Maria, Stephan Paul, Julio Cordioli

**PHOTOACOUSTIC IMAGING OF VASCULATURE WITH PARABOLIC ARRAY TRANSDUCER** ............................. 124

**THE VARIABLE COCHLEAR HYDRO-MECHANICAL INERTANCE** ....................................................................... 128
  Santos Tieso, Lucas Fantini, Francisco Messina, Nahuél Cacavelos, Gilda Farelli, Leonardo Zavala, María Tieso, Sebastian Iezzi, Nicolás Casco Richiede

**ON THE RELATION BETWEEN PRESSURE APPLIED TO THE CHEST PIECE OF A STETHOSCOPE AND PARAMETERS OF THE TRANSMITTED BIOACOUSTIC SIGNALS** ......................................................... 136
  Karolina M. Nowak, Łukasz Nowak

**ADVANCES IN CORTICAL BONE ASSESSMENT USING ULTRASONIC RESONANCES AND GUIDED WAVES** ................................................................................................................................. 145
  Jean-Gabriel Minonzio, Quentin Vallet, Nicolas Bochud, Quentin Grimal, Pascal Laugier
OBSERVING CYTOSKELETAL CHANGES IN CANCER CELLS USING HIGHFREQUENCY (10-100 MHZ) ULTRASONIC SPECTROSCOPY .................................................................154
Nicola Prodi, Chiara Visentin

SENSITIVITY OF HIGH-FREQUENCY ULTRASOUND TO BREAST CANCER LOBULAR CARCINOMAS: RESULTS FROM PHANTOM AND SURGICAL SPECIMEN STUDIES .................................................162
Zachary Coffman, Nicole Cowan, Robyn Omer, Timothy Doyle

HISTOLOGY MIMICKING PHANTOMS FOR THE HIGH-FREQUENCY ULTRASOUND OF BREAST CANCER SURGICAL MARGINS: COMPARISON BETWEEN GELATIN AND AGAROSE MEDIA ..................................................................................171
Timothy Doyle

EVALUATING MARGIN STATUS WITH HIGH-FREQUENCY (20-80 MHZ) ANALYTICAL ULTRASOUND DURING BREAST CONSERVATION SURGERY ..................................................................................................................180
Robyn Omer, Amy Lafond, Caitlin Carter, Leigh Neumayer, Rachel Factor, Timothy Doyle

DETECTING BREAST CANCER WITH HIGH-FREQUENCY (20-80 MHZ) ULTRASOUND: A HISTOLOGICAL PERSPECTIVE .................................................................................................................................189
Timothy Doyle

AA5 – CHALLENGES AND SOLUTIONS IN ACOUSTICAL MEASUREMENTS AND DESIGN

MODELING AND MEASUREMENTS OF AIRCRAFT NOISE FOR SINGLE-FAMILY HOUSES TO MEET LOCAL ORBENANCE .................................................................................................................................199
Christopher Barnobi, Mike Greene, Adam Young, Arno Bommer, Robert Bruce, Isaac Harwell

CASE STUDIES OF CONCAVE ROOMS FOR SPEECH AND MUSIC: MEASUREMENT AND DESIGN ..................................................................................................................209
David S. Woolworth

THE SIMPLIFIED METHOD VERSUS THE DETAILED METHOD OF CALCULATING FLANKING SOUND TRANSMISSION THROUGH WALLS WITH LININGS ..................................................................................216
Jeffrey Mahn, Christoph Hoeller, David Quirt

STRAVINSKY HALL OF THE MOSCOW MUSICAL THEATRE “HELIKON-OPERA”: ACOUSTIC CHALLENGES AND ACHIEVED RESULTS ..............................................................226
Dmitry Berman, Nikolay Kanev, Anatoly Livshitz

SPEECH COHERENCE INDEX: AN INTRINSICALLY SOURCE INDEPENDENT METHOD TO ESTIMATE INTELLIGIBILITY .................................................................................................................................236
Tobi Stutz, Roger Schwenke

ANALYSING, QUANTIFYING AND IMPROVING THE SOUND TRANSMISSION BETWEEN TWO PERFORMANCE HALLS IN A COMMON BUILDING .................................................................................................244
David Griesinger

MODIFIED WAVE EQUATION FOR MODELLING DIFFUSE SOUND FIELDS .................................................................................................................................254
Hugo Dujourdy, Baptiste Pialot, Thomas Toulemonde, Jean-Dominique Polack

WHAT IS “PROXIMITY”, HOW DO EARLY REFLECTIONS AND REVERBERATION AFFECT IT, AND CAN IT BE STUDIED WITH LOC AND EXISTING BINAURAL DATA? .....................................................264
David Griesinger

PLAYBACK OF NON-INDIVIDUAL BINAURAL RECORDINGS WITHOUT HEAD TRACKING, AND ITS POTENTIAL FOR ARCHIVING AND ANALYZING CONCERT HALL ACOUSTICS ..................................................................................274
David Griesinger

ROOM ACOUSTIC EXPERIMENTS INSIDE THE UNIVERSIDADE FEDERAL DE SANTA MARIA INDUSTRIAL COLLEGE: A CASE STUDY WITH LOW-COST INSTRUMENTATION ..................................................................................283
Eduardo Silva, Lúcia Oiticica

ANALYSIS OF ACOUSTIC DEVICES USED IN HOMESTUDIO .................................................................................................................................................................293
Timothy Doyle

SC1 – SPEECH COMMUNICATION

HOW LONG IS A VOCAL TRACT? COMPARISON OF ACOUSTIC IMPEDANCE SPECTROMETRY WITH MAGNETIC RESONANCE IMAGING .................................................................................................303
Noel Hanna, Jason Amatoury, John Smith, Joe Wolfe

INFLUENCE OF CHANGES OF THE GLOTTAL WAVEFORM ON VOWEL PRODUCTION .................................................................................................................................313
Lukas Schickhofer, Anders Dahkhld, Mihai Mihaescu

COPY SYNTHESIS OF RUNNING SPEECH BASED ON VOCAL TRACT IMAGING AND AUDIO RECORDING .................................................................................................................................323
Benjamin Elie, Yves Laprie

EMOTION RECOGNITION FROM SPEECH USING A PHYSICAL MODEL .................................................................................................................................333
Northide Kitaoka, Shuhei Segawa, Kazuya Takeda

STIMULI USED IN MELODIC INTONATION THERAPY WITH RELATION TO AUTOCORRELATION FUNCTION PARAMETERS .................................................................................................................................341
Andrés Sabater, Alan Rubellin

ON THE USE OF THE ITALIAN MATRIXED WORD TESTS IN ROOM ACOUSTICS FOR EVALUATING SPEECH RECEPTION .................................................................................................................................348
Nicola Prodi, Chiara Visentin
EFFECT OF BANDWIDTH ON THE INTELLIGIBILITY OF SPANISH WORDS FILTERED THROUGH A SERIES OF PASS-BAND FILTERS .......................................................... 358
Emilio Luque, Shin-Ichi Sato, Florent Marson

LARGE-SCALE ANALYSIS OF SPANISH /S/-LENITION USING AUDIOBOOKS ........................................................... 367
Neville Rauten, Mark Liberman

SPEECH RECOGNITION THROUGH THE ANALYSIS OF SPOKEN SYLLABLES USING AUTOCORRELATION FUNCTION PARAMETERS ....................................................... 377
Alan Rubellin, André Sabater

ROBUST TONAL AND NOISE SEPARATION IN PRESENCE OF COLORED NOISE, AND APPLICATION TO VOICED FRICATIVES .......................................................... 385
Benjamin Elie, Gilles Chardon

AB1 – ANIMAL BIOACOUSTICS

SONG AND GENETIC DIVERGENCES BETWEEN MIGRATORY AND SEDENTARY POPULATIONS OF A SONGBIRD, THE BLACKCAP SYLVIA ATRICAPILLA .......................................................... 395
Thierry Aubin, Juliette Linossier, Sandor Zsibik, Emmanuelle Baudry, Hélène Courvoisier

PHONOTACTIC RESPONSE DEPENDS ON TRACKBALL SURFACE TEXTURE IN GRYLLUS BIMACULATUS (GRYLLIDAE, ORTHOPTERA) .............................................................. 404
Edith Juliette Sarmento-Ponce, Berthold Heavig, Michael Sutcliffe

PASSIVE ACOUSTIC MONITORING OF CETACEANS AS A TOOL FOR MONITOR THE PRESENCE OF CETACEANS DURING SEISMIC SURVEYS .............................................................. 411
Andrea Dalben, João Ristow, Guillaume Barrault

DEVELOPMENT OF A COMPUTATIONAL TOOL TO ANALYZE SOUNDS: A BIOLOGICAL STUDY WITH ANURAN ........................................................................................................... 419
Carolina Salgado Costa, Francisco Cantillo, Federico Iasi, Nildu Vecchiatti, Guillermo Natale

HOW ECHOLOCATING BATS LISTEN TO THEIR ECHOES ........................................................................................................ 429
Hiroshi Riquimaroux

PP2 – PRODUCT SOUND QUALITY AND MULTIMODAL INTERACTION

STRUCTURAL ANALYSIS OF THE VALUE EVALUATION OF VEHICLE DOOR-CLOSING SOUNDS .......................................................................................................................... 436
Masayuki Takada, Hiroaki Mori, Shinji Sakamoto, Shin-Ichi Isamitya

A SOUND QUALITY MODEL FOR WASHING MACHINE SOUNDS BASED ON ARTIFICIAL NEURAL NETWORK ........................................................................................................ 446
M. Ercan Altinsoy, Serkan Atamer

MODELLING THE SENSATION OF FLUCTUATION STRENGTH ............................................................................................. 453
Alejandro Osses Vecchi, Rodrigo García León, Armín Kohlrausch

THE QUALITY OF POTATO CHIP SOUNDS AND CRISPNESS IMPRESSION .................................................................................. 462
M. Ercan Altinsoy

RESEARCH ON NONLINEAR EVALUATION MODEL OF COOLING FAN SOUND QUALITY ......................................................................................................................... 468
Lijiang Yang, Rui Zhu

NT1 – BOUNDARY ELEMENT AND MESHLESS METHODS ON ACOUSTICS AND VIBRATIONS

RBF-BASED SHAPES OPTIMIZED WITH GENETIC ALGORITHMS FOR SOUND DIFFUSION .......................................................... 478
Ricardo Patraquim, Luiz Godinho, Paulo Amado-Mendes

THE MFS AS A TOOL FOR THE NUMERICAL ANALYSIS OF VIBRATION PROTECTION DEVICES .......................................................... 488
Carles Albino, Luiz Godinho, Daniel Dias-De-Costa, Paulo Amado-Mendes

BOUNDARY ELEMENT METHOD FOR ACOUSTIC RADIATION FORCE AND TORQUE ACTING ON NON-SPHERICAL PARTICLES .................................................................................. 498
Felix Bob Wijaya, Kuan-Meng Lin

EFFICIENT CALCULATION FOR EVALUATING VAST AMOUNTS OF QUADRUPOLE SOURCES IN BEM USING FAST MULTPOLE METHOD ........................................................................... 508
Takayuki Marumoto, Arije Gunawan, Masuaki Mori, Toshuo Tanuda, Takuya Oshima, Tetsuya Sakuma

EFFICIENT BOUNDARY ELEMENT ANALYSIS OF PERIODIC SOUND SCATTERERS .................................................................................. 518
M. Karimi, P. Croaker, N. Kessissoglou

NT2 – NUMERICAL TECHNIQUES (OTHERS)

ASSESSMENT OF THE FAR-FIELD SOUND RADIATION OF DUCTS USING THE LATTICE BOLTZMANN METHOD AND A TWO-DIMENSIONAL FLOWCS WILLIAMS AND HAWKINGS FORMULATION ........................................................................................................ 527
Danilo Braga, José Santana Neto, André Spillere, André Ricardo Da Silva, Júlio Cordioli

AURALIZATION OF ROAD TRAFFIC/CONSTRUCTION NOISE BY USING NUMERICAL ANALYSIS METHOD WITH DIGITIZED CONVOLUTION TECHNIQUE .......................................................................................... 538
Masaki Tanigawa, Toru Yoshimachi, Kazuo Kashiyama
VOLUME 2

LASER-DRIVEN RESONANCE OF LIGHT-ABSORBING ULTRASOUND CONTRAST MICROBUBBLES .......................................................... 736
Guillaume Lajoinie, Jeong-Yu Lee, Erik Linnartz, Joshua Owen, Pieter Kruizinga, Nico De Jong, Gijs Van Soest, Eleanor Stride, Michel Versluis

CONTRALATERAL SUPPRESSION OF TRANSIENT EVOKED OTOAUDIOE EMISSIONS IN ADOLESCENTS WITH AND WITHOUT TINNITUS .......................................................... 742
Maria Hinalaf, Ana Luz Maggi, Ester Biassoni, Mercedes Hüg, Jorge Perez Villalobo, Karen Grill, Cecilia Ordoñez, Andrea Righetti

DISCOVERING NEW FACTS AND REVEALING EXISTING MYTHS ABOUT THE ACOUSTIC STETHOSCOPE 200 YEARS AFTER ITS INVENTION ............................................................................................................ 752
Łukasz Nowak, Karolina Nowak

AA5 – CHALLENGES AND SOLUTIONS IN ACOUSTICAL MEASUREMENTS AND DESIGN

MEASUREMENTS FOR SIMULATION OF SPEECH INTELLIGIBILITY IN SPACES WITH CONFLICTING REQUIREMENTS .......................................................... 760
Bruce C. Olson, Ana M. Jaramillo

OPTIMIZING FLOOR-CEILING ASSEMBLIES IN WOOD-FRAMED MULTIFAMILY BUILDINGS USING A TWO-RATING METHOD OF EVALUATING IMPACT ISOLATION .......................................................................................................................... 770
John Loverde, Wayland Dong

A DISCUSSION ON THE UNCERTAINTY OF ABSORPTION CHARACTERISTICS MEASURED BY ENSEMBLE AVERAGING TECHNIQUE FOR ROOM ACOUSTICS SIMULATIONS ........................................................................................................ 780
Toru Otsuru, Reiji Tomita, Noriko Okamoto, Emi Ueda, Asami Nakamura

AA4 – CALCULATION MODELS FOR TIMBER STRUCTURES (SILENT TIMBER BUILD)

MODELLING OF THE TAPPING MACHINE FOR FINITE ELEMENT PREDICTION TOOLS – PRELIMINARY PARAMETRIC STUDIES ........................................................................................................................ 788
Juan Negrereira, Delphine Bard

REVERSE SEA TO PREDICT FLANKING TRANSMISSION IN TIMBER FRAMED CONSTRUCTIONS .......................................................................................................................... 799
Jean-Luc Koutouyanji, Gerard Borello, Heinz Folk

MODELLING VARIOUS FLOOR AND WALL ASSEMBLIES AND COMPARISONS TO MEASURED VALUES .......................................................................................................................... 809
Delphine Bard, Klau Hagberg, Tobias Augustsson

ANALYSIS OF ACOUSTICAL BEHAVIOR OF BARE CROSS LAMINATED TIMBER FLOORS FOR THE EVALUATION OF THE IMPROVEMENT OF IMPACT SOUND INSULATION .......................................................................................................................... 816
Antonino Di Bella, Nicola Granzotto, Luca Barbarevi

HYBRID CROSS-LAMINATED TIMBER FLOORS. COMPARISON OF MEASUREMENTS AND CALCULATIONS .................................................................................. 826
Anders Homb

SEAP – ACOUSTIC DESIGN TOOL FOR STORA ENSO BUILDING SOLUTIONS .......................................................................................................................... 836
Klaus Hagberg, Pontus Thorsson, Andreas Golger, Delphine Bard

MEASUREMENT SERIES TO VERIFY THE ACCURACY OF STORA ENSO ACOUSTIC PREDICTION TOOL - SEAP .......................................................................................................................... 843
Pontus Thorsson, Klaus Hagberg, Andreas Golger

EFFECT OF DIFFERENCE IN SPECIFICATION ON SOUND INSULATION IN CROSS LAMINATED TIMBER SEPARATION WALL .......................................................................................................................... 852
Atsuo Hiramitsu, Koji Harada, Kiyomi Noji

AA8 – LEGISLATION AND REGULATIONS IN BUILDING ACOUSTICS

ESTABLISHMENT OF INDOOR NOISE REGULATION BETWEEN ADJACENCY HOUSEHOLDS IN APARTMENT BUILDING .......................................................................................................................... 859
Kyoung Woo Kim, Hye Kyung Shin, Jun Oh Yeon, Kwan Seop Yang

SUGGEST TOILET NOISE STANDARD FOR MULTI-DWELLING RESIDENTIAL BUILDING .......................................................................................................................... 866
Hye Kyung Shin, Kyoung Woo Kim, Jun Oh Yeon, Kwan Seop Yang

COMPARISON OF ACOUSTIC REGULATIONS FOR HOUSING AND SCHOOLS IN SELECTED COUNTRIES IN EUROPE AND SOUTH AMERICA – A PILOT STUDY .......................................................................................................................... 873
María Machimbarrena, Birgit Rasmussen

ESTABLISHMENT OF THE ACOUSTICAL STANDARD OF THE KOREAN CLASSROOMS USING SPEECH INTELLIGIBILITY TEST .......................................................................................................................... 883
Chan Hoon Haan, Chan Jae Park

THE NEW STANDARD DIN 18041 – ACOUSTIC QUALITY IN ROOMS .......................................................................................................................... 890
Christian Nocke
<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACOUSTICS EVOLUTION OF OFFICIAL CONSTRUCTIVE SOLUTIONS FOR IMPACT NOISE IN THE PERIOD 2005-2014 IN CHILE.</td>
<td>902</td>
</tr>
<tr>
<td>TRANSLATION OF EXISTING IMPACT SOUND INSULATION DESCRIPTORS INTO NEW PROPOSED ONES, BASED ON A LARGE SET OF IN SITU MEASUREMENTS.</td>
<td>911</td>
</tr>
<tr>
<td>REQUIREMENTS AND BUILDING GUIDELINES FOR THE RETROFITTING OF TRADITIONAL TIMBER FLOORS.</td>
<td>921</td>
</tr>
<tr>
<td>NT2 – NUMERICAL TECHNIQUES (OTHERS)</td>
<td></td>
</tr>
<tr>
<td>ON ACOUSTICS OF DIESEL PARTICULATE FILTERS</td>
<td>933</td>
</tr>
<tr>
<td>PREDICTIONS OF THE FAR-FIELD NOISE DUE TO VORTEX-SHEDDING USING A LATTICE BOLTZMANN SCHEME AND AN ACOUSTIC ANALOGY</td>
<td>944</td>
</tr>
<tr>
<td>ROOM ACOUSTICS DESIGN USING SWARM OPTIMIZATION METHOD</td>
<td>954</td>
</tr>
<tr>
<td>MULTIPLE-SCATTERING THEORY FOR TWO-DIMENSIONAL ARBITRARILY SHAPED ACOUSTIC COMPOSITES</td>
<td>964</td>
</tr>
<tr>
<td>USE OF BOUNDARY CONDITIONS OF IMPEDANCE, CONTINUITY, SOMMERFELD, FOR EVALUATING SOUND ATTENUATION OF MIXED PASSIVE SILENCERS WITH FEM-2D</td>
<td>974</td>
</tr>
<tr>
<td>MUFFLER SHAPE OPTIMIZATION ACCOUNTING FOR ACOUSTIC-STRUCTURE INTERACTION</td>
<td>984</td>
</tr>
<tr>
<td>PA2 – SONOCHEMISTRY AND SONOPROCESSING</td>
<td></td>
</tr>
<tr>
<td>THE USE OF ULTRASOUND TO ENHANCE CRYSTALLIZATION OF MINERALS FROM CONCENTRATED SALINE EFFLUENT</td>
<td>994</td>
</tr>
<tr>
<td>UNDERSTANDING AND OPTIMISING SONICATION CONDITIONS FOR CRYSTALLISATION PROCESSES.</td>
<td>1003</td>
</tr>
<tr>
<td>STUDY ABOUT THE APPLICATION OF ACOUSTIC AGGLOMERATION OF AEROSOLS FOR SOURCE TERM MITIGATION IN NUCLEAR ACCIDENTS</td>
<td>1010</td>
</tr>
<tr>
<td>ACOUSTIC DESIGN ASPECTS OF MEGASONIC REACTORS FOR OILS AND FAT SEPARATION</td>
<td>1020</td>
</tr>
<tr>
<td>HIGH FREQUENCY SONOLUMINESCENCE IN SULPHURIC ACID AND PHOSPHORIC ACID</td>
<td>1030</td>
</tr>
<tr>
<td>NEW ULTRASONIC TECHNOLOGIES FOR FOOD DEHYDRATION PROCESS INTENSIFICATION</td>
<td>1038</td>
</tr>
<tr>
<td>MAGNIFICATION OF ATOMIC LINES RESOLUTION AND OPTICS OF Bubbles ORIGINATED BY LASER BREAKDOWN OF SALT WATER IN ULTRASOUND FIELD</td>
<td>1048</td>
</tr>
<tr>
<td>AA5 – CHALLENGES AND SOLUTIONS IN ACOUSTICAL MEASUREMENTS AND DESIGN</td>
<td></td>
</tr>
<tr>
<td>OBJECTIVE DETECTION METHOD OF SOUND COLORATION IN ELECTROACOUSTIC ENHANCEMENT SYSTEM</td>
<td>1057</td>
</tr>
<tr>
<td>THE ACOUSTIC PERFORMANCE OF WALLS MADE WITH SUSTAINABLE AND INDUSTRIALIZED PANELS</td>
<td>1066</td>
</tr>
<tr>
<td>AA3 – ARCHITECTURAL ACOUSTICS FOR NON-PERFORMANCE SPACES</td>
<td></td>
</tr>
<tr>
<td>ULTRA LOW FREQUENCY FLOATING FLOORS CONTROLLING RESONANCES.</td>
<td>N/A</td>
</tr>
<tr>
<td>ACOUSTIC PROJECTS OF CONTEMPORARIES OPEN PLAN OFFICES IN BRAZIL</td>
<td>1075</td>
</tr>
<tr>
<td>ACOUSTIC INSULATION FACADE OF HISTORICAL BUILDING THAT WILL BE TRANSFORMED IN THE FIRST BRAZILIAN 6 STARS HOTEL.</td>
<td>1084</td>
</tr>
</tbody>
</table>
ACOUSTICS AND ARCHITECTURE IN OFFICE BUILDINGS: HOW THE SITE PLAN AND THE SHAPE OF THE BUILDING AFFECT THE LEVELS OF INCIDENT NOISE IN FACADES ................................................................. 1090
Andrea Destefani, Maria Akutsu, Marcelo De Mello Aquilino, Cristina Y. Kawakita Ikeda

NS1 – AIRCRAFT NOISE - AEROACOUSTICS

VALIDATION OF COLD JET NOISE RIG AT LABORATORY OF ACOUSTICS AND VIBRATION (LVA), FEDERAL UNIVERSITY OF SANTA CATARINA (UFSC) ........................................................................... 1100
José R. L. Neto Sirotto, Victor H. T. Soares, Julio A. Cordioli, Rudner L. Queiroz, César J. Deschamps, Rafael Cooke, Leopoldo P. Bastos

NS5 – SUSTAINABLE MATERIALS FOR SOUND ABSORPTION AND INSULATION

ACOUSTIC PROPERTIES OF GREEN WALLS: ABSORPTION AND INSULATION ..................................................................................... 1110
Rodolfo Thomazelli, Fernando Caetano, Stelamaris Bertoli

BIOBASED POREOUS ACOUSTICAL ABSORBER MADE FROM POLYURETHANE AND WASTE TIRES PARTICLES .................................................................................................................. 1120
Guillermo Soto, Nilda Vechiatti, Norma Marcovich, Federico Iasi, Mirna Mosiewicki, Alejandro Armas

NS4 – MATERIALS FOR NOISE CONTROL

INVESTIGATION OF THE NOISE REDUCTION PROVIDED BY VEGETATION BELT IN DIFFERENT DESIGN STYLES .................................................................................................................. 1128
Qinying Zhang, Linxuan Zhao, Haianan Cui

EXPERIMENTAL STUDY ON SOUND PERFORMANCE OF MICROPOROUS PANEL WITH MEMBRANE-TYPE ACOUSTIC METAMATERIALS COMPOSITE STRUCTURE ................................. 1135
Xiao-Ling Gai, Xian-Hui Li, Tao Xing, Bin Zhang, Jun-Juan Zhao

EVALUATION AND COMPARISON OF ACOUSTIC INSULATION OF TRADITIONAL AND ALTERNATIVE MASONRY IN TUCUMÁN, ARGENTINA ........................................................................... 1141
Leonardo Paterlini, Beatriz Silvia Garzón

CA2 – COMMUNICATION ACOUSTICS

EVALUATION OF THE FREQUENCY RESPONSE OF CONSUMER HEADPHONES AND ITS INFLUENCE TOWARDS A BINAURAL REPRODUCTION WITH HRTF INDIVIDUALIZATION ................................................................. 1151
Jose J. Lopez, Pablo Gutierrez-Parera

SP1 – ACOUSTIC ARRAY SYSTEMS

DEVELOPMENT OF A 3D IMPULSE RESPONSE INTERPRETATION ALGORITHM ......................................................................................... 1161
Federico Nahuel Cacavelos, Augusto Bonelli Toro, Alejandro Bidondo

A SOUND SOURCE LOCALIZATION ALGORITHM USING MICROPHONE ARRAY WITH RIGID BODY ................................................................. 1171
Tao Song, Jing Chen, Daibing Zhang, Tianshu Qu, Xihong Wu

SP3 – MODEL-BASED OPTIMIZATION/ESTIMATION AND ANALYSIS

AN ARTIFICIAL NEURAL NETWORK MODEL FOR PREDICTING SOUND DIRECTION IN DIFFERENT ACOUSTIC ENVIRONMENTS ................................................................................................. 1179
Thomas Schmitz, Jean-Jacques Embrechts

A NEW TOOLBOX FOR THE IDENTIFICATION OF DIAGONAL VOLterra KERNELS ALLOWING THE EMULATION OF NONLINEAR AUDIO DEVICES ........................................................................ 1189
Chen-Fen Huang, Naokazu Taniguchi, Jin-Yuan Liu

EN1 – NOISE ASSESSMENT AND CONTROL

ALTERNATIVE APPROACH FOR VALUING ROAD TRAFFIC NOISE: CASE STUDY OF QUITO, ECUADOR ........................................................................................................................................... 1209
Luis Bravo-Moncayo, José Lucio-Naranjo, Ignacio Pavón

INFLUENCE OF THE TEMPORAL AND SPECTRAL STRUCTURE OF THE ROAD TRAFFIC NOISE ON ANNOYANCE .................................................................................................................. 1219
David Munive, Luis Bravo-Moncayo, Andrés Galvis
STUDY OF THE SOUND RADIATION OF A RECTANGULAR PLATE RESTING ON A WINKLER ELASTIC FOUNDATION
Nicolás A. Bastián-Monarca, Jorge P. Arenas

THE EFFECT OF THE CUSHION ON REDUCING UNDERWATER NOISE CAUSED BY OFFSHORE PILE DRIVING
Qingpeng Deng, Weikang Jiang

CALCULATION OF SOUND RADIATION IN INFINITE DOMAIN USING A MESHLESS METHOD
Shaowei Wu, Yang Xiang

INSTABILITY PREDICTION OF A FULLY UPDATED BRAKE SYSTEM WITH UNCERTAINTY IN CONTACT CONDITIONS
Zhi Zhang, Sebastian Oberst, Joseph C. S. Lai

EXPERIMENTAL CHARACTERIZATION OF DRY FRICTION ISOLATORS FOR SHOCK VIBRATION ISOLATION
Diego Francisco Ledezma-Ramirez, Fernando Javier Elizondo-Garza, Pablo Ernesto Tapia-Gonzalez, Adrian Garcia-Medrez

VOLUME 3

SP2 – ACOUSTIC ARRAY SYSTEM: NEAR-FIELD ACOUSTIC HOLOGRAPHY AND VIBRO-ACOUSTIC FIELD RECONSTRUCTION

UTILIZATION OF WALL REFLECTION DATA IN THE ACOUSTIC PYROMETRY FOR ESTIMATING THE GAS TEMPERATURE IN A DUCT SECTION
Jeong-Guon Ih, Tae-Kyoon Kim

WIDEBAND ACOUSTICAL HOLOGRAPHY
Svend Gade, Jørgen Hald, Bernard Ginn

NEAR-FIELD ACOUSTIC IMAGING BASED ON LAPLACIAN SPARSITY
Efren Fernandez-Grande, Laurent Daudet

MEASUREMENT OF A TARGET'S STRUCTURAL ADMITTANCE AND THE PREDICTION OF ITS SCATTERED FIELD IN DIFFERENT MEDIA
Jeffery D. Tippmann, Sandrine T. Rakotonarivo, William Kuperman, Zachary J. Waters, Philippe Roux, Earl G. Williams

LOCALIZATION OF A DEFECT IN AN IMPACTED PLATE USING TIME-DOMAIN NEARFIELD ACOUSTICAL HOLOGRAPHY AND TIME EVOLUTION OF SPATIAL FEATURES
Jean-Michel Attendu, Annie Ross, Jean-Hugh Thomas

SEPARATION OF TRACK CONTRIBUTION TO PASS-BY NOISE BY NEAR-FIELD ARRAY TECHNIQUES
Elias Zea, Luca Manzari, Ines Lopez Arteaga, Giacomo Squicciarini, David Thompson

SP3 – MODEL-BASED OPTIMIZATION/ESTIMATION AND ANALYSIS

NONLINEAR SIGNAL PROCESSING TECHNIQUES FOR ACTIVE SONAR LOCALIZATION IN THE SHALLOW OCEAN WITH SIGNIFICANT ENVIRONMENTAL UNCERTAINTY AND REVERBERATION
Brian M. Worthmann, David R. Dowling

METHODOLOGY FOR THE STUDY OF ARRAY PROCESSING EMPLOYED FOR THE ANALYSIS OF SOURCE DIRECTIVITY
Amir Musicant, Boaz Rafaely

SP4 – SIGNAL PROCESSING IN ACOUSTICS (OTHERS)

ABOUT DOPPLER-FIZEAU EFFECT ON RADIATED NOISE FROM A ROTATING SOURCE IN CAVITATION TUNNEL
R. Boucheron

PERCEPTUAL AUDIO CODING SCHEMES BASED ON ADAPTIVE SIGNAL PROCESSING TOOLS
Fernando A. Marengo Rodriguez, Sergio A. Castells, Gonzalez D. Sud

EFFECTS OF ACOUSTIC DEGRADATIONS ON COVER SONG RECOGNITION
Julien Ostwaldbi, Jean-Jacques Embrecht

ROBUST ACOUSTICS AND SPEECH PERCEPTION OF AERIAL ROBOT UNDER EGO NOISE FOR SCENE UNDERSTANDING
Hansek Ko, Sungwook Park, Seongkyu Mun

CA2 – COMMUNICATION ACOUSTICS

THE ADVENT OF COMMUNICATION ACOUSTICS IN RETROSPECT
Jens Blauert

HEARING RESEARCH RELEVANT TO COMMUNICATION ACOUSTICS
Barbara Shinn-Cunningham
EVOLUTION OF SOUND REPRODUCTION – FROM MECHANICAL SOLUTIONS TO DIGITAL TECHNIQUES OPTIMIZED FOR HUMAN HEARING .......................................................... 1623

Ville Putkki

VIEWS ON SOUND QUALITY .................................................................................................................. 1633

Alexander Raabe

ON THE CONTRIBUTION OF SPATIAL HEARING TO SPEECH INTELLIGIBILITY ........................................... 1643

Steven Van De Par, Sarinah Satojo, Esther Schoenmaker

CONCERT HALLS – CONVEYORS OF MUSICAL EXPRESSIONS .................................................................... 1651

Tapio Lokki

MODERN ADVANCEMENTS IN AUDIOLGY .................................................................................................. 1659

Jason Galster

A BINAURAL MODEL TO SEGREGATE SOUND SOURCES IN THE PRESENCE OF EARLY REFLECTIONS USING A MULTI-SOURCE PRECEDENCE-EFFECT MODEL ........................................... 1667

Jonas Brausch, Nikhil Deshpande

SOURCE-BLIND BINAURAL SOURCE SEGREGATION UTILIZING HEAD MOVEMENT ................................. 1677

Nikhil Deshpande, Jonas Brausch

EXPERIMENT ON LISTENING DIFFICULTY OF ANNOUNCEMENTS FROM MUNICIPAL PUBLIC ADDRESS SYSTEM BY APPLYING THE METHOD OF CONTINUOUS JUDGMENT BY CATEGORY ........................................ 1686

Junichi Mori, Syun Sonoda, Fumiaki Satoh, Hideto Tachibana

PA3 – ULTRASOUNDS

EFFECT OF CONVECTIVE DRYING ASSISTED BY ULTRASOUND ON DRYING TIME AND AROMA OF TAMARILLO (CYPHOMANDRA BETACEA CAV. SENDT) AND MANGO (MANGIFERA INDICA L.) FRUITS .......................................................................................................................... 1695

Kamila Méndez, Natalia Salazar, Juan Ocampo, Diana Manrique, Catalina Álvarez, Carlos Orrego

CONVERTING SUNLIGHT INTO AUDIBLE SOUND: SOME PRACTICAL MEASUREMENTS ON THE HELIOPHONE ................................................................................................................................. 1705

N. B. Rosen, L. Liu, C. Glorieux, M. Rycháříková, T. Van Der Donck, A. Jacobs

PARTICLE-IMAGE-VELOCIMETRY INVESTIGATION OF FLOW MORPHOLOGY AT SUDDEN EXPANSION AND CONTRACTION IN OSCILLATING FLOWS .......................................................................................................................... 1710


LIGHT DIFFRACTION BY LARGE AMPLITUDE ULTRASONIC WAVES IN LIQUIDS ........................................ 1731

Laszlo Adler, John H. Cantrell, William T. Yost

EXPERIMENTAL AND NUMERICAL RESULTS ON THE EVALUATION OF THE ADHESION LEVEL IN A BONDED TRI-LAYER METAL/ADHESIVE/METAL, USING LAMB GUIDED WAVES ........................................................................................................... 1741

Camille Gauthier, Mihai Predoi, Damien Leduc, Mouans F.Ech-Cherif El-Kettani, Jocelyne Galy

EXTENSION OF THEORETICAL ACOUSTICS TO CURVILINEAR SPACETIME .................................................. 1748

Woon Siong Gan

EVILOATION MODELLING OF FAST AND SLOW MAGNETOACOUSTIC WAVES IN THERMALLY UNSTABLE PLASMA ......................................................................................................................... 1757

Dmitrii Zavershinskii, Nonna Molevich, Igor Zavershinskii, Sergei Pichugin, Dmitrii Ryashchikov

ACOUSTICALLY INDUCED TRANSITIONS OF CHF DISCHARGE IN SWIRL FLOW ........................................... 1767


OVERTURNING OF NONLINEAR ACOUSTIC WAVES IN MEDIA WITH POWER-LAW ATTENUATION .................. 1775

John M. Cormack, Mark F. Hamilton

TIME-RESOLVED IMAGING OF ELECTRICALLY EXCITED GHZ ACOUSTIC VIBRATIONS AT ARBITRARY FREQUENCIES .......................................................................................................................... 1784

Osamu Matsuda, Hirofumi Shono, Shun Kato, Shogo Kaneko, Sylvain Mezli, Motonobu Tomoda, Oliver Wright

ULTRASONIC FATIGUE TEST AND COMSOL FINITE ELEMENT MODELLING .................................................. 1788

Juan Carricordona, Martin Iofrida, Augusto Bonelli Toro, Guido Ferrari, Martin Gómez

AA2 – ACOUSTICS OF WORSHIP SPACES

MEXICO CITY’S CATHEDRAL: AN ARCHAEOACOUSTICAL AND MUSICOLOGICAL ANALYSIS ....................... 1798

Braxton Boren, Guadalupe Caro, Diana Calisto, Julio González, Victor H. Mendoza, Francisco Salazar, Pablo Padilla, Gabriela Villalobos, Alejandro Ramos, Alberto Rivera, Rodrigo Tapia, Carlos Paz, Jezzica Zamudio

EXPANDING SONIC IMAGINATION IN DESIGN PRACTICES WITH ARCHITECTURAL SOUNDWALKS ................... 1807

Alessia Millo, Andrew Hill, Christopher Wood, Josh Reiss, Nick Bryan-Kinns

SS3 – SOUNDSCAPE, PSYCHOACOUSTICS AND URBAN ENVIRONMENT

SOUNDSCAPES IN THREE AREAS OF THE TUCUMÁN PROVINCE, ARGENTINA .................................................. 1817

Natalia Ceravaulo, Beatriz Garzón, Leonardo Paterlini
EN5 – WIND FARM NOISE

ENVIRONMENTAL NOISE DUE TO LARGE WIND TURBINES: WHAT WE HAVE LEARNT .................................................. 1958
Alice Elizabeth González, Pablo Gianini Kovar, Matteo Deambrosi Papini, Matías Hernández Castellani, Martín Paz Urban

DETERMINATION AND ASSESSMENT OF NOISE FROM WIND TURBINES IN GERMANY ........................................... 1967
Andrea Bauerdorf, Thomas Myck

RISK ASSESSMENT RELATED TO NOISE AND INFRASONIC NOISE IN A WIND FARM .............................................. 1975
Dariusz Pleban, Jan Radosz, Bozena Smagowska

A NOISE GENERATION AND PROPAGATION MODEL FOR LARGE WIND FARMS ........................................................ 1981
Franck Bertagnolli

PREDICTION OF ENVIRONMENTAL SOUND PRESSURE LEVELS DUE TO LARGE WIND TURBINES ............................ 1991
Matteo Deambrosi Papini, Matias Hernández Castellani, Alice Elizabeth González, José Cataldo

WIND TURBINE NOISE PREDICTION .......................................................... 2001
Ramani Ramakrishnan, Vijul Sehrawat

PROPAGATION PHENOMENA ASSOCIATED WITH NOISE DUE TO THE OPERATION OF LARGE-SIZED WIND TURBINES .......................................................... 2011
Matías Hernández, Martín Paz Urban, Matteo Deambrosi Papini, Alice Elizabeth González

SOUND PROPAGATION FROM A WIND TURBINE IN A HILLY ENVIRONMENT ........................................................... 2021
Timothy Van Renterghem

SP1 – ACOUSTIC ARRAY SYSTEMS

SPHERICAL HARMONIC SMOOTHING FOR DOA ESTIMATION OF FULLY COHERENT SOURCES ................................... 2027
Byeongho Jo, Jung-Woo Choi

EXPERIMENTAL INVESTIGATION OF MULTIPLE-INPUT MULTIPLE-OUTPUT SYSTEMS FOR SOUND-FIELD ANALYSIS .............................................................. 2037
Hai Morgenstern, Johannes Klein, Bouz Rajafely, Markus Noisternig

FREQUENCY DEPENDENT COPRIME LINEAR MICROPHONE ARRAYS FOR DIRECTION OF ARRIVAL ESTIMATION USING MODEL-BASED BAYESIAN INFERENCE .......................................................... 2046
Dane Bush, Ning Xiang

FLEXIBLE MICROPHONE ARRAY BASED ON MULTICHANNEL NONNEGATIVE MATRIX FACTORIZATION AND STATISTICAL SIGNAL ESTIMATION .............................................................. 2056
Hiroshi Saruwatari, Kazuma Takata, Nobutaka Oto, Shoji Makino

A PARAMETRIC SUPERDIRECTIVE BEAMFORMER WITH UNIFORM LINEAR MICROPHONE ARRAYS ........................... 2066
Gonggong Huang, Jacob Benesty, Jingdong Chen

COMPOSITE AEROACOUSTIC BEAMFORMING OF AN AXIAL FAN .............................................................. 2076
Joffrey Fischer, Con Doolan

ANALYSIS AND DESIGN OF TIME-DOMAIN FIRST-ORDER CIRCULAR DIFFERENTIAL MICROPHONE ARRAYS .................. 2086
Yaakov Buchris, Israel Cohen, Jacob Benesty

TOWARDS AN ENACTIVE ROBOT AUDITION ARCHITECTURE .................................................................................. 2095
Valentin Lunati, Patrick Danès, Claudia Arias, Fernando Bermejo, Fernando González, Juan Rosales, Rodrigo Pérez

AA1 – ACOUSTICS IN EDUCATION

A COMPREHENSIVE SURVEY ON THE CURRENT ACOUSTIC ENVIRONMENT IN CHILD DAY CARE CENTERS IN THE KUMAMOTO CITY REGION, SOUTH WEST JAPAN ......................... 2103
Keiji Kanai

EFFECTS OF AIRCRAFT NOISE ON CHILDREN'S READING AND QUALITY OF INSTRUCTION IN GERMAN PRIMARY SCHOOLS: RESULTS FROM THE NORAH STUDY ................................................................ 2113
Jan Splisski, Kirstin Bergström, Ulrich Möhler, Jochen Mayerl, Thomas Lachmann, Maria Klatte

TEACHING IN A CLASSROOM ENVIRONMENT: SPEECH ADJUSTMENT TO REAL AND SIMULATED CLASSROOM CONDITIONS .................................................................................... 2122
Eric J. Hunter, Timothy W. Leishman, Pasquale Bottalico, Simone Graetzer

VOICE AND CLASSROOM INTERACTIONS – RECENT OUTCOMES ............................................................................. 2132
Vejtech Chmelík, Monika Ryčárková

THE IMPACT OF USING DIFFERENT TIME SAMPLING WINDOWS ON MEASURED NOISE METRICS IN K-12 CLASSROOMS ................................................................. 2138
Laura C. Brill, Lily M. Wang

ED1 – EDUCATION IN ACOUSTICS

A QUASI-EXPERIMENTAL FIELD STUDY OF THE IMPACT OF CLASSROOM NOISE ON ADOLESCENTS’ MATHEMATICAL PERFORMANCE ................................................................. 2148
Bruno Masiero, Tiago Fernandes Tavares

ACTIVE LEARNING IN THE "ANALYSIS AND SYNTHESIS OF MUSICAL SIGNALS" COURSE ........................................... 2158
Bruno Masiero, Tiago Fernandes Tavares
CINTRA: FROM AN INTERDISCIPLINARY CENTRE ON ACOUSTICS TOWARDS AN INTRA-INTER SYNERGETIC NETWORK ............................................................................................................................................................................ 2167
Claudia Arias, Aldo Ortiz Skarp, Mercedes Hug, Jorge Páez Villalobo, Sebastián Ferrere, Fernando Bermejo, Laura Fernández, Maria Hidalgo, Fabián Tommasini, Valentin Lunati, Pablo Kogan, Agustín Cravero, Guillermo Gilberto, Marina Cortellini

SV2 – STRUCTURAL ACOUSTICS AND VIBRATION (OTHERS)

GENERATION OF VIRTUAL SLIDING RESISTANCE ON A GLASSY PANEL USING VIBRATION ................................................................. 2176
Da-Young Kim, Jeong-Guon Ih

ESTIMATION OF THE VIBRATION RESPONSE OF A PLATE WITH UNKNOWN BOUNDARY CONDITIONS USING THE ITERATIVE VARIATION METHOD .......................................................................................................................... 2183
Jong-Han Woo, Jeong-Guon Ih, Minhyun Bai

STUDY OF THE MODAL PARAMETERS OF A TURBINE RUNNER ABLE TO INFLUENCE ITS ACOUSTIC BEHAVIOUR ............................................................................................................................................................................................................. 2189
Nicolae Constantin, Stefan Sorohan, Constantin Valentin Epuran

GUIDED CONVECTED ACOUSTIC WAVE COUPLED WITH A MEMBRANE WALL USED AS NOISE REDUCTION DEVICE ............................................................................................................................................................................................................. 2199
Virginie Meyer, Vincent Martin

MATERIAL PROPERTIES AND MICROSTRUCTURE CONTRIBUTIONS TO VIBRATIONAL DAMPING IN ARUNDO DONAX L: REED CANE FOR WOODWIND INSTRUMENTS ................................................................. 2209
Connor Kemp, Gary Scavone

FUTURE TUNNEL RAILWAY UNDERNEATH A CITY. TRAIN-BUILDINGS TRANSFER FUNCTIONS ESTIMATE AND AT HOME VIBRATION AND NOISE PREDICTION ............................................................................................................................................................................................................. 2219
Fernando Schiappa, Odete Domingues, Francisco Sávio, P. Valério, M. Frade

ON THE USE OF SHUNTED PIEZO ACTUATORS FOR MITIGATION OF DISTRIBUTION ERRORS IN RESONATOR ARRAYS ............................................................................................................................................................................................................. 2230
John Antunes, Philippe Piteau, Xavier Delaune, Laurent Borsoi, Vincent Debut

ON USING THE HILBERT TRANSFORM FOR BLIND IDENTIFICATION OF SYSTEMS WITH COMPLEX MODES ............................................................................................................................................................................................................. 2238
Jose Antunes, Philippe Piteau, Xavier Delaune, Laurent Borsoi, Vincent Debut

AA2 – ACOUSTICS OF WORSHIP SPACES

THE EFFECT OF NOISE CRITERIA LEVELS ON SPEECH INTELLIGIBILITY IN VARIOUS TYPES OF MIHRAB DESIGN ............................................................................................................................................................................................................. 2249
Nazli Che Din, Ahmad Zafar Azaharan, Azril Sani Razak, Mohd Zamri Jusoh, Mohammad Ngazi Dinon, Zainalbi Abdullah

NUMERICAL AND EXPERIMENTAL ACOUSTICAL ANALYSIS OF A CONTEMPORARY MODERN CHURCH ............................................................................................................................................................................................................. 2259
Corrado Schenone, Davide Borelli, Ilaria Pittaluga

ACOUSTICS OF NOTRE-DAME CATHEDRAL DE PARIS ............................................................................................................................................................................................................. 2269
B. N. J. Postma, B. F. G. Katz

ACOUSTICAL REDESIGN OF “NUESTRA SEÑORA DE LA PAZ” ............................................................................................................................................................................................................. 2279
Fernando Del Solar Dorrego, Pablo Gardella

VOLUME 4

REVIEW OF ASPECTS THAT SHAPE THE AURAL EXPERIENCE IN WORSHIP SPACES ............................................................................................................................................................................................................. 2289
Alaa Algargoosh

UW1 – UNDERWATER ACOUSTICS

ARCTIC AMBIENT NOISE: SYNOPTIC MEASUREMENTS IN THE FRAM STRAIT MARGINAL ICE ZONE ............................................................................................................................................................................................................. 2299
Dag Tollefsen, Hanne Sagen, Hans C. Tengesdal

ACOUSTIC NOISE PROPERTIES IN THE RAPIDLY CHANGING ARCTIC OCEAN ............................................................................................................................................................................................................. 2307
Andrew Poulsen, Henrik Schmidt

ACOUSTICAL IMAGES OF THE GULF OF GDANSK ............................................................................................................................................................................................................. 2317
Eugeniusz Kozaczka, Grażyna Grelowska

SEISMIC OCEANOGRAPHY IN BRAZIL FROM LEGACY MCS DATA OF THE OIL AND GAS INDUSTRY ............................................................................................................................................................................................................. 2327
Marcus Vinicius Barão, Berenice Viana Gorriz, Guillaume François Gilbert Barrau, Antonio Henrique Da Fontoura Klein, Izabelle Aller, Marinha Bousfield, João Paulo Ristov

IMPROVING COMPUTATION SPEED IN SHALLOW WATER REVERBERATION MODELING ............................................................................................................................................................................................................. 2335
Dajun Tang

GUIDELINES FOR PREDICTION AND EVALUATION OF ACOUSTIC IMPACT ON UNDERWATER FAUNA ............................................................................................................................................................................................................. 2342
Max Glisser, Ismael Gómez, Camilo Padilla, Patricio Priede

COMPARISON OF TRACKING ALGORITHMS FOR DOLPHIN WHISTLE CONTOUR DETECTION ............................................................................................................................................................................................................. 2352
Pina Gruden, Paul White
ACOUSTIC NOISE INTERFEROMETRY IN A NONSTATIONARY OCEAN .......................................................... 2362
Oleg A. Godin

NT2 – NUMERICAL TECHNIQUES (OTHERS)

TRANSMISSION LOSS OPTIMIZATION USING GENETIC ALGORITHM IN HELMHOLTZ RESONATOR UNDER SPACE CONSTRAINTS.......................................................... 2369
Gabriela Cristina Cândido Da Silva, Maria Alzira De Araújo Nunes

TRANSIENT RESPONSE PREDICTION OF AN IMPULSIVELY EXCITED STRUCTURE USING A SCALING APPROACH ........................................................................................................... 2379
Xianhui Li, Jing Zhang, Tuo Xing

AA2 – ACOUSTICS OF WORSHIP SPACES

ANALYSIS OF ACOUSTIC VARIATIONS DUE TO DIFFERENT USE CONFIGURATIONS IN THE “BASILICA DE SANTA MARÍA DE ELCHE”, VENUE OF THE “MISTERI” .......................................................... 2389
Ana Planells, Aníme Segura, Arturo Barba, Salvador Cerdá, Rosa Cibrián, Alicia Giménez

ED1 – EDUCATION IN ACOUSTICS

PRACTICAL CLASS ON ROOM ACOUSTIC FOR SOUND AND RECORDING DEGREE PROGRAM IN SANTA FE, ARGENTINA ........................................................................................................ 2397
Pablo Delmonte Zalazar, Paula Ayelén Gareis, Ernesto Accolti

ELECTIVE SOUND AND HABITAT IN THE ARCHITECT’S CAREER ............................................................... 2408
Beatriz Garzón, Elisa Soldati, Leonardo Paterlini, Natalia Cerasuolo, Agustina Gayer

PA2 – SONOCHEMISTRY AND SONOPROCESSING

AN ULTRASONIC APPROACH TO INVESTIGATE THE EFFECT OF AERATION ON RHEOLOGICAL PROPERTIES OF SOFT BIOLOGICAL MATERIALS WITH BUBBLES EMBEDDED ......................................................... 2418
Hussein M. Elmehdi, John Page, Martin Scantlon

PA3 - ULTRASONIC

HYBRID LEVITATION APPARATUS FOR LABORATORY X-RAY DIFFRACTION STUDY .............................................. 2429
Yong Il Kim, Ki-Bok Kim, Jun Hee Lee, Soo Hyung Lee, Guen Woo Lee

ACOUSTIC EMISSION SENSORS FOR GFRP WIND TURBINE BLADE ............................................................. 2438
Geon woo Kim, Ki-Bok Kim, Jae-Ki Jeong

A COMPLETE COMSOL AND MATLAB FINITE ELEMENT MEDICAL ULTRASOUND IMAGING SIMULATION ................................................................................................. 2445

ON THE POSSIBILITY OF NON-INVASIVE TISSUE ASSESSMENT USING INDUCED CHANGES IN BACKSCATTERED ENERGY: A K-WAVE SIMULATION ........................................................................ 2455
André Pedroso, Ricardo Simões, Marco Von Kruger, André Alvarenga, Wagner Pereira, César Teixeira

TUNING TO A PARTICULAR ACOUSTIC WHISPERING-GALLERY MODE IN THE GHZ RANGE ........................................ 2462
Sylvain Mezil, Kentaro Fujita, Motonobu Tomoda, Matt Clark, Oliver B. Wright, Osamu Matsuda

SC1 – SPEECH COMMUNICATION

DETAILING SPEECH PROCESSING IN INFANCY USING CORTICAL AUDITORY EVOKED POTENTIALS AND MULTIDIMENSIONAL SCALING ....................................................................................................... 2470
Kathleen McCarthy, Katrin Skoruppa, Paul Iverson

EFFECT OF CONSONANT MANNER ON L2 SPEECH PERCEPTION IN REVERBERATION ................................................................................................................................. 2471

A 3D COMPUTER GAME FOR TESTING PERCEPTION OF ACOUSTIC DETAIL IN SPEECH ..................................... 2477
Daniel Duran, Natalie Lewandowski, Antje Schweitzer

VOICE CONVERSION OF EMOTIONAL SPEECH USING HIDDEN MARKOV MODEL-BASED SPEECH RECOGNITION AND SYNTHESIS .................................................................................. 2487
Tetsuo Kosaka, Yoshiki Nakagawa, Masaharu Kato

INVESTIGATION OF THE EFFECT OF ARTICULATORY-BASED SECOND LANGUAGE PRODUCTION LEARNING ON SPEECH PERCEPTION ........................................................................ 2494
Atsuo Suemitsu, Takayuki Ito, Jianwu Dang, Mark Tiede
PLENARY LECTURE

UNDERSTANDING MUSIC PERCEPTION FROM THE PERSPECTIVE OF OSCILLATION AND RESONANCE .................................................................................................................. 2501
Frank A. Ruano

EN5 – WIND FARM NOISE

WIND TURBINE NOISE AS EXPERIENCED BY IMPACTED RESIDENTS ................................................................................................................................. 2505
Sveinulf Vegone, Willi Larsen

PHYSIOLOGICAL EFFECTS OF WIND TURBINE NOISE ON SLEEP ............................................................................................................................. 2515
Michael G. Smith, Mikhail Ogren, Pontus Thorsson, Eja Pedersen, Kerstin Persson Waye

CHARACTERIZATION OF THE SOUND SPECTRUM OF THE WINDREGARDING ENVIRONMENTAL STUDIES, FOCUSED IN WIND ENERGY DEVICES .............................................................................................................................. 2525
Pablo Gianoli, José Cataldo, Alice Elizabeth Gonzalez, Joaquin Montero

WIND TURBINE NOISE SOURCE CHARACTERISTICS MEASURED WITH A LARGE MICROPHONE ARRAY .......................................................................................... 2535
Stuart Bradley, Torben Mikkelsen, Sabine Von Hünrhein, Mathew Legg

UNDERWATER NOISE MITIGATION FROM PILE DRIVING USING A TUNEABLE RESONATOR SYSTEM ................................................................................................. 2545
Mark Wochner, Kevin Lee, Andrew McNeese, Preston Wilson

SP1 – ACOUSTIC ARRAY SYSTEMS

SWEET-SPOT-INDEPENDENT BINAURAL REPRODUCTION WITH A LISTENER ADAPTIVE LOUDSPEAKER ARRAY ............................................................................................................................. 2554
Marcus F. Simion Galvez, Filippo Maria Fazi

ADVANCED DELAY-AND-SUM BEAMFORMER WITH DEEP NEURAL NETWORK .............................................................................................................................. 2564
Mitsunori Mizumachi, Maya Origuchi

SOUND SOURCE SEPARATION IN COMPLEX ENVIRONMENTS USING AN ARRAYOF-ARRAYS MICROPHONE SYSTEM .............................................................................................................................. 2570
Jorge Trevino, Cesar Salvador, Virgilijus Brauculis, Shuichi Sakamoto, Yutaka Suzuki, Koichi Yoshikawa, Takanori Yamasaki, Kenichi Kadohara

THE OPTIMIZATION DESIGN OF MICROPHONE ARRAY LAYOUT FOR WIDEBAND NOISE SOURCES .............................................................................................................................. 2580
Pengxiao Teng, Jun Lv

IMPEDEANCE ESTIMATION OF A FINITE ABSORBER BASED ON SPHERICAL ARRAY MEASUREMENTS .............................................................................................................................. 2589
Antoine Richard, Efren Fernandez-Grande, Jonas Brunsksog, Cheol-Ho Jeong

AA1 – ACOUSTICS IN EDUCATION

GOOD PRACTICES IN MUSIC ROOM ACOUSTICS IN BRAZIL: A DISSEMINATION ACTION AND EVALUATION OF ITS IMPACT .............................................................................................................................. 2599

ACOUSTIC EVALUATION OF THE DESIGN PROCESS AND CONSTRUCTION OF THE TELEVISION STUDIO IN THE CATHOLIC UNIVERSITY OF URUGUAY .............................................................................................................................. 2605
Leonardo Fiorelli

SPEECH TRANSMISSION INDEX VARIATION DUE TO VENTILATION AND AIRCONDITIONING SYSTEM IN UNIVERSITY CLASSROOMS .............................................................................................................................. 2613

GLOBAL CASE STUDIES OF ACOUSTICS IN CLASSROOMS .............................................................................................................................. 2618
Kenneth P. Ray

INTELLIGIBILITY IN A CLASSROOM: COUPLING EFFECTS BETWEEN OUTDOOR NOISE AND ROOM ACOUSTIC RESPONSE .............................................................................................................................. 2629
Florent Masson, Maximiliano Manuel Yommi, Martin Crapa

PA3 - ULTRASOUND

MEASUREMENT OF DYNAMIC YOUNG’S MODULUS BY ULTRASONIC RESONANCE WITH CYLINDRICAL RODS AND FINITE ELEMENT MODELLING ANALYSIS .............................................................................................................................. 2639
Martin Iofrida, Juan Carricundo, Augusto Bonelli Toro, Martin Gómez, Guido Ferrari

TYPE IV COMPOSITE PRESSURE VESSEL CHARACTERIZATION BY MEASUREMENT OF ACOUSTIC REVERBERATION .............................................................................................................................. 2648
Hossep Achdijian, Andrés Arciniegas, Julien Bastillo, François Vander Meulen, Laurent Delnaud, Stephane Villalonga, Fabien Nony, Jérôme Fortineau
ANALYTICAL SOLUTION FOR MODAL ACOUSTIC PROPAGATION WITH LAMINAR MEAN FLOW IN
2D CARTESIAN GEOMETRY ........................................................................................................... 2656
R. Boucheron

AN ULTRASONIC WAVEGUIDE SENSOR FOR MONITORING ALCOHOL CONCENTRATION IN
WATER-ALCOHOL MIXTURES ........................................................................................................ 2666
Yusuf Can Uz, Oihan Bostan, Göknar Çağrı Akyol, Omursal Onen

A THEORETICAL ANALYSIS OF ACOUSTIC JETS ..................................................................... 2676

UW1 – UNDERWATER ACOUSTICS

APPLICATION OF WAVELET TRANSFORM FOR CLASSIFICATION OF UNDERWATER ACOUSTIC
SIGNS ............................................................................................................................................. 2683
Noha Korany

USING BASE FUNCTION DECOMPOSITION IN ADAPTIVE FILTERING FOR SEISMIC PULSE
RETRIEVING ................................................................................................................................. 2692
Marina Bousfield, João Bistow, Julio Cordioli, Isabelle Aller, Marcus Barão, Antonio Klein, Guillaume Barrault

NUCLEAR AND EXPERIMENTAL PREDICTION METHODS OF CAVITATION NOISE RADIATED BY
UNDERWATER PROPELLERS ........................................................................................................ 2702
Taehyung Kim, Jonghoon Jeon, Sungchan Chu, Sungboon Kim, Wonho Joo

NUMERICAL STUDY OF UNSTEADY SUPERCAVITATION AND FLOW INDUCED NOISE
PROPAGATION ............................................................................................................................... 2712
Boo Cheong Khoo, Jianguo Zheng, Kian Meng Lim, Sai Sudha Ramesh

EXPLOITATION OF FREQUENCY INFORMATION IN CONTINUOUS ACTIVE SONAR .................. 2722
Lisa Zurk, Daniel Rouseff, Scott Schecklman

AA6 – CONCERT HALL ACOUSTICS

ANALYSIS OF REVERBERATION TIMES AND ENERGY DECAY CURVES OF 1/12 OCTAVE BANDS IN
PERFORMANCE SPACES CONSIDERING MUSICAL SCALE ...................................................... 2729
Akiho Matsuo, Toshiki Hanyu, Kazuma Hoshi

ACOUSTICS OF NEW AND RENOVATED CHAMBER MUSIC HALLS IN RUSSIA ....................... 2738
Alexander Fadeev, Nikolay Kaneev, Anatoly Livshits, Andrey Nechaev, Anton Peretokin, Eugeny Pimenov, Vitaly Bodenkov, Natalia
Shirginina

RANK-ORDERING OPERA HOUSES ACCORDING TO THEIR SOUND QUALITY PARAMETERS USING
PROMETHEE II METHOD .............................................................................................................. 2748
Calebe Giaculi Junior, Marco Antônio M. Vecci, Maira Neves Rodrigues, Hani C. Yehia

INFLUENCE OF MUSIC-INDUCED FLOOR VIBRATION ON IMPRESSION OF MUSIC IN CONCERT
HALLS ........................................................................................................................................... 2758
Takahisa Miyata, Kazuma Hoshi, Toshiki Hanyu

AO1 – ACOUSTICAL OCEANOGRAPHY

CONCURRENT ACOUSTICAL AND OPTICAL OBSERVATIONS IN ZOOPLANKTON STUDIES .......... 2768
Lukasz Hoppe, Joanna Szczucka, Emilia Trudnowska

UW1 – UNDERWATER ACOUSTICS

A STUDY ON SPATIAL FADING IN A SHALLOW WATER CHANNEL ........................................... 2777
Gil Greco, Alexandre Guarino, Fabio Contraera, Leandro Calado, William Fonseca, Eric Brandão

A NEW IMPROVEMENT OF RAKE ALGORITHM BASED ON PREDICTION OF MULTIPATH
STRUCTURE OF UNDERWATER ACOUSTIC CHANNEL ......................................................... 2786
Shaolong Zhi, Yongfeng Wang, Hong Zhang, Hong Che

A SURVEY ON RECENT RESEARCHES OF MAC PROTOCOLS IN UASNS .............................. 2796
Feng Xiao, Qipei Liu, Mingyu Song, Jiasheng Tang

SC1 – SPEECH COMMUNICATION

AN ACoustic EXamination of LATERALS IN LOWER SORBian .................................................... 2808
Phil Howson, Alexei Kochetov

CONTEXT SPEECH RATE CAN AFFECT ARABIC GEMINATE PERCEPTION ................................ 2818
Christopher C. Hoffner, Buthainah Al-Thowaini, C. Anton Rytting

THE ACoustics of word-final FAKE GEMINATION in EgYptiAN ARABiC ................................. 2825
Kyle S. Jones

EFFECTS OF ACCENT ON CORtical AUDITORY EVOKED POTENTIALS FOR VOWEL CONTRASTS 2835
Emma Brint, Petra Hidsl, Paul Iverson
EN4 – SMART CITY SOUND MONITORING

ROBUST MICROPHONE ARRAY BEAMFORMING FOR LONG-TERM MONITORING OF INDUSTRIAL AREAS
Bert De Coensel, Dick Botteldooren, Timothy Van Renterghem, Luc Dekoninck, Vincent Spruytte, Alphonso Makovec, Peter Wessels, Frits Van Der Eerden, Tom Basten

REMOVING LOCAL SOUND DISTURBANCES FROM INDUSTRIAL NOISE MONITORING AT LONG DISTANCE
Peter Wessels, Frits Van Der Eerden, Tom Basten, Bert De Coensel, Dick Botteldooren, Timothy Van Renterghem, Luc Dekoninck, Vincent Spruytte, Alphonso Makovec

A PROPOSAL FOR A MOBILE PHONE’S APPLICATION ALERTING AND WARNING ABOUT NOISE POLLUTION
Verónica Arroyo-Pedroza, Fausto E. Rodríguez-Manzo, Roberto A. García-Madrid, Iván Díaz-De-León, Héctor Reyes Aguilera

DATA MINING ON URBAN SOUND SENSOR NETWORKS
Dick Botteldooren, Tátils Vertriest, Michiel Boer, Bert De Coensel, Pierre Aumond, Arnaud Can, Carlos Ribeiro, Catherine Lavandier

EN3 – ROAD TRAFFIC NOISE MODELING AND NOISE BARRIER

A FIELD SURVEY ON SOUND POWER LEVEL OF JAPANESE ROAD VEHICLES
Shinichi Sakamoto, Hyou Je Lee, Miki Yonemura

A STUDY OF THE ACOUSTICS OF THE URBAN SPACE IN MEXICO CITY THROUGH PHYSICAL SCALE MODELS: A FIRST APPROACH
Fausto E. Rodríguez-Manzo, Laura Lanzón-Rivera, Elisa Garay-Vargas, Ernesto Vázquez-Cerón, Jorge Chávez-Gómez, Silvia García-Martínez, Rafael Villalde-Ayalá, Dulce Ponce-Patrón

SONIC CRYSTAL NOISE BARRIER USING LOCALLY RESONANT SCATTERERS
Nicole Kessissoglou, Samaneh M. R. Fard

SS4 – SOUNDSCAPE, QUALITY OF LIFE, AND HEALTH

APPLICATION OF THE SWEDISH SOUNDSCAPE-QUALITY PROTOCOL IN ONE EUROPEAN AND THREE LATIN-AMERICAN CITIES
Pablo Kogan, Bruno Torra, Jorge P. Arenas, Facundo Zeballos, María Hinalaf, Jorge Pérez

LOCI FOR URBAN SOUNDSCAPE PLANNING, DESIGN AND MANAGEMENT
A. L. Brown, C. J. Grimwood

SOUND PLEASANTNESS EVALUATION OF PEDESTRIAN WALKS IN URBAN SOUND ENVIRONMENTS
Fausto E. Rodríguez-Manzo, Laura Lanzón-Rivera, Elisa Garay-Vargas, Ernesto Vázquez-Cerón, Jorge Chávez-Gómez, Silvia García-Martínez, Rafael Villalde-Ayalá, Dulce Ponce-Patrón

ACOUSTIC INTERVENTION AT PRESCHOOLS HAD MARGINAL EFFECT ON NOISE LEVELS BUT IMPACTED ON CHILDREN’S PERCEPTION AND RESPONSE TO SOUND QUALITIES
Kerstin Persson Waye, Irene Van Kamp, Jeong-Lim Kim

PERCEIVED SOUNDSCAPES, HUMAN RESTORATION AND RELATED HEALTH IN GREEN URBAN AREAS
Irene Van Kamp, Elise Van Kempen, Caroline Ameling, Win Swart, Hanneke Kruize

SI1 – SOUND INTENSITY AND INVERSE METHODS IN ACOUSTICS

USING THE IRROTATIONAL PART OF STRUCTURAL INTENSITY TO IDENTIFY SOURCES OF VIBRATIONAL ENERGY
N. B. Rosca, C. Glorieux, J-L. Guyader, H. Muehliner

CHARACTERIZATION OF A POROUS PLATE SATURATED WITH WATER USING BAYESIAN INVERSION
Matti Niskanen, Aroune Duclos, Timo Lähivaara, Olivier Dazel, Jean-Philippe Groby, Tomi Huttunen

INVERSE METHODS OF DETERMINING THE ACOUSTICAL PARAMETERS OF POROUS SOUND ABSORBING METALLIC MATERIALS
Bo Zhang, Jian Zhu

AA6 – CONCERT HALL ACOUSTICS

THE ACOUSTICS OF THE CONCERT HALL AUDITORIO JUAN VICTORIA FROM SAN JUAN, ARGENTINA
Ernesto Accolti, Yéscas Almamo Naranjo, Aclión Alonso Frank, Ernesto Kuchen

ACOUSTIC CHARACTERIZATION OF THE USINA DEL ARTE SYMPHONY HALL
Leandro Rodiño, Alejandro Bidundo, Nahuel Cacavelos

SOUND ENERGY DISTRIBUTION IN ITALIAN OPERA HOUSES
Massimo Garai, Simona De Cesaris, Federica Morandi, Danilo D’Orazio

ACOUSTICS FOR AMPLIFIED MUSIC AND A NEW, VARIABLE ACOUSTICS TECHNOLOGY THAT INCLUDES LOW FREQUENCIES
Niels W. Adelman-Larsen
USING A SPHERICAL MICROPHONE ARRAY FOR STAGE ACOUSTICS: A PRELIMINARY CASE FOR A NEW SPATIAL PARAMETER .......................................................... 3025
Lilyan Panton, Densil Cabrera, Damien Holloway

RECORDINGS OF ITALIAN OPERA ORCHESTRA AND SOLOISTS IN A SILENT ROOM ........................................ 3035
Dario D’Orazio, Simona De Cesaris, Massimo Garai

SOUND IS A WAVE. A NEW CONCEPT OF HUYGENS ACOUSTIC DIFFUSER ................................................. 3045
Higini Arau-Puchades

ANALYSIS OF LIGHTWEIGHT ACOUSTIC REFLECTORS ........................................................................... 3058
Federico Miyara, Vivian Pasch, Ernesto Accolti

VOLUME 5

CA1 – THE TECHNOLOGY OF BINAURAL LISTENING AND UNDERSTANDING

AUDITORY ILLUSION THROUGH HEADPHONES: HISTORY, CHALLENGES AND NEW SOLUTIONS ............... 3063
Karthizne Brandenburg, Stephan Werner, Florian Klein, Christoph Sladeczek

MULTIMODAL FUSION AND INFERENCE USING BINAURAL AUDITION AND VISION .......................... 3073
Benjamin Cohen-Levey, Sylvain Argentieri, Bruno Gas

A PRECEDENCE EFFECT MODEL WITH TOP-DOWN PROCESSING STAGES BASED ON VISUAL CUES .......... 3083
Jonas Braasch, Nikhil Desphande, M. Torben Pastore, Jens Blauert

CONTRIBUTIONS OF BINAURAL PROCESSING TO SEGREGATING AND SELECTING SPEECH IN A COMPLEX SOUND MIXTURE ................................................... 3093
Barbara Shin-Cunningham

BINAURAL TECHNOLOGY AND AUTOMATIC SPEECH RECOGNITION .......................................................... 3101
Richard M. Stern, Chanwoo Kim, Amir R. Moghimi, Anjali Menon

SPATIAL MODULATION: HEARING THE ENVIRONMENT ............................................................................. 3111
Pierre Divenyi

SIMULATING COGNITIVE FEEDBACK IN THE CONTEXT OF BINAURAL SCENE ANALYSIS ....................... 3121
Thomas Waldier, Jens Blauert

ASSESSMENT OF AUDIO QUALITY AND EXPERIENCE USING BINAURAL-HEARING MODELS .................. 3131
Alexander Raake, Hagen Wierstorf

PP3 – PSYCHOLOGICAL AND PHYSIOLOGICAL ACOUSTICS (OTHERS)

MORE ROBUST ESTIMATES FOR DPOAE LEVEL AT AUDIOMETRIC FREQUENCIES ................................. 3141
Dorte Hammershøi, Rodrigo Ordoñez, Anders Tornvig Christensen

INVESTIGATION OF HEARING PERCEPTION AT ULTRASOUND FREQUENCIES BY FUNCTIONAL MAGNETIC RESONANCE IMAGING (fMRI) AND MAGNETOENCEPHALOGRAPHY (MEG) ................ 3150
Robert Köhler, Markus Weichenberger, Martin Bauer, Simone Klün, Tilman Sander-Thömmes, Albrecht Ihlenfeld, Bernd Intermann, Johannes Hensel, Christian Koch

HYBRID METHOD FOR OBTAINING INDIVIDUAL HEAD RELATED TRANSFER FUNCTIONS (HRTF): PINNA MOLDING AND HEAD-TORSO PHOTOGGRAMMETRIC 3D RECONSTRUCTION ..................................................... 3160
Sebastián Fingerhuth, Juan Barraza, Danny Angles

MU2 – STRING INSTRUMENTS

IMPROVED FREQUENCY-DEPENDENT DAMPING FOR TIME DOMAIN MODELLING OF LINEAR STRING VIBRATION ...................................................................................................................... 3169
Charlotte Desvages, Stefan Bilbao, Michele Ducceschi

MU3 – NUMERICAL COMPUTATION IN MUSICAL ACOUSTICS

TRANSMISSION-LINE MATRIX MODELING AND TRANSFORMED AREA FUNCTIONS OF FLARING MUSICAL HORNs .................................................................................................................. 3179
Felipe Orduña-Bustamante, Pablo Luis Bendión, Enedina Martínez-Montejo

PP1 – FREE-FIELD VIRTUAL PSYCHOACoustics AND HEARING IMPAIRMENT

MEASUREMENT OF PINNA FLARE ANGLE AND ITS EFFECT ON INDIVIDUALIZED HEAD-RELATED TRANSFER FUNCTIONS ................................................................................................. 3189
Guangzheng Yu, Yingyang He, Bosun Xie

ARE THE PRECEDENCE EFFECT AND SPATIAL IMPRESSION THE RESULT OF DIFFERENT AUDITORY PROCESSES? .............................................................................................................. 3198
M. Torben Pastore, Elizabeth Teret, Brandon Cudequest, Jonas Braasch
PP2 – PRODUCT SOUND QUALITY AND MULTIMODAL INTERACTION

SOUND QUALITY APPROACH FOR DETECTING ABNORMAL NOISE OF DEHUMIDIFIER ................................................................. 3208
Chan Ho Kim, Gui-Bum Noh, Sang-Ihwan Shin, Seung Yup Yoo

VA1 – VIRTUAL ACOUSTICS

AN ASYNCHRONOUS HRTF MEASUREMENT METHOD BASED ON PHASE ALIGNMENT ................................................................. 3217
Mengtian Zhang, Fengyan Zhu, Tianshu Qu, Xihong Wu

SP4 – SIGNAL PROCESSING IN ACOUSTICS (OTHERS)

INTER-CHANNEL TRANSFER FUNCTION BASED PARAMETRIC STEREO CODING SYSTEM .......................................................... 3225
Qingbo Huang, Tianshu Qu, Liang Li, Xihong Wu
A CONTROL OF MAXIMUM DEMODULATION DISTANCE WITH GAS LAYER FOR PARAMETRIC LOUDSPEAKER ......................... 3234
Kirara Ariyoshi, Shinya Komori, Takahiro Fukumori, Masato Nakayama, Takanobu Nishiura
DISTANT-TALKING SPEECH ACQUISITION USING OPTICAL MEASUREMENT SYSTEM BASED ON SPECKLE INTENSITY .................. 3243
Tomoyuki Mizuno, Yukoh Wakabayashi, Takahiro Fukumori, Masato Nakayama, Takanobu Nishiura
HOW THE BRAIN MAKES SENSE OF COMPLEX AUDITORY SCENES .................................................................................. 3252
Barbara Shinn-Cunningham

NS2 – HEARING PROTECTORS

USING FINITE-ELEMENT MODELING TO PREDICT THE EFFECT OF SOUND INCIDENCE ON THE NOISE REDUCTION BASED ATTENUATION OF EARMUFFS ............................................................................. 3260
Franck Sgard, Marc-André Gaudreau, Hugues Nélisse
MEASUREMENT OF INSERTION LOSS OF EAR-MUFF TYPE PROTECTORS USING THE IMPULSE RESPONSE TECHNIQUE .......................................................................................................................... 3270
Gabriel A. Cravero, Lucas G. Gilberto, Sebastián P. Ferreyra, Marina G. Cortellini, Fernando M. González, Mario R. Serra
UNCERTAINTY OF HEARING PROTECTOR NOISE ATTENUATION BASED ON REAT METHOD ................................................. 3279
Rafael Gerges, Samir Gerges, E. Felipe Vergara

NS3 – LAUNCH VEHICLE ACOUSTICS

REDUCING REAR AXLE GEAR WHINE NOISE INSIDE A CAR BY INFLUENCING THE STRUCTURE-BORNE SOUND TRANSFER PATH USING STRUCTURALLY INTEGRATED PIEZO-ACTUATORS ........................................ 3289
Jan Troge, Welf-Guntram Drassel, Marco Lochmahr, Sebastian Zumach
PROJECTION ALGORITHMS FOR TARGET SPECTRUM MATRIX DEFINITION IN MIMO DIRECT FIELD ACOUSTIC CONTROL .................. 3299
Mariano Alvarez Blanco, Karl Janssens, Fabio Bianciardi

NS4 – MATERIALS FOR NOISE CONTROL

100 YEARS OF PIEZOELECTRIC MATERIALS IN ACOUSTICS: FROM A SONAR TO ACTIVE METASURFACES .................................................. 3309
Pavel Mokrý
ADAPTIVE ACOUSTIC METASURFACES FOR THE ACTIVE SOUND FIELD CONTROL ........................................................................ 3319
Katerina Steiger, Pavel Mokrý, Jan Vlčavskí, Pavel Pouta, Roman Doleček, David Vápenka, Juhab Necášek, Zbyněk Koldovsky
REDESIGNING HELMHOLTZ RESONATORS TO ACHIEVE ATTENUATION AT MULTIPLE FREQUENCIES ........................................ 3329
Nicolas Etaix, Kyle Crawford, Ruth Vossely, Hugh Happer
COMPARISON OF THE ACOUSTIC BEHAVIOUR OF POROUS MATERIALS IN COMPRESSED AND UNCOMPRESSED CONDITIONS .............................................................................................................. 3339
Umberto Berardi, Ramani Ramakrishnan
EFFECT OF THE THREE-DIMENSIONAL MICROSTRUCTURE ON THE SOUND ABSORPTION OF FOAMS: A PARAMETRIC STUDY ........................................................................................................... 3349
Fabien Chédeville, Camille Perrot
CHARACTERIZATION OF MUFFLERS .............................................................................................................................................. 3360
Ahmed Allam, Tamer Elnady
SI1 – SOUND INTENSITY AND INVERSE METHODS IN ACOUSTICS

ON THE RELATIONSHIP BETWEEN SOUND INTENSITY AND WAVE IMPEDANCE........................................3371
Domenico Stanzial, Carlos E. Graffigna

SI2 – ACOUSTICAL MEASUREMENTS AND INSTRUMENTATION

BROAD BAND AIR ULTRASOUND REFERENCE SOUND SOURCE...............................................................3381
Angelo Campanella

SAMSOFT: ACOUSTIC DEVICE AUTOMATIC MEASUREMENT SYSTEM SOFTWARE........................................3391
Sebastián P. Ferreyra, Ana M. Moreno, Juan I. Morales, Fabian C. Tommasini, Leopoldo Buddle, David Novillo, Gabriel A. Cravero, Hugo C. Longoni, Juan F. López, Oscar A. Ramos

IMPLEMENTATION AND ANALYSIS OF INTERNATIONAL STANDARD FOR ELECTROACOUSTIC PERFORMANCE EVALUATION OF HEARING AIDS....................................................3401
Zargos Neves Masson, Eduardo Brezzi, Stephen Paul, Julio A. Cardiali

BI-LATERAL COMPARISON OF PISTONPHONE CALIBRATION BETWEEN INMETRO AND INTI........................3411
Jorge Martín Riganti, Federico Ariel Serrano, Thiago Antônio Bacelar Milhomem, Zemar Martins Defilippo Soares

BI-LATERAL COMPARISON OF LS1P MICROPHONE CALIBRATION BETWEEN INTI AND INMETRO........3417
Federico Ariel Serrano, Jorge Martín Riganti, Thiago Antônio Bacelar Milhomem, Zemar Martins Defilippo Soares

SOUND POWER LEVEL DETERMINATIONS AT LABORATORY AND FIELD ENVIRONMENTS: AN EXPERIMENTAL COMPARISON ..................................................................................3424
Lucía N. Taibo, Waldemar J. Dittmar

STATISTICAL STUDY OF THE SOUND COVERAGE IN FACADE SOUND INSULATION MEASUREMENT USING DIFFERENT TYPES OF LOUDSPEAKERS.......................................................3434
Antonio Pedrero, Luis Iglesias, José Luis Sánchez, César Díaz, María Angeles Navacerrada

A QUANTITATIVE COMPARISON OF DIRECTIONAL WAVESeparATION TECHNIQUES IN TUBULAR WAVEGUIDES – AN EXPERIMENTAL EVALUATION .................................................................3444
Omar Aldaghayem, Kair Groves, Barry Lennos

SIMPLIFIED TWO-LOAD TRANSMISSION TUBE MEASUREMENTS USING AN ACTIVE ABSORBING TERMINATION ..................................................................................................................3453
F. Arturo Machuca-Tzili, Felipe Orduña-Bautumante, Antonio Pérez-López, Jesús Pérez-Ruiz, Andrés E. Pérez-Matsumoto

DEVELOPMENT OF A MEASUREMENT METHOD FOR OBLIQUE-INCIDENCE SOUND ABSORPTION COEFFICIENT USING A THIN CHAMBER ........................................................................3461
Naohisa Inoue, Tetsuya Sakuma

AA6 – CONCERT HALL ACOUSTICS

AN INVESTIGATION INTO THE HELMHOLTZ RESONATORS OF THE QUEEN ELIZABETH HALL, LONDON...............................................................3471
Christina Higgins, Raf Orlowski, Luis Gomez-Agustina

ACOUSTICAL DESIGN OF AWAZA CONVENTION CENTER ........................................................................3481
Zühre Sü Güll, Isin Meriç Narsal, Zeynep Bora, Mehmet Caliskan

A COMPARISON OF CONCERT HALLS' ACOUSTICS BEFORE AND AFTER RENOVATION .......................3491
Anton Peretokin, Nikolay Kamev, Natalia Shergina, Anatoly Livshits

ACOUSTICAL ANALYSIS OF KENNEDY AUDITORIUM, INDIA ....................................................................3501
Shah Faaiz Alam, Yasser Rafi

SS5 – SPATIAL SOUND RECORDINGS IN PRESERVED HABITATS

PRELIMINARY RESEARCH INTO THE ACOUSTIC LANDSCAPE OF SPITSBERGEN ..................................3510
Jerzy Wiciak, Dorota Czepak, Paweł Malecki, Agnieszka Ozga, Janusz Pichowicz

SOUNDS OF DEER MATING SEASON IN BIALOWIEZA NATIONAL PARK ..................................................3518
Janusz Pichowicz, Paweł Malecki, Agnieszka Ozga, Dominik Mleczko

SOUNDSCAPE ANALYSIS BASED ON AMBISONIC RECORDINGS EXECUTED IN A PRIMEVAL FOREST ........3527
Paweł Malecki, Agnieszka Ozga, Janusz Pichowicz

SS2 – SOUNDSCAPE AND HOLISTIC ANALYSIS

A SUMMARY OF THE SPATIAL CONSTRUCTION OF SOUNDSCAPE IN CHINESE GARDENS ....................3535
Senqi Yang, Hui Xie, Huasong Mao, Tingting Xia, Yu Cheng, Heng Li

A SOCIOLOGICAL ANALYSIS OF SOUNDWALK PARTICIPANT DEMOGRAPHICS AND FEEDBACK IN NEW ORLEANS ........................................................................................................3545
David S. Woolworth, Helene Stryckman
CA1 – THE TECHNOLOGY OF BINAURAL LISTENING AND UNDERSTANDING

EXPLOITING ENVELOPE FLUCTUATIONS TO ACHIEVE ROBUST EXTRACTION AND INTELLIGENT INTEGRATION OF BINAURAL CUES ................................................................. 3555
G. Christopher Stecker

PERFORMANCE ANALYSIS OF A COMPACT SPHERICAL MICROPHONE ARRAY USED FOR A SOUND-SPACE SENSING SYSTEM FOR BINAURAL PRESENTATION ...................................... 3565
Shuichi Sakamoto, Yôiti Suzuki

EXAMINING AUDITORY SELECTIVE ATTENTION IN REALISTIC, NATURAL ENVIRONMENTS WITH A NEWLY DESIGNED PARADIGM .......................................................... 3573
Janina Fels, Josefa Oberem, Irving Koch

SACCADE-LIKE HEAD MOVEMENTS IN NON-HUMAN PRIMATES AND IMPLICATIONS OF THE BINAURAL "ACOUSTIC FLOW" ON SPATIAL HEARING ........................................ 3582
Yi Zhou, Swarnima Pandey, Kyle Labban

AO1 – ACOUSTICAL OCEANOGRAPHY

OCEAN ACOUSTIC TOMOGRAPHY USING A THREE-PHASED PROBABILISTIC MODEL-BASED INVERSION SCHEME .............................................................................. 3592
Michael Taroudakis, Costas Smaragdakis

ACOUSTIC SCATTERING BY PARAMETERIZED CONCAVE SURFACES USING AN IMPLEMENTATION OF THE KIRCHHOFF INTEGRAL METHOD ........................................... 3602
Bui A. Bao, Edmund F. Lavia

ACOUSTIC SCATTERING BY PROLATE AND OBLATE LIQUID SPHEROIDS .......................................................................................................................... 3611
Juan D. Gonzalez, Edmund F. Lavia, Silvia Blanc, Igor Prario

A REVIEW OF THEORETICAL MODELS FOR ATTENUATION OF SOUND BY BUBBLE CLOUDS .......................................................................................................... 3621
Maria Paz Raveau

THE STUDY OF ACOUSTIC CLIMATE OF THE SOUTHERN BALTIC ............................................................................................................................... 3631
Grażyna Greńowska, Eugeniusz Kociczka

ADVANCES ON MODELLING, SIMULATION AND SIGNAL PROCESSING OF ULTRASONIC SCATTERING RESPONSES FROM PHYTOPLANKTONIC CULTURES .......................... 3641
Mariano Cinquini, Patricio Bos, Igor Prario, Silvia Blanc

MU1 – MUSIC PERCEPTION

SUBJECTIVE PREFERENCE OF ELECTRIC GUITAR SOUNDS IN RELATION TO PSYCHOACOUSTICAL AND AUTOCORRELATION PARAMETERS .............................................. 3651
Diego Leguizamón, Florent Masson, Shin-Ichi Sato

SUBJECTIVE PREFERENCE OF CLASSICAL GUITAR STROKES “APOYANDO” AND “TIRANDO” RELATED TO ITS HARMONIC COMPONENTS AND AUTOCORRELATION FUNCTION ................................................................................................................ 3661
Joaquín García, Shin-Ichi Sato, Florent Masson

EFFECTS OF THE MODE OF TEMPO CHANGE ON PERCEPTION OF TEMPO CHANGE ........................................................................................................... 3671
Masayo Yanagida, Ichiro Umata, Seiichi Yamamoto

EFFECTS OF LIGHTING ON IMPRESSION OF POPULAR MUSIC .................................................................................................................... 3678
Akira Nishimura, Takaya Matsukawa

THE MECHANICAL INVARIANCE FACTOR IN MUSICAL ACOUSTICS AND PERCEPTION ............................................................................................................... 3687
Akpan J. Ekossen

HIDDEN INFLUENCE OF RESONATORS FOR NON-LINEAR OSCILLATORS .................................................................................................................. 3697
Peter Hoekje

ANTI LIASED SOFT CLIPPING USING A POLYNOMIAL APPROXIMATION OF THE INTEGRATED BANDLIMITED RAMP FUNCTION .................................................................................. 3706
Fabián Esqueda, Stefan Bilbao, Vesa Välimäki

MU5 – GENERAL MUSICAL ACOUSTICS

HIDDEN MELODY IN MUSIC PLAYING MOTION: MUSIC RECORDING USING OPTICAL MOTION TRACKING SYSTEM .................................................................................... 3716
Min-Ho Song

COMMENTS ON TRAVELLING WAVE SOLUTIONS IN NONLINEAR ACOUSTIC TUBES: APPLICATION TO MUSICAL ACOUSTICS .............................................................................. 3723
R. Harrison, S. Bilbao

SOPRANO SINGING, WITH AND WITHOUT RESONANCES ............................................................................................................................... 3733
Laura Wade, Noel Hanna, John Smith, Joe Wolfe

INTERVAL ACCURACY: A PRELIMINARY STUDY OF ISOLATED CHOIR VOICES SINGING MEDIEVAL LITURGICAL CHANT ........................................................................................................ 3741
Juana M. Gutiérrez-Arriola, Antonio Pedrero, Nicolás Sáenz-Lechón, Rubén Fraile, Víctor Oma-Ruiz
PP3 – PSYCHOLOGICAL AND PHYSIOLOGICAL ACOUSTICS (OTHERS)

RESEARCH ON SOUND HYPERSENSITIVITY: PARAMETERS OF DISCOMFORT AND ATTRACTION .................................................. 3750
Helena Rudi Seemann, Gilda Collet Brun

EFFECTS OF BACKGROUND SPEECH ON READING PERFORMANCE IN ADULTS: RESULTS USING A NEW TEST PROCEDURE .... 3760
Helga Sukowski, Erik Romanus

AUDITORY FMRI CORRELATES OF LOUDNESS PERCEPTION FOR MONAURAL AND DIOTIC STIMULATION .................................................. 3769
Stefan Uppenkamp, Oliver Behler

THE HARMONIC HYDRO-MECHANICAL MOVEMENT OF THE COCHLEAR FLUID IS NEITHER A WAVE NOR A VIBRATION ........................................ 3778
Santos Tieso, Lucas Fantini, Francisco Messina, Nahuel Cacavelos, Gilda Farelli, Leonardo Zavala, Maria Tieso, Sebastian Izzi, Federico Adrián Bosio

PERCEPTUAL CONSEQUENCES OF AUDITORY TRAINING IN YOUNG BLIND PERSONS ............................................................. 3786
Eva Skrodzka, Anna Furmann, Edyta Bogusz-Witczak

A RESEARCH ON UNDERSTANDING OF PIANO PLAYERS’ PERCEPTION OF SONIC ENVIRONMENT AND CONTROL OF PERFORMANCE THROUGH BRAIN FUNCTION ANALYSIS AND INTERVIEW .............................................. 3790
Ayako Matsuo, Takeshi Akita, Naoko Same

A PHYSICALLY REALISABLE LUMPED PARAMETER MODEL OF THE ORGAN OF CORTI ........................................................................ 3799
Marcos F. Simón Gálvez, Stephen J. Elliott, Guangjian Ni

INFANT EXPLORATORY MOVEMENTS TO LOCALIZE A SOUND OBJECT IN PERIAND EXTRAPERSONAL SPACE ................................................................................................................. 3809
Mercedes X. Igf, Fabián C. Tommasini, Fernando Bermejo, María Hiraldo, Ramiro Vergara, Aldo Ortiz Terrazas, Claudia Arias

DIMENSIONAL APPROACH OF MUSICAL EMOTION RECOGNITION IN RELATION TO THE RUNNING AUTOCORRELATION PARAMETERS .................................................. 3817
Esteban Zanardi, Shin-Ichi Sato, Florent Masson

LISTEN CAREFULLY: VOLUME ADJUSTMENT BEHAVIOR FOR PORTABLE MUSIC PLAYER USAGE WITH HEADPHONES ............................................. 3825
Nicoline Bjerggaard Als, Charlotte Thodberg Jensen, Rasmus Jensen, Lotte Ishøj Jørgensen, Rodrigo Ordoñez

VOLUME 6

PITCH AND RHYTHMIC PATTERN DISCRIMINATION OF PERCUSSION INSTRUMENTS FOR COCHLEAR IMPLANT USERS ........................................................... 3835
Federico Nahuel Cacavelos, Ricardo L. Marengo, Shin-Ichi Sato, Florent Masson

VA1 – VIRTUAL ACOUSTICS

INDIVIDUAL HEAD-RELATED IMPULSE RESPONSE MEASUREMENT SYSTEM WITH 3D SCANNING OF PINNAE .................................................. 3842
Fabián C. Tommasini, R. Martín Guido, Oscar A. Ramos, G. Agustín Cravero, Sebastián P. Ferreyra, Jorge Pérez

ASSESSING THE CONTRIBUTION OF BINAURAL CUES FOR APPARENT SOURCE WIDTH PERCEPTION VIA A FUNCTIONAL MODEL .......................................................... 3852
Johannes Käsbach, Manuel Hahmann, Tobias May, Torsten Dau

A DYNAMIC BINAURAL SYNTHESIS SYSTEM FOR INVESTIGATION INTO SITUATIONAL AWARENESS FOR TRUCK DRIVERS .................................................. 3862
Fleming Christensen, Anders Kaløgaard Møller, Dorte Hammershøi

INTERACTIVE ACOUSTIC ENVIRONMENTS FOR AUDITORY REHABILITATION AND RESEARCH .................................................. 3871
Steve Ellison, Sumitrajit Dhar, Jonathan Laney, Scott Pfeiffer

INVESTIGATION INTO THE ROLE OF THE NONNEGATIVITY CONSTRAINT IN SOUND FIELD REPRODUCTION PROBLEMS ........................................................... 3879
Annika Neidhardt

PERCEPTION OF THE REVERBERATION CAPTURED IN A REAL ROOM, DEPENDING ON POSITION AND DIRECTION ................................................. 3889
Filippo Maria Fazi, Andreas Franck

VALIDATING AURALIZATIONS BY USING ARTICULATION INDEXES .......................................................... 3899
Roberto Tenenbaum, Filipe Taminato, Viviane Melo, Thayna Santos

PARAMETRIC SPATIAL AUDIO RECORDING AND REPRODUCTION BASED ON PLAYBACK-SETUP-DEFINED BEAMFORMERS ....................................... 3909
Symeon Delikaris-Manias, Ville Pulkkki

AN IMMERSIVE TELECONFERENCING SYSTEM USING SPHERICAL MICROPHONES AND WAVE FIELD SYNTHESIS .............................................................. 3917
Jonas Brausch, Jeff Carter, Samuel Chabot, Jonathan Mathews
PP3 – PSYCHOLOGICAL AND PHYSIOLOGICAL ACOUSTICS (OTHERS)

EVALUATION OF APPLE IOS-BASED AUTOMATED AUDIOMETRY ............................................................. 3927
Yuan Xing, Zhen Fu, Xiaohong Wei, Jing Chen

INVESTIGATING THE COCHLEAR CONTRIBUTION TO AUDITORY PRE-MASKING ................................ 3937
Tsu-Chi Liu, Yi-Wen Liu

IMPAIRMENT OF HUMAN DNA AS A RESULT OF HIGHLY ENERGETIC IMPULSE NOISE: GENE EXPRESSION PROFILES AS PART OF BIOLOGICAL MONITORING .......................................................... 3946
Silvester Siegmund, Bernd Prissack, Klaus Siegmund, Hans Bojar

MODELLING OF THE AUDITORY RIBBON SYNAPSE .............................................................................. 3952
Pablo Etchemendy, Ramiro Vergara, Manuel Eguia

AUDITORY ENVIRONMENTAL CONTEXT AFFECTS VISUAL DISTANCE PERCEPTION ........................... 3962
Ramiro Vergara, Ezequiel Abregu, Pablo Etchemendy, Manuel C. Eguia, Esteban R. Calcagno, Nilda Vechiatti, Federico Iasi

FLEXIBLE SOLVER FOR 1-D COCHLEAR PARTITION SIMULATIONS ...................................................... 3972
Pablo E. Riera, Manuel C. Eguia

SP4 - SIGNAL PROCESSING IN ACOUSTICS (OTHERS)

A STUDY ON NEAR-FIELD SOUND PROPAGATION BASED ON DELAY-FILTERING FOR CARRIER AND SIDEWAVE WAVES USING CURVED-TYPE PARAMETRIC LOUDSPEAKER ........................................... 3982
Ryosuke Uemura, Takahiro Fukumori, Masato Nakayama, Takanobu Nishiura

INVESTIGATION ON SUITABLE ACOUSTIC FEATURES IN DEEP NEURAL NETWORK FOR ENVIRONMENTAL SOUND DISCRIMINATION ............................................................................................................. 3990
Sakiko Mishima, Tomoyuki Mizuno, Takahiro Fukumori, Masato Nakayama, Takanobu Nishiura

AN EVALUATION OF DISCOMFORT REDUCTION BASED ON AUDITORY MASKING FOR RAILWAY BRAKE SOUNDS ................................................................................................................................. 4000
Sayaka Ohayasu, Takahiro Fukumori, Masato Nakayama, Takanobu Nishiura

REVERBERATION DESIGN BASED ON ACOUSTIC PARAMETERS FOR REFLECTIVE AUDIO-SPOT SYSTEM WITH PARAMETRIC AND DYNAMIC LOUDSPEAKER ................................................................. 4010
Ryosuke Uemura, Tomoyuki Wada, Takahiro Fukumori, Masato Nakayama, Takanobu Nishiura

CONTROL SIGNAL DESIGN FOR REDUCING DISCOMFORT OF INFANT CRY BASED ON MITIGATION OF TIME FLUCTUATION ...................................................................................................................... 4020
Aomi Kobayashi, Takahiro Fukumori, Masato Nakayama, Takanobu Nishiura

CROSS-FREQUENCY COUPLING AND PHASE SYNCHRONIZATION IN NONLINEAR ACOUSTICS ........ 4030
Damian Dellavale, Juan Manuel Rosselló

THREE-DIMENSIONAL SPATIAL SOUND-IMAGE DESIGN BASED ON SEPARATING EMISSION WITH CURVED-TYPE PARAMETRIC LOUDSPEAKER ............................................................................................................ 4040
Shinya Komori, Takahiro Fukumori, Masato Nakayama, Takanobu Nishiura

AA7 – ISOTROPY AND DIFFUSENESS IN ROOM ACOUSTICS

EVALUATION OF ISOTROPY OF SOUND FIELD IN A ROOM BASED ON THE DECAYCANCELED SOUND INTENSITY ................................................................................................................................. 4051
Toshiki Hanyu, Kazumasa Hoshi

A WAVENUMBER APPROACH TO CHARACTERIZING THE DIFFUSE FIELD CONDITIONS IN REVERBERATION ROOMS ...................................................................................................................... 4061
Mélanie Nolan, Elena Fernandez-Grande, Jonas Brunskog, Antoine Richard, Cheol-Ho Jeong

KURTOSIS AS A DIFFUSENESS MEASURE .................................................................................................. 4071
Cheol-Ho Jeong

INVESTIGATION ACROSS DIFFERENT CONDITIONS OF ROOM DIFFUSIVITY MEASURED FROM A VARIABLE ACOUSTICS FACILITY ........................................................................................................... 4081
Jay Blieflack, Lily M. Wang

A RIGOROUS DEFINITION OF THE TERM “DIFFUSE SOUND FIELD” AND A DISCUSSION OF DIFFERENT REVERBERATION FORMULAE ........................................................................................................... 4089
Uwe M. Stephenson

RELATION BETWEEN ACOUSTIC MEASUREMENTS AND THE PERCEIVED DIFFUSENESS OF A SYNTHESISED SOUND FIELD ...................................................................................................................... 4099
Michael P. Cousins, Stefan Bleek, Frank Melchior, Filippo Maria Fazi

NON DIFFUSE SOUND FIELD IN THE REVERBERATION ROOM .................................................................. 4109
Marjim Vercammen, Margriet Lautenbach

DECAY CURVES IN COUPLED, REVERBERANT SPACES ............................................................................. 4119
Jamilia Balint, Mélanie Nolan, Elena Fernandez-Grande, Jonas Brunskog, Cheol-Ho Jeong, Ning Xiang, Gerhard Gruber

EFFECTIVENESS OF REVERBERATION ROOM DESIGN: ROOM SIZE AND SHAPE AND EFFECT ON MEASUREMENT ACCURACY ............................................................................................................ 4129
Md Mehadi Hasan, Murray Hodgson

CORRECTION ALGORITHM FOR SOUND SCATTERING COEFFICIENT MEASUREMENTS .......................... 4139
Monika Rychárková, Nikolaas Bernardus Rozén, Daniel Urbán, Christ Glorieux
SPATIAL VARIATIONS OF THE MEAN FREE PATH IN LONG ROOMS: INTEGRATION WITHIN THE ROOM-ACOUSTIC DIFFUSION MODEL ................................................................. 4146
Cédric Foy, Vincent Valeau, Judicael Picaut, Christian Prax, Anas Sakout

SS3 – SOUNDSCAPE, PSYCHOACOUSTICS AND URBAN ENVIRONMENT

SOUNDSCAPE STANDARD UNDER DEVELOPMENT .......................................................... 4156
Brigite Schulte-Forkamp

DO WE NEED PSYCHOACOUSTICS WITHIN SOUNDSCAPE? ........................................ 4161
Klaus Genuit, André Fiebig

A COMPARISON OF SOUNDSCAPE EVALUATION METHODS IN A LARGE URBAN PARK IN MONTREAL .......................................................... 4171
Daniel Steele, Edda Bld, Cynthia Turlas, Irene Luque Martin, Jorge Izquierdo Cubero, Catherine Guattarino

IDENTIFICATION AND SEPARATION OF NOISES WITH SPECTRO-TEMPORAL PATTERNS .................................................. 4183
Roland Sottek

A NOVEL AUDITORY SALIENCY PREDICTION MODEL BASED ON SPECTROTEMPORAL MODULATIONS .......................................................... 4193
Karlo Filipan, Annelies Bockstael, Bert De Coenvel, Marc Schönwiesner, Dick Botteldooren

ACCURACY OF COMPUTER SIMULATION SOFTWARE USING HYBRID MODELS FOR MICROSCALE URBAN ENVIRONMENTS .................................................. 4200
Rafaela Estevão da Rocha, Alexandre Virgínelí Matierno, Steinaris Rolla Bertoldi

ASSESSMENT OF COMBINED ENVIRONMENTAL SOUNDS .............................................. 4210
Sabinna Skoda, André Fiebig, Brigite Schulte-Forkamp, Jörg Becker-Schweitzer

SOUNDSCAPE IDENTIFICATION IN TERMS OF URBAN MORPHOLOGY ...................... 4218
Lei Yu, Jian Kang, Hong Liang, Yu Yang

NOISE IN A GERMAN OPERATION THEATRE: STRAIN FOR THE MEDICAL STAFF .......................................................... 4228
Silvester Siegmann, Gert Noshohm, Renate Schmook, Klaus Schöne, Helger Sauer, Peter Angerer

A COMPARATIVE STUDY ON THE SOUNDSCAPE OF PUBLIC SPACES IN COASTAL AND INLAND CITIES IN NORTHERN CHINA .......................................................... 4238

FOUNTAINS AS SOUND ELEMENTS IN THE DESIGN OF URBAN PUBLIC WALKS SOUNDSCAPES .......................................................... 4248
Fernando J. Elizondo Garza, Adrian Garcia Mederex, Cesar Guerra Torres, Diego F. Ledezma-Ramirez

NS4 – MATERIALS FOR NOISE CONTROL

EVALUATION OF THE ACOUSTIC PERFORMANCES OF METAL POWDER BASED MATERIALS .......................................................... 4258
Federico Rosso, Beatrice Castellani, Massimo Palombo, Elena Morini, Andrea Nicolini

ACOUSTIC DESIGN OF THE AIR TRANSPARENT SOUNDPROOFING WALL .................. 4266
Seong-Hyun Lee, Junghwan Kook, Sang-Hoon Kim

NS1 – AIRCRAFT NOISE - AEROACOUSTICS

CIVIL AIRCRAFT NOISE REDUCTION: SUMMARY OF RECENT RESEARCH AND OVERVIEW OF FORTHCOMING EFFORTS TO PROMOTE NEW RESEARCH WITHIN EUROPEAN CONTEXT .......................................................... 4272
Denis Gély, Laurent Levy-Kiejan

FLOW-INDUCED NOISE REGIMES OF A WALL-MOUNTED FINITE AIRFOIL ...................... 4280
Danielle J. Moreau, Con J. Doolan

LABORATORY STUDY ON JET INSTALLATION NOISE EFFECTS BY DESIGNING AND USING A 3D MICROPHONE ARRAY .......................................................... 4290
Michael Bauer, Daniel Redmann

A SYSTEMATIC REVIEW OF SEMI-EMPIRICAL ACOUSTIC LINER MODELS UNDER GRAZING FLOW AND HIGH SPL .......................................................... 4292
André Spillere, Danillo Reis, Julio A. Cordioli

THE INFLUENCE OF AN ADAPTIVE NACELLE INLET LIP ON FAN NOISE PROPAGATION .......................................................... 4302
Frane Majic, Gunilla Efremsson, Ciaran J. O’Reilly

EXPERIMENTAL STUDY OF CASING TREATMENT IMPACT ON DUCTED COUNTERROTATING FAN NOISE .......................................................... 4312
Iurii Khlebnikov, Victor Mileshkin

AERO-ACOUSTIC FAN BROADBAND NOISE: A NEW PARAMETERIZATION PROPOSAL .......................................................... 4322
Rafael Cuenca, Paulo Greco, Luciano Caldas

PARSIMONIOUS APPROACHES FOR THE LABORATORY SYNTHESIS OF WALL-PRESSURE EXCITATIONS .................................................. 4332
Cédric Maury, Teresa Bravo
## EL1 – ELECTROACOUSTICS AND AUDIO ENGINEERING

<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency Distribution of Temporal Sound Pressure Capacity Requirement in Two-Way and Three-Way Active Monitors</td>
<td>4342</td>
</tr>
<tr>
<td>Loudspeaker Protection System for Mobile Devices</td>
<td>4352</td>
</tr>
<tr>
<td>Measurement of the Contribution to the Acoustical Impedance of a Loudspeaker Due the Internal Cavities in Magnetic Circuit Using an Impedance Tube</td>
<td>4362</td>
</tr>
<tr>
<td>Two Modified IEC 60318-4 Ear Simulators for Extended Dynamic Range</td>
<td>4373</td>
</tr>
<tr>
<td>Effective Radiation Area (SD) for an Axisymmetric Piston Radiating in an Infinite Baffle</td>
<td>4383</td>
</tr>
<tr>
<td>Implementation of a Low Cost Remote Failure Monitoring System for Speaker Lines in a Shopping Mall</td>
<td>4393</td>
</tr>
<tr>
<td>Development of Multichannel Single-Unit Microphone Using Shotgun Microphone Array</td>
<td>4400</td>
</tr>
<tr>
<td>Modeling of the Electroacoustic Coupling of Electrostatic Microphones Including the Preamplifier Circuit</td>
<td>4409</td>
</tr>
<tr>
<td>An Investigation about Diffuse-Field Calibration of Measurement Microphones by the Reciprocity Technique</td>
<td>4419</td>
</tr>
<tr>
<td>Analysis on the Interaural Level Difference in Near-FieldCompensated Higher Order Ambisonics Reproduction</td>
<td>4428</td>
</tr>
</tbody>
</table>

## MU3 – NUMERICAL COMPUTATION IN MUSICAL ACOUSTICS

<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chaotic Behavior of the Piccolo</td>
<td>4436</td>
</tr>
<tr>
<td>Characterisation of Brass Instruments with Mutethrough Experimental Means and Finite-Element Simulations</td>
<td>4444</td>
</tr>
<tr>
<td>A Numerical Model for Axial Strain Vibrations of Brass Wind Instrument Bells Offering Superior Performance Compared to Finite Element Methods</td>
<td>4451</td>
</tr>
<tr>
<td>Modelling Collisions of Nonlinear Strings Against Rigid Barriers: Conservative Finite Difference Schemes with Application to Sound Synthesis</td>
<td>4461</td>
</tr>
</tbody>
</table>

## MU4 – WIND INSTRUMENTS

<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reed Chamber Resonances and Attack Transients in Free Reed Instruments</td>
<td>4472</td>
</tr>
<tr>
<td>Aeroacoustics of Free Reeds</td>
<td>4478</td>
</tr>
<tr>
<td>Validation of Brass Wind Instrument Radiation Models in Relation to Their Physical Accuracy Using an Optical Schlieren Imaging Setup</td>
<td>4488</td>
</tr>
<tr>
<td>Influence of Strain-Gauge Sensors on the Vibrational Behaviour of Single Reeds</td>
<td>4498</td>
</tr>
<tr>
<td>Effect of Input Signal Shape on the Nonlinear Steepening of Transient Acoustic Waves in a Cylindrical Tube</td>
<td>4506</td>
</tr>
</tbody>
</table>

## NS5 – SUSTAINABLE MATERIALS FOR SOUND ABSORPTION AND INSULATION

<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>A Micro-Perforated Panel Absorber with Periodic Sub-Cavities at Different Depths by Quadratic Residue Sequences</td>
<td>4513</td>
</tr>
<tr>
<td>Micro-Perforated Materials for the Reduction of Flow-Induced Noise</td>
<td>4524</td>
</tr>
<tr>
<td>Title</td>
<td>Page</td>
</tr>
<tr>
<td>----------------------------------------------------------------------</td>
<td>------</td>
</tr>
<tr>
<td>ACOUSTIC ABSORBERS BASED ON RECYCLED MATERIALS</td>
<td>4534</td>
</tr>
<tr>
<td>Federico Miyara, Vivian Patch, Ernesto Acccoli, Pablo Miechi</td>
<td></td>
</tr>
<tr>
<td>SOUND INSULATION RESEARCH OF FRAMELESS THREE-LAYERS CONCRETE PARTITIONS</td>
<td>4544</td>
</tr>
<tr>
<td>Anatoly Livshits</td>
<td></td>
</tr>
<tr>
<td>PP1 – FREE-FIELD VIRTUAL PSYCHOACOUSTICS AND HEARING IMPAIRMENT</td>
<td></td>
</tr>
<tr>
<td>HEARING IMPAIRMENT, HEARING AIDS, AND CUES FOR SELF MOTION</td>
<td>4554</td>
</tr>
<tr>
<td>W. Owen Brimijoin, Andrew McLaren, Graham Naylor</td>
<td></td>
</tr>
<tr>
<td>FACTORS INFLUENCING THE ECOLOGICAL VALIDITY OF LABORATORY-BASED SPEECH TESTS</td>
<td>4564</td>
</tr>
<tr>
<td>J. M. Buchholz, A. Westermann, A. Weisser, T. Beechey, C. Oreinos, V. Best, G. Keidser</td>
<td></td>
</tr>
<tr>
<td>SPEECH PERCEPTION BY CHILDREN IN A REAL-TIME VIRTUAL ACOUSTIC ENVIRONMENT WITH SIMULATED HEARING AIDS AND ROOM ACOUSTICS</td>
<td>4567</td>
</tr>
<tr>
<td>Florian Paspich, Zhao Ellen Peng, Lukas Aspöck, Janina Fels</td>
<td></td>
</tr>
<tr>
<td>AUDITORY LOCALIZATION OF REAL AND VIRTUAL SOUNDS BY HEARING IMPAIRED LISTENERS</td>
<td>4577</td>
</tr>
<tr>
<td>Douglas Brungart, Danielle Zion, Julie Cohen, Griffin Romigh</td>
<td></td>
</tr>
<tr>
<td>STUDY ON EVALUATION OF SPEECH INTELLIGIBILITY FOCUSING ON SPEECH PRIVACY</td>
<td>4585</td>
</tr>
<tr>
<td>Hyojin Lee, Souhei Tsujimura, Shinichi Sakamoto</td>
<td></td>
</tr>
<tr>
<td>AA3 – ARCHITECTURAL ACOUSTICS FOR NON-PERFORMANCE SPACES</td>
<td></td>
</tr>
<tr>
<td>TRANSPARENT MICRO-PERFORATED SOUND ABSORBERS REVISITED</td>
<td>4592</td>
</tr>
<tr>
<td>Christian Nocke, Catja Hilge, Jean-Marc Scherrer</td>
<td></td>
</tr>
<tr>
<td>VOLUME 7</td>
<td></td>
</tr>
<tr>
<td>EFFECTS OF ABSORPTION AND SCATTERING COEFFICIENT UNCERTAINTIES ON LEVELS AND REVERBERATION TIMES COMPUTED WITH SOUNDPARTICLE SIMULATION: A CASE STUDY</td>
<td>4602</td>
</tr>
<tr>
<td>Stefan Weigand, Uwe Stephenson</td>
<td></td>
</tr>
<tr>
<td>EFFICIENT PREDICTION OF LOW-FREQUENCY SOUND FIELDS IN RECTANGULAR ROOMS WITH LOCALIZED BOUNDARY ABSORPTION</td>
<td>4612</td>
</tr>
<tr>
<td>Edwin Reynders, Hannes Demolder, Arne Dijckmans</td>
<td></td>
</tr>
<tr>
<td>ROOM ACOUSTICAL OPTIMIZATION: AVERAGE VALUES OF ROOM ACOUSTICAL PARAMETERS AS A FUNCTION OF ROOM SHAPE, ABSORPTION AND SCATTERING</td>
<td>4620</td>
</tr>
<tr>
<td>Uwe M. Stephenson</td>
<td></td>
</tr>
<tr>
<td>EFFICIENCY FACTORS CHARACTERIZING SOUND REFLECTION PROPERTIES OF A ROOM CEILING</td>
<td>4630</td>
</tr>
<tr>
<td>Nikolay Kanev</td>
<td></td>
</tr>
<tr>
<td>PHYSICALLY-BASED NUMERICAL SOUND PROPAGATION MODELING IN ROOMS WITH NON-FLAT WALLS</td>
<td>4640</td>
</tr>
<tr>
<td>Kevin Rabitse, Joël Ducourneau, Adil Faiz, Nicolas Trompette</td>
<td></td>
</tr>
<tr>
<td>STUDY CASE OF A PUBLIC HOSPITAL</td>
<td>4650</td>
</tr>
<tr>
<td>Marilisa Giuliano, Sergio Lopez, Rita Comando, Esquiel Pombo, Maris Martinez</td>
<td></td>
</tr>
<tr>
<td>MULTIPLEX CINEMA HALLS: DESIGN AND CONSTRUCTION OF SIX HALLS IN THE CITY OF MAR DEL PLATA</td>
<td>4659</td>
</tr>
<tr>
<td>Roberto Daniel Ottobre, Marcelo Ottobre, Agustín Arias, Jerónimo Mariani, María Pérez Maraviglia, Oscar Cañadas</td>
<td></td>
</tr>
<tr>
<td>ACOUSTICS OF THE BORDER CULTURAL CENTRE IN THE NEIGHBOURHOOD OF PALERMO, CITY OF BUENOS AIRES, ARGENTINA</td>
<td>4669</td>
</tr>
<tr>
<td>Roberto Daniel Ottobre, Marcelo Ottobre, Agustín Arias, Guadalupe Cuello</td>
<td></td>
</tr>
<tr>
<td>AA7 – ISOTROPY AND DIFFUSENESS IN ROOM ACOUSTICS</td>
<td></td>
</tr>
<tr>
<td>EVALUATION OF TEMPORAL DIFFUSION OF ROOM IMPULSE RESPONSES BY USING THE AUTOCORRELATION ANALYSIS</td>
<td>4679</td>
</tr>
<tr>
<td>Shin-Ichi Sato</td>
<td></td>
</tr>
<tr>
<td>EXPERIMENTAL INVESTIGATION ON VARIED DEGREES OF SOUND FIELD DIFFUSENESS IN ENCLOSED SPACES</td>
<td>4689</td>
</tr>
<tr>
<td>A. Bidondo, N. Xiang, J. Herder</td>
<td></td>
</tr>
<tr>
<td>GAUSSIAN WHITE NOISE IMPULSE RESPONSES AS ABSOLUTE DIFFUSION REFERENCE VALUES</td>
<td>4699</td>
</tr>
<tr>
<td>Alejandro Bidondo, S. Vázquez, J. Vázquez, G. Heinze, M. Arouzet</td>
<td></td>
</tr>
<tr>
<td>REPRODUCTION OF THE MODAL RESPONSE OF ENCLOSURES BY MEANS OF INTERACTIVE AURALIZATION</td>
<td>4709</td>
</tr>
<tr>
<td>Diego M. Murillo, Filippo M. Fazi, Jeremy Astley</td>
<td></td>
</tr>
</tbody>
</table>
SS3 – SOUNDSCAPE, PSYCHOACOUSTICS AND URBAN ENVIRONMENT

INFLUENCE OF EXPERIMENTAL CONDITIONS ON SOUND PLEASANTNESS EVALUATIONS ..............................................................4723
  Pierre Aumond, Florent Masson, Leandro Beron, Arnaud Can, Berti De Coensel, Dick Boteldooren, Carlos Ribeiro, Catherine Lavandier

STUDYING URBAN AUDITORY EXPERIENCES OF DUTCH NATIVES IN RELATION TO THEIR ACTIVITIES IN OUTDOOR PUBLIC SPACES: A PROPOSED METHODOLOGY ..................................................................................................................4733
  Edda Bild, Matt Coler, Karin Pfeffer, Luca Bertolini

NS6 – NOISE: SOURCES AND CONTROL

A FIELD INVESTIGATION ON THE VIBROACOUSTIC IMPACT OF AN UNDERGROUND METRO LINE ...........................................4744
  Marco Carlo Masoero, Fabrizio Bromuzzi, Carlo Alessandro Bertetti, Marco Falossi

SHIELDING THE SOURCE ..................................................................................................................................................................4754
  Ricardo Quintana, Diego Patiño

ACOUSTICS OF TEARING VELCRO ....................................................................................................................................................4765
  Justinas Cesonis, Anurag Agarwal, Caio B. Palma, André Y. G. Cavaliere

E1.1 – ELECTROACOUSTICS AND AUDIO ENGINEERING

ESTIMATION OF DIRECTIONAL LOCALIZATION OF SOUND FROM REPRODUCED WAVE SURFACE ............................................4775
  Akio Ando, Kentaro Yoneda, Kouki Goto, Masafumi Fujii

PHOTOLIPTOPHONE: A VIRTUALLY UNKNOWN ANCESTOR OF OPTICAL AUDIO SYSTEMS TO REPRODUCE PRINTED SOUND ON PLAIN PAPER ........................................................................................................4785
  Iainica Calalis, Jorge Petrosino

PLATE REVERBERATION: TOWARDS THE DEVELOPMENT OF A REAL-TIME PHYSICAL MODEL FOR THE WORKING MUSICIAN ..............................................................4792
  Michele Ducceschi, Craig J. Webb

EFFECTS OF OPERATION AT AND OFF-ELECTRICAL RESONANCE ON THE PERFORMANCE INDICES OF LINEAR ALTERNATORS UNDER THERMOACOUSTIC POWER-CONVERSION CONDITIONS .......................................................................................4802
  A. Y. Abdelwahed, A. H. Ibrahim, Ehab Abdel-Rahman

MU2 – STRING INSTRUMENTS

ABOUT THE ACOUSTIC AND OTHER NON-DESTRUCTIVE METHODS FOR THE CHARACTERIZATION OF OLD HISTORICAL STRING MUSICAL INSTRUMENTS – AN OVERVIEW ....................................................................................................4812
  Voichita Bucur

COMPARISON BETWEEN THREE DIFFERENT VIENNESE PIANOS OF THE NINETEENTH CENTURY ...............................................4824
  Antoine Chaigne, Matthieu Hennet, Juliette Chabassier, Marc Durafé

CONTRIBUTION OF THE VIBRATION OF VARIOUS PIANO COMPONENTS IN THE RESULTING PIANO SOUND ..................................................................................................................................................4834
  Jin Jack Tan, Antoine Chaigne, Antonio Acri

PP1 – FREE-FIELD VIRTUAL PSYCHOACOUSTICS AND HEARING IMPAIRMENT

IMPACT OF SPATIAL AUDIOVISUAL COHERENCE ON SOURCE UNMASKING ..................................................................................4844
  Julian Palacino, Mathieu Paquier, Vincent Kooy, Frédéric Changenet, Etienne Corseuil

DOES LEARNING A ROOM’S REFLECTIONS AID SPATIAL HEARING? ..............................................................................................4852
  Bernhard U. Seeber, Matthias Müller, Fritz Menzer

PRIOR EXPOSURE TO ROOM ACOUSTICS AND ITS EFFECT ON LOCALIZATION ..............................................................................4860
  Samuel W. Clapp, Bernhard U. Seeber

ANALYSIS OF HUMAN RESPONSE TO COMBINED NOISE AND VIBRATION IN AIRPLANES .......................................................4867
  Julio Alexandre De Matheucci E Silva Teixeira, Roberto Jordan

HEARING PROTECTORS: STATE OF THE ART AND EMERGING TECHNOLOGIES OF COMFORT AND UNCERTAINTY IN MEASUREMENTS ........................................................................................................................................4877
  Samir Gerges

FIA-NS - NOISE: SOURCES AND CONTROL

ANALYTICAL AND NUMERICAL ESTIMATION OF ACOUSTIC TRANSFER FUNCTION IN DUCTS CONSIDERING GENERAL BOUNDARY CONDITIONS ........................................................................................................4889
  Saimen Hauak Cardoso, Maria Alzira De Araújo Nunes, Renato Vilela Lopes

EXPERIMENTAL STUDY OF THE RELATIONSHIP BETWEEN RADIATED SOUND AND MACHINING CONDITIONS OF A WOOD SHAPER MACHINE BASED ON ACOUSTIC CAMERA MEASUREMENTS .........................................................................4899
  José Luis Barros, Alfredo Aguilera
ACOUSTIC PROPERTIES OF RECYCLED TEXTILE MATERIALS .................................................................4907
Juan Manuel Loria, Leonardo Maggiolo, Joaquín Maneslla, Alejandro Bidondo, Nicolás Urquiza, Gonzalo Botto, Gabriel Santiago Rosanigo

SOUND ABSORPTION COEFFICIENT MEASUREMENT BASED ON THE TRANSFER FUNCTION
METHOD SPECIFIED BY THE STANDARD ISO 10534-2 USING LOWCOST ALTERNATIVES ..................4917
Thaynan Oliveira, Paulo H. Mareze, Matheus Pereira, Sergio Aguirre, William D’A. Fonseca, Eric Brandão, Rogério Pirk

FIA-PP – PSYCHOLOGICAL AND PHYSIOLOGICAL ACOUSTICS

NOISE ON AN AIRCRAFT CABIN: EFFECT OF POWER DENSITY SPECTRUM ON THE NOISINESS ........4927
Hugo Scagnetti, Shin-Ichi Sato, Florent Masson

FIA-EN – ENVIRONMENTAL ACOUSTICS & COMMUNITY NOISE

MEASUREMENTS, MODELING AND ANALYSIS OF INDUSTRIAL NOISE IN THE CITY OF CORONEL
(CHILE) – ADVANTAGES OF USING ACOUSTIC CAMERA FOR SOURCE LOCATION .................................4936
José Luis Barros, Juan Pablo Álvarez

ANOYANCE OF INDUSTRIAL NOISE WITH TONAL COMPONENT AT DIFFERENT FREQUENCIES ........4945
Matias Pace, Florent Masson, Shin-Ichi Sato

CONCENTRATION MAPPING OF NOISE POLLUTION COMPLAINTS IN NATAL/RN (BRAZIL) BETWEEN 2012 AND 2015 ...............................................................4955
Luciana Alves, Tamáris Brasilheiro, Renata Araujo, Débora Florôncio, Virgínia Araújo, Biana Araújo

CONCENTRATION MAPPING OF NOISE POLLUTION COMPLAINTS IN JOÃO PESSOA-PB (BRAZIL) BETWEEN 2012 AND 2015 .................................................................4965
Tamáris Brasilheiro, Luciana Alves, Renata Araujo, Débora Florôncio, Virgínia Araújo, Biana Araújo

THE TRANSPORT STREAM INTERFERING IN NOISE POLLUTION IN COMMERCIAL AND RESIDENTIAL DISTRICTS IN THE CITY OF MACEÓ-AL, BRAZIL ................................................4975
Stella Oliveira, Ana Caroline Araujo, Adília Melo, Adna Oliveira, Willian Oliveira, Maria Lucia Gondim Da Rosa Oiticica

ANALYSIS OF THE INFLUENCE OF PUBLIC TRANSPORT IN NOISE LEVELS IN THE CITY OF TALCA,
CHILE ..................................................................................................................................................4985
Gonzalo-Bernabé Pacheco-Cavili, Guillerme Rey-Gonzalo

CHARACTERIZATION OF NOISE POLLUTION IN DOWNTOWN OF CÓRDOBA CITY .........................4995
Jorge Perez Villalobo, Horacio Contrera, Raul Rodolfo, Elias Cáceres, Maria Hinalaf, Mario Serra

MONTE CARLO SIMULATIONS TO ESTIMATE THE IMPACT OF VEHICLE TRAFFIC NOISE
DYNAMICS IN THE VICINITY OF A BUS STOP BASED ON REAL SOUND SIGNALS ..............................5006
Izaio C. M. Guedes, Stela Maria Rolla Bertoti, Jutarga Montalvão

ACOUSTIC MAPPING IN THE INSTITUTE OF BIOLOGICAL SCIENCE FROM UFMG: IDENTIFICATION
OF THE NOISE SOURCES AND SOUND PRESSURE LEVELS IN OUTDOORS AREAS ............................5016
Y. S. M. Krisdany-Cavalcante, A. M. Macedo, F. Pimentel-Souza, F. G. S. Resende, V. M. Rezende, K. I. H. M. Poague, P. V. P. Ribeiro

TIME REPRESENTATIVE WINDOW FOR THE MEASUREMENT OF URBAN NOISE IN LA PLATA CITY 5026
Ariel Veliz, Federico Iasti, Naida Vecchiatti, Alejandro Armas, Carlos Posse, Daniel Tomeo

ROAD TRAFFIC NOISE IMPACT ON FACES OF BUILDINGS ..................................................................5037
Renato De Brito Rocha, Maria Lygia Niemeyer

GUIDELINES FOR NOISE CLASSIFICATION METHODS OF RESIDENTIAL BUILDINGS, ACCORDING
TO BRAZILIAN STANDARD ABNT NBR 15575-4 ..................................................................................5047
Iara Cunha, Elaine Lemos, Marcus Holz, Davi Akkerman

NOCTURNAL SOUNDSCAPE OF BRASILIA’S PILOT PLAN: STUDY CASE IN NORTH SUPERBLOCK 410
(SQN 410) ...........................................................................................................................................5055
Ludmila Correia, Ricardo Trevisan, Sergio Garavelli, Armando Maroja, Bruna Croce, Thierry Pires

ACOUSTICAL TREATMENT SOLUTION FOR A LARGE WATER COOLING AND CHILLER SYSTEM AT
THE ROOFTOP OF A COMMERCIAL BUILDING ..................................................................................5065
Maria Luiza Belderrain, Rafael Vaidotas, Mariane Benotti Giunta, Wanderley Montemurro

VARIATION OF SOUND LEVELS IN THE CENTRAL AREA OF THE CITY OF BUENOS AIRES AFTER
THE IMPLEMENTATION OF PRIORITY PEDESTRIAN PLAN ................................................................5075
Vicente Sosa, Germán Said

FIA-AA – ARCHITECTURAL ACOUSTICS – ROOM AND BUILDING ACOUSTICS

NOISE MAP AS SUPPORT INSTRUMENT TO ACHIEVE ACOUSTIC PERFORMANCE OF RESIDENCES
ENVELOPMENT ACCORDING TO NBR 15.757-2013 ..............................................................................5085
Fabiana Curado Coelho, Cândida Maciel, Thierry Pires, Ludmila De Araujo Correia, Luís Fernando Hermida
Cadena

ACOUSTIC QUALITY IN SHOPPING MALLS FOR ENVIRONMENTAL CERTIFICATION. CASE
STUDIES: SHOPPING MALLS RIORMAR RECIFE (PE) AND FORTALEZA (CE) ..................................5095
Felipe B. Paim, Danilo F. M. De Souza, Débora M. Barreto, Marcelo S. Ferreira
<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>CASE STUDY OF ACOUSTIC PERFORMANCE OF CORRECTIONS IN JUNCTIONS OF INTERNAL WALL AND CURTAIN WALL FAÇADE</td>
<td>5105</td>
</tr>
<tr>
<td>INTERVENENTS IN FLOATING FLOORS EXECUTION PROCESS AND ITS REFLECTS ON ACOUSTIC PERFORMANCE</td>
<td>5114</td>
</tr>
<tr>
<td>INFLUENCE OF THE COMPRESSION CONDITIONS IN THE ACOUSTIC PERFORMANCE OF RESILIENT LAYERS OF FLOORS</td>
<td>5124</td>
</tr>
<tr>
<td>STUDY OF SOUND ABSORPTION OF WOOLS COMPOSED BY PET WASTE PRODUCTS</td>
<td>5133</td>
</tr>
<tr>
<td>FIA-SS - SOUNDSCAPE</td>
<td></td>
</tr>
<tr>
<td>LEARNING THE SOUNDSCAPE IN URBAN AND ARCHITECTURAL ITINERARY: LISTENING BARCELONA BLINDFOLDED</td>
<td></td>
</tr>
<tr>
<td>SOME CONSIDERATION ON THE DESIGN OF LISTENING-TESTS FOR SOUNDSCAPE ASSESSMENT</td>
<td></td>
</tr>
<tr>
<td>FIA-SP – SIGNAL PROCESSING IN ACOUSTICS</td>
<td></td>
</tr>
<tr>
<td>SIMPLIFIED FILTER BANK TO EMULATE THE HEAD DIFFRACTION DEPENDING ON THE AZIMUTH ANGLE OF THE SOURCE</td>
<td>5162</td>
</tr>
<tr>
<td>IMPROVING THE ESTIMATED ACOUSTIC ABSORPTION CURVES IN IMPEDANCE TUBES BY USING WAVELET-BASED DENOISING METHODS</td>
<td>5172</td>
</tr>
<tr>
<td>FIA-MU – MUSICAL ACOUSTICS</td>
<td></td>
</tr>
<tr>
<td>ULTRASONIC COMPONENTS OF MUSICAL INSTRUMENTS</td>
<td>5182</td>
</tr>
<tr>
<td>THE PERCUSSION AS ACOUSTIC ELEMENT IN ORCHESTRAS AND MUSICAL GROUPS FROM THE TWENTIETH CENTURY</td>
<td>5192</td>
</tr>
<tr>
<td>MUSICAL IMAGERY: INFLUENCE OF MUSICAL TRAINING IN AUDITORY SOUND RECOGNITION BY MELODIC AND RHYTHMIC MODIFIED STIMULI OF LONG LATENCY AEPS</td>
<td>5203</td>
</tr>
<tr>
<td>FIA-PP – NOISE: SOURCES AND CONTROL</td>
<td></td>
</tr>
<tr>
<td>SOUND ANALYSIS OF COPACABANA NEIGHBORHOOD TRAFFIC ROUTES, RIO DE JANEIRO</td>
<td>5213</td>
</tr>
<tr>
<td>FIA-PP – PSYCHOLOGICAL AND PHYSIOLOGICAL ACOUSTICS</td>
<td></td>
</tr>
<tr>
<td>ENVIRONMENTAL NOISE OF SCHOOLS AND ITS RELATION WITH COGNITIVE PERFORMANCE AND CORTISOL LEVELS IN ADOLESCENTS</td>
<td>5222</td>
</tr>
<tr>
<td>FIA-SS - SOUNDSCAPE</td>
<td></td>
</tr>
<tr>
<td>LISTENING TO FAITH: DESCRIPTION OF THE ALLOTMENT VILLAGE CAMPESTRE SOUNDSCAPE, IN MACEIÓ, BRAZIL</td>
<td>5231</td>
</tr>
<tr>
<td>FIA-NS – NOISE: SOURCES AND CONTROL</td>
<td></td>
</tr>
<tr>
<td>ACOUSTIC PERFORMANCE TO AIRBORNE NOISE IN VERTICAL PARTITIONS ON CONSTRUCTION LIGHT STEEL FRAMING. CASE STUDY: RESIDENTIAL BUILDING, PERNAMBUCO- BRAZIL</td>
<td>5242</td>
</tr>
<tr>
<td>SOUND POWER COMPARISON BETWEEN A NEW DEVICE AND A DAILY USE DEVICE UNDER THE STANDARD ISO 3741:2010</td>
<td>5253</td>
</tr>
</tbody>
</table>
NOISE IMPACT ASSESSMENT AROUND BUS TERMINAL. CASE STUDY: THE BUS TERMINAL OF CRUZ DAS ALMAS - MACEIÓ/AL
Alexandre Felipe De V. Santos, Karine S. De Andrade, Maria Lucia G. Da R. Oiticica

FIA-EN – ENVIRONMENTAL ACOUSTICS & COMMUNITY NOISE

EVALUATION OF ACOUSTIC COMFORT IN LONG STAY INSTITUTIONS FOR ELDERLY IN MACEIÓ-AL
Rafaela Bezerra, Lorena Firmino, Maria Oiticica

ANNOYANCE OF THE TRAFFIC NOISES IN THE CITY OF BUENOS AIRES
Vicente Sosa, Shin-Ichi Sato, Florent Masson

EVALUATION OF THE IMPACT OF TALL BUILDINGS CONSTRUCTION IN THE ACOUSTIC QUALITY OF INDOOR ENVIRONMENTS AND URBAN GRID OF THE NEIGHBORHOOD
Caroline Plech Gomes De Barros, Maria Lucia Gondim Da Rosa Oiticica

NIGHT NOISE IMPACT CAUSED BY COMMERCIAL ESTABLISHMENTS: CASE STUDY AVENUE DR. ANTONIO GOMES DE BARROS, MACEIÓ-AL
Bianca O. Pontes, Maria Lucia G. Da R. Oiticica

FIA-AA – ARCHITECTURAL ACOUSTICS-ROOM AND BUILDING ACOUSTICS

EVALUATION OF THE ACOUSTIC PERFORMANCE OF SYSTEMS OF WALLS AND FLOORS FOR VERIFYING COMPLIANCE WITH STANDARD 15.575
Thayne Nunes, Marco Rodrigues, Luciano Mello, Maria Lucia Oiticica

RESULTS COMPARISON OF ACOUSTIC PERFORMANCE OF A CHURCH WITH CONTEMPORARY ARCHITECTURE MEASURED WITH TWO TYPES OF IMPULSIVE SOURCE
Marseille Nunes Barbo, Dinara Xavier Da Paixão, Leonardo Arzeno, Moisés Canabarro

UNCERTAINTY IN MEASUREMENT DETERMINATION IN THE SOUND REDUCTION INDEX IN LABORATORY
Rafael Ferreira Heissler, Henrique Santos Labres, Maria Fernanda De Oliveira Nunes, Marco Aurélio Stumpf González

SOUND INSULATION FIELD MEASUREMENTS OF BRAZILIAN TRADITIONAL INTERNAL HORIZONTAL PARTITION SYSTEMS
Josiane Reschke Pires, Sergio Klippel Filho, Rafael Trevisan, Maria Fernanda De Oliveira Nunes

CHARACTERIZATION OF RESILIENT MATERIAL USED IN FLOATING FLOOR SYSTEMS
Leticia Zuchetto, Rafael Trevisan, Maria Fernanda Nunes

SOUND INSULATION COMPARATIVE STUDY ON CERAMIC MASONRY WITH MORTAR OR PLASTERBOARD COATING
Rafael Trevisan, Sergio Klippel Filho, Josiane Reschke Pires, Maria Fernanda Nunes De Oliveira

Author Index