

# **43rd International Congress and Exposition on Noise Control Engineering (Internoise 2014)**

## **Improving the World through Noise Control**

**Melbourne, Australia  
16-19 November 2014**

**Volume 1 of 8**

**Editors:**

**John Davy  
Terry McMinn  
Norm Broner**

**Charles Don  
Liz Dowsett  
Marion Burgess**

ISBN: 978-1-63439-809-1

**Printed from e-media with permission by:**

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



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

Copyright© (2014) by the Australian Acoustical Society  
All rights reserved.

Printed by Curran Associates, Inc. (2015)

For permission requests, please contact the Australian Acoustical Society  
at the address below.

Australian Acoustical Society  
P. O. Box 2183  
Magill North S.A. 5072  
Australia

Phone: (08) 7225 0112

Fax: (08) 7225 0112

[GeneralSecretary@acoustics.asn.au](mailto:GeneralSecretary@acoustics.asn.au)

**Additional copies of this publication are available from:**

Curran Associates, Inc.  
57 Morehouse Lane  
Red Hook, NY 12571 USA  
Phone: 845-758-0400  
Fax: 845-758-2634  
Email: [curran@proceedings.com](mailto:curran@proceedings.com)  
Web: [www.proceedings.com](http://www.proceedings.com)

# TABLE OF CONTENTS

## VOLUME 1

### PLENARY 1

SOUND SKETCH: SHAPING SOUND IN SPACE AND TIME USING LOUDSPEAKER ARRAYS .....	1
<i>Jung-Woo Choi</i>	

### KEYNOTE 1

CAN TECHNOLOGY DELIVER ACCEPTABLE LEVELS OF AIRCRAFT NOISE? .....	23
<i>R. Jeremy Astley</i>	

### KEYNOTE 2

A NEW ERA FOR APPLICATIONS OF ACTIVE NOISE CONTROL .....	35
<i>Xiaojun Qiu, Jing Lu, Jie Pan</i>	

### L1A ACTIVE CONTROL OF SOUND

GENERATION OF LOCALIZED SOUND USING SPEAKER ARRAY .....	45
<i>Kigen Fukaya, Hiroyuki Iwamoto, Akira Sanada, Nobuo Tanaka</i>	
ANALYSIS ON THE TIMBRE OF AMBISONICS RECORDING BY CIRCULAR AND SPHERICAL MICROPHONE ARRAY USING A BINAURAL LOUDNESS MODEL .....	53
<i>Bosun Xie, Yang Liu</i>	
REDUCTION OF AIR SPACE BEHIND PIEZOELECTRIC ABSORBING PANEL USING NEGATIVE STIFFNESS .....	60
<i>Keisuke Yamada, Kenta Yamagata, Hideo Utsuno</i>	
A STABILITY ANALYSIS OF CLUSTER ACTIVE CONTROL SYSTEM OF SINUSOIDAL SOUND IN FREE SPACE .....	70
<i>Haoxin Yu, Kean Chen, Zhimin Sang, Hai Dai</i>	

### T8A SOUND QUALITY

PSYCHOACOUSTIC ANALYSIS OF HVAC NOISE WITH EQUAL LOUDNESS .....	79
<i>Silke Hohls, Thomas Biermeier, Ralf Blaschke, Stefan Becker</i>	
PERCEPTION OF SOUND QUALITY OF PRODUCT SOUNDS A SUBJECTIVE STUDY USING A SEMANTIC DIFFERENTIAL .....	86
<i>David Hilsmeier, Lena Schell-Majoer, Jan Rennies, Steven Van De Par</i>	
IMPROVING SOUND QUALITY MEASURES THROUGH THE MULTIFACETED SOUNDSCAPE APPROACH .....	95
<i>Brigitte Schulte-Fortkamp</i>	
CONTRIBUTION OF SINGLE SOUNDS TO SOUND QUALITY ASSESSMENTS OF MULTI-SOURCE ENVIRONMENTS .....	100
<i>Sabrina Skoda, Jochen Steffens, Jorg Becker-Schweitzer</i>	
STUDY ON EVALUATION METHOD OF THE PURE TONE FOR SMALL FAN .....	107
<i>Takao Yamaguchi, Gaku Minorikawa, Masayuki Kihara</i>	

### C1A AEROACOUSTICS

STUDY ON MODELING OF FLOW INDUCED NOISE USING LIGHTHILL'S ANALOGY AND BOUNDARY ELEMENT METHOD .....	112
<i>Masaaki Mori, Takayuki Masumoto, Kunihiko Ishihara, Takuya Oshima, Yosuke Yasuda, Tetsuya Sakuma</i>	
DIRECT NUMERICAL SIMULATION OF FLOW AND ACOUSTIC FIELDS AROUND AN AIR-REED INSTRUMENT WITH TONE HOLES .....	122
<i>Hiroshi Yokoyama, Masaki Kobayashi, Hirofumi Onitsuka, Akira Miki, Akiyoshi Iida</i>	
AERODYNAMIC NOISE PRODUCED IN FLOW AROUND AN AUTOMOBILE BONNET .....	132
<i>Hiroshi Yokoyama, Takahiro Nakajima, Taishi Shinohara, Masashi Miyazawa, Akiyoshi Iida</i>	

### A1A EDUCATION – OUTREACH TO COMMUNITY

ROLE FOR AN ACOUSTICAL SOCIETY JOURNAL .....	140
<i>Marion Burgess</i>	

<b>EDUCATION AND OUTREACH: I-INCE PUBLICATIONS</b> .....	145
<i>Courtney B. Burroughs, James K. Thompson</i>	
<b>COMMUNICATING THE NOISE MESSAGE</b> .....	155
<i>Jeffrey Parnell, John Wassermann</i>	
<b>PUBLIC PARTICIPATION AT MEASURES TO REDUCE NOISE IN GERMANY</b> .....	164
<i>Annett Zeisler</i>	

### **H1A URBAN SOUND PROPAGATION**

<b>COMPARISON OF ACOUSTIC PULSE PROPAGATION BETWEEN SCALE-MODEL MEASUREMENTS AND THREE-DIMENSIONAL SIMULATION OVER REAL-LIFE URBAN TOPOGRAPHY</b> .....	168
<i>Takuya Oshima, Takashi Ishizuka, Takahide Kamijo</i>	
<b>CALCULATION OF SOUND PROPAGATION WITH HIGHLY REFLECTIVE ENVIRONMENTS</b> .....	177
<i>Wolfgang Probst</i>	
<b>MODEL BASED MONITORING OF TRAFFIC NOISE IN AN URBAN DISTRICT</b> .....	187
<i>Frits Van Der Eerden, Freek Graffland, Peter Wessels, Arjo Segers, Erik Salomons</i>	
<b>EXPERIMENTAL ANALYSIS OF THE NOISE SHIELDING BY A GREEN ROOF IN RESPONSE TO RAINFALL</b> .....	197
<i>Timothy Van Renterghem, Mathias Despriet, Dick Botteldooren</i>	

### **Q2A NUMERICAL METHODS IN VIBRO-ACOUSTICS**

<b>ENHANCING THE LOW FREQUENCY VIBRATION REDUCTION PERFORMANCE OF PLATES WITH EMBEDDED ACOUSTIC BLACK HOLES</b> .....	201
<i>Stephen C. Conlon, John B. Fahnlne, Fabio Semperlotti, Philip A. Feurtado</i>	
<b>FE BASED MEASURES FOR STRUCTURE BORNE SOUND RADIATION</b> .....	209
<i>Matthias Klaerner, Steffen Marburg, Lothar Kroll</i>	
<b>EXPERIMENTALLY UNCERTAINTY QUANTIFICATION IN NUMERICAL AND ANALYTICAL BEAM MODELS</b> .....	216
<i>P. Langer, K. Sepahvand, M. Krause, S. Marburg</i>	
<b>PREDICTION OF AIRBORNE AND STRUCTURE BORNE SOUND TRANSMISSION THROUGH HEARING PROTECTORS USING FEM</b> .....	226
<i>Franck Sgard, Martin Brummund, Guilhem Viallet, Sylvain Boyer, Olivier Doutres, Hugues Nelisse, Frederic Laville, Yvan Petit, Jerome Boutin</i>	
<b>ANALYTICAL AND NUMERICAL APPROACHES TO PREDICT RADIATED SOUND POWER OF FLUID-LOADED CYLINDRICAL SHELLS</b> .....	235
<i>Yiling Zhang, Weikang Jiang, Herwig Peters, Nicole Kessissoglou</i>	

### **B4A MACHINERY N&V - PLANT**

<b>ANALYSIS OF SOUND PROPAGATION IN FINNED TUBE BUNDLE OF HRSG IN POWER PLANT</b> .....	242
<i>Sungjong Ahn, Sanghyuk Lee, Jinwoong Ha, Eontak Shin</i>	
<b>FATIGUE LIFE ESTIMATION OF PIPING SYSTEM FOR EVALUATION OF ACOUSTICALLY INDUCED VIBRATION (AIV)</b> .....	248
<i>Hisao Izuchi Masato Nishiguchi, Gary Y. H. Lee</i>	
<b>NUMERICAL AND EXPERIMENTAL STUDY ON MECHANISM OF LOW FREQUENCY NOISE FROM HEAT RECOVERY STEAM GENERATOR</b> .....	255
<i>Hongyun Tang, Weikang Jiang, Zhenmao Zhong, Yingjiu Zhao</i>	

### **N1 SPEECH PRIVACY IN BUILDINGS**

<b>IMPROVEMENT OF BODY-CONDUCTED SPEECH RECOGNITION USING MODEL ESTIMATION</b> .....	263
<i>Masashi Nakayama, Shunsuke Ishimitsu, Satoshi Nakatani</i>	
<b>AN ELECTRONIC DATABASE OF SPEECH SOUND LEVELS</b> .....	267
<i>Anthony Nash</i>	
<b>THE INFLUENCE OF ABFUSOR CONFIGURATION TO THE SPEECH PRIVACY AND INTELLIGIBILITY IN AN OPEN PLAN OFFICE</b> .....	274
<i>Joko Sarwono, Arinda Puspita Rachman, Iva Rofiatun Nisa Azzahra, Sentagi Sesotya Utami</i>	
<b>PRELIMINARY STUDY OF THE ACOUSTIC BEHAVIOR CONCERNING AN INNOVATIVE PROTOTYPE FOR INDOOR MODULAR PARTITIONING</b> .....	283
<i>Goncalo Simoes, Jorge Patricio, Paulina Faria</i>	
<b>SPEECH PRIVACY AND INTELLIGIBILITY IN OPEN-PLAN OFFICES AS AN IMPACT OF SOUND-FIELD DIFFUSENESS</b> .....	291
<i>Sentagi Sesotya Utami, Joko Sarwono, Nurwachid Al Rochmadi, Nanan Suheri</i>	
<b>DEVELOPMENT AND SOUND ABSORPTION OF INTERIOR ADJUSTABLE ACOUSTICAL PANELS</b> .....	300
<i>Chuan Wen Chou, Rong Ping Lai, Shao-Chun Chien, Po Hung Yeh</i>	

## **N8A ROOM ACOUSTICS**

<b>PSYCHOACOUSTIC ANALYSIS OF PREFERENCE REVERBERATION TIME FOR GAMELAN BALI CONCERT HALL</b> .....	306
<i>Ni Putu Amanda Nitidara, Joko Sarwono, I. G. Nyoman Merthayasa</i>	
<b>MICRO-PERFORATED SHEETS AS DAY-LIGHT CEILINGS</b> .....	310
<i>Christian Nocke, Catja Hilge, Jean-Marc Scherrer</i>	
<b>APPLICATION OF AN IN-SITU MEASUREMENT METHOD USING ENSEMBLE AVERAGING TECHNIQUE TO MATERIAL DEVELOPMENT</b> .....	315
<i>Noriko Okamoto, Toru Otsuru, Reiji Tomiku, Takaaki Kamimizu, Makoto Yamaguchi, Takeshi Okuzono</i>	
<b>THE DESIGN OF MPP AND ITS APPLICATION TO ENHANCE THE ACOUSTICS OF A REAL AUDITORIUM</b> .....	321
<i>J. Sarwono, I. Prasetyo, S. Andreas, A. William</i>	

## **D1 ROAD VEHICLE NOISE**

<b>SELECTION OF STATE HIGHWAY BRIDGE EXPANSION JOINTS IN NOISE SENSITIVE AREAS</b> .....	331
<i>Stephen Chiles</i>	
<b>ROAD TRAFFIC FACADE TREATMENT IN ISRAEL</b> .....	338
<i>David Epstein</i>	
<b>TOWARDS A REDUCTION OF NOISE EMISSION OF POWERED TWO-WHEELS - PART 1</b> .....	343
<i>Joel Lelong, Roger Chatagnon, Christian Clerc, David Jamin, Maxine Seigner, Michael Thivant</i>	
<b>TOWARDS A REDUCTION OF NOISE EMISSION OF POWERED TWO-WHEELS - PART 2</b> .....	353
<i>Michael Thivant, Christian Clerc, David Jamin, Quentin Gauthier, Joel Lelong, Roger Chatagnon</i>	

## **D4A PAVEMENT MODELLING AND MEASUREMENT TECHNIQUES**

<b>TEST SECTIONS TO STUDY THE ACOUSTICAL QUALITY AND DURABILITY OF THIN NOISE REDUCING ASPHALT LAYERS</b> .....	361
<i>Anneleen Bergiers, Joelle De Visscher, Katlee, Denolf, Alexandra Destree, Barbara Vanhooreweder, Cedric Vuye</i>	
<b>INVESTIGATING LATERAL POROSITY EFFECT ON AIR PUMPING NOISE FROM CONNECTED ROAD CAVITIES WITH CFD SIMULATIONS</b> .....	371
<i>Frederic Conte, Philippe Klein, Michel Berengier</i>	
<b>REDUCTION OF VEHICLE NOISE AT LOWER SPEEDS DUE TO A POROUS OPEN-GRADED ASPHALT PAVEMENT</b> .....	381
<i>Paul Donovan</i>	
<b>A STUDY ON COMPARISON OF NOISE REDUCTION EFFECT OF SINGLE-LAYER DRAINAGE ASPHALT PAVEMENT AND DOUBLE-LAYER DRAINAGE ASPHALT PAVEMENT : PART 1 SOUND POWER LEVEL AND FREQUENCY CHARACTERISTIC IN INITIAL CONSTRUCTION</b> .....	393
<i>Hisho Mori, Kenichi Ishikawa, Tomotaka Ueta, Eiji Noguchi, Motoomi Yoshida, Masami Kokusho, Hironori Nagaoka</i>	
<b>COMPARISON OF ROAD AND LABORATORY MEASUREMENTS OF TYRE/ROAD NOISE</b> .....	400
<i>Beata Swieczko-Zurek, Jerzy Ejsmont, Grzegorz Ronowski, Stanislaw Taryma</i>	

## **R1 UNDERWATER ACOUSTICS**

<b>AQUO PROJECT - MODELLING OF SHIPS AS NOISE SOURCE FOR USE IN AN UNDERWATER NOISE FOOTPRINT ASSESSMENT TOOL</b> .....	408
<i>Christian Audoly, Celine Rousset, Thomas Leissing</i>	
<b>SHIPPING NOISE IMPACTS ON MARINE LIFE</b> .....	418
<i>Douglas H. Cato</i>	
<b>AMBIENT NOISE FORWARD PREDICTION FROM MEASURED CHARACTERISTICS AND HIGH RESOLUTION MODELING</b> .....	424
<i>Anthony I. Eller, Kevin D. Heaney</i>	
<b>DIRECTIONALITY AND COHERENCE OF UNDERWATER NOISE AND THEIR IMPACT ON SONAR ARRAY PERFORMANCE</b> .....	429
<i>Zhi Yong Zhang</i>	

## **T4A NOISE AND HEALTH – OVERALL EFFECTS AND SUSCEPTIBLE GROUPS**

<b>DAYTIME AND NIGHT-TIME AIRCRAFT NOISE AND CARDIOVASCULAR DISEASE NEAR HEATHROW AIRPORT IN LONDON</b> .....	439
<i>Anna L. Hansell, Marta Blangiardo, Lea Fortunato, Sarah Floud, Kees De Hoogh, Daniela Fecht, Rebecca E. Ghosh, Helga E. Laszlo, Clare Pearson, Linda Beale, Sean Beevers, John Gulliver, Nicky Best, Sylvia Richardson, Paul Elliott</i>	
<b>NOISE SENSITIVITY MODULATES THE AUDITORY-CORTEX DISCRIMINATION OF SOUND FEATURE CHANGES</b> .....	449
<i>Marja Heinonen-Guzejev, Marina Klyuchko, Kauko Heikkila, Vittoria Spinosa, Mari Tervaniemi, Elvira Brattico</i>	

<b>FOUR ELECTROPHYSIOLOGICAL STUDIES INTO NOISE SENSITIVITY</b> .....	454
<i>Daniel Shepherd, Michael J. Hautus, Jenny Lee, Joe Mulgrave</i>	
<b>TRAFFIC NOISE IN RELATION TO SELF-REPORTED MENTAL HEALTH</b> .....	464
<i>Anu W. Turunen, Tarja Yli-Tuomi, Pekka Tittanen, Jaana I. Halonen, Satu Mannisto, Timo Lanki</i>	

### **E1 RAILWAY NOISE AND VIBRATION**

<b>EXHAUST NOISE CONTROL CASE STUDY FOR 2800 CLASS LOCOMOTIVE</b> .....	467
<i>Briony Croft, Steve Brown, Aaron Miller, Andrew Parker</i>	
<b>RAILWAY-NOISE REDUCTION EFFECT AND AGED DETERIORATION PROPERTIES OF SOFTER RAIL PAD</b> .....	475
<i>Hidetoshi Saito, Masaki Ninomiya, Kenta Shimizu, Yoji Takeda, Daigo Sato</i>	
<b>CONSIDERING THE PERCEPTION OF COMBINED RAILWAY NOISE AND VIBRATION AS A MULTIDIMENSIONAL PHENOMENON</b> .....	479
<i>Calum Sharp, James Woodcock, David Waddington</i>	
<b>RAILWAY VIBRATION REDUCTION USING IMPACT DAMPERS</b> .....	489
<i>Wonseok Yang, Sangkeun Ahn, Hyoin Koh, Junhong Park</i>	

### **PIA VIBRATION AND SHOCK**

<b>FOOTFALL VIBRATION ANALYSIS OF A HIGH PRECISION MANUFACTURING FACILITY</b> .....	492
<i>Jason Gaekwad, Yong Keat Lee, Neil Mackenzie</i>	
<b>ANALYSIS ON PROPULSION SHAFTING COUPLED TORSIONAL-LONGITUDINAL VIBRATION UNDER DIFFERENT APPLIED LOADS</b> .....	501
<i>Qianwen Huang, Jia Liu, Cong Zhang, Xiping Yan</i>	
<b>VIBRATION OF A CURVED SUBSEA PIPELINE DUE TO INTERNAL SLUG FLOW</b> .....	508
<i>Ahmed M. Reda, Gareth L. Forbes, Kristoffer K. McKee, Ian M. Howard</i>	
<b>INVESTIGATIONS OF EDDY CURRENT VIBRATION DAMPING</b> .....	523
<i>Karel Ruber, Sangarapillai Kanapathipillai, Robert Randall</i>	

### **LIB ACTIVE CONTROL OF SOUND**

<b>INDIVIDUAL ERROR SIGNAL DESIGN IN NARROWBAND ACTIVE NOISE CONTROL SYSTEMS</b> .....	537
<i>Cheng-Yuan Chang, Sen M. Kuo</i>	
<b>MITIGATION OF INDOOR LOW-FREQUENCY NOISE USING SINGLE CHANNEL ACTIVE NOISE CONTROL SYSTEM</b> .....	544
<i>Ken Kaneuchi, Koichi Nishimura, Toshihito Matsui</i>	
<b>A POWER CONSTRAINED ALGORITHM FOR MULTI-ZONE SOUND REPRODUCTION</b> .....	554
<i>Xiangning Liao, Sifa Zheng, Bo Peng, Xiaomin Lian</i>	
<b>NOISE REDUCTION THROUGH ACTIVE NOISE CONTROL USING STEREOPHONIC SOUND FOR INCREASING QUIET ZONE</b> .....	560
<i>Dongki Min, Junjong Kim, Sangwon Nam, Junhong Park</i>	
<b>HYBRID ACTIVE NOISE BARRIER WITH SOUND MASKING</b> .....	563
<i>Xun Wang, Yosuke Koba, Satoshi Ishikawa, Shinya Kijimoto</i>	

### **VIA METROLOGY – CALIBRATION AND REALISATION OF STANDARDS**

<b>EXPERIMENTAL DETERMINATION OF THE DIFFERENCE BETWEEN FREE-FIELD AND PRESSURE SENSITIVITY LEVELS OF HALF INCH LABORATORY STANDARD MICROPHONES</b> .....	571
<i>Thiago Antonio Bacelar Milhomem, Zemar Martins Defilippo Soares, Lucas Machado Da Rosa Albuquerque</i>	
<b>NOISE DOSIMETER MICROPHONES: AN EVALUATION OF THE MEASUREMENT RELIABILITY</b> .....	581
<i>David Bello Bonarengo</i>	
<b>REALIZATION OF AIR-BORNE SOUND PRESSURE UNIT WITH LDA TECHNIQUE BY SPECTRUM AND AUTOCORRELATION METHOD IN A TRAVELLING WAVE TUBE</b> .....	591
<i>Longbiao He, Xiujuan Feng, Ping Yang, Feng Niu, Bo Zhong</i>	
<b>INFLUENCE OF GROUND-SHIELD CONFIGURATION IN RECIPROCITY CALIBRATION OF LABORATORY STANDARD MICROPHONES</b> .....	599
<i>Erling Sandermann Olsen, Henrik Carlsen</i>	

### **C1B AEROACOUSTICS**

<b>ON THE REDUCTION OF THE ENGINE AND AERODYNAMIC NOISE OF AIRCRAFT</b> .....	609
<i>L. M. B. C. Campos</i>	
<b>BENCHMARK STUDY OF NUMERICAL SOLVERS FOR THE PREDICTION OF INTERIOR NOISE TRANSMISSION EXCITED BY A-PILLAR VORTEX</b> .....	617
<i>Munhwan Cho, Hyoung Gun Kim, Chisung Oh, Kang Duck Ih, Ashok Khondge, Fred Mendonca, Jongyun Lim, Eui-Sung Choi, Bastien Ganty, Raphael Hallez</i>	

<b>CHARACTERISTICS OF TURBULENT NOISE FROM BACKWARD-CURVED CENTRIFUGAL FAN WITH RECTANGULAR CASING</b> .....	627
<i>Hidechito Hayashi, Takuma Aramaki, Seiji, Shirahama, Ippei Oda, Tetsuya Okumura</i>	
<b>CHARACTERIZATION OF AN AEROACOUSTIC WIND TUNNEL FACILITY</b> .....	634
<i>Kyle Pascioni, Robert Reger, Adam Edstrand, Louis Cattafesta</i>	

### **A1B EDUCATION – OUTREACH TO COMMUNITY**

<b>COMMON FAILINGS OF INTER-DISCIPLINARY STUDIES ON NOISE AND THE POTENTIAL SOLUTIONS</b> .....	644
<i>Stuart J. McLaren, Wyatt H. Page</i>	
<b>WEB-BASED CALCULATORS FOR TRANSPORTATION NOISE AND VIBRATION</b> .....	651
<i>Michael Smith, Stephen Chiles</i>	

### **A2A EDUCATION – TO THE PROFESSION**

<b>POST BACCALAUREATE PROFESSIONAL DEVELOPMENT IN NOISE CONTROL ENGINEERING</b> .....	660
<i>David K. Holger</i>	
<b>EXTENDING THE SCOPE OF URBAN SOUND PLANNING BY EDUCATION AND RESEARCH</b> .....	664
<i>Joachim Scheuren, Wolfgang Kropp, Jens Forssen</i>	
<b>EXPANDING THE HORIZON OF MACHINERY NOISE SOURCE CONTROL VIA A DEDICATED SHORT COURSE ON GEAR DYNAMICS AND NOISE</b> .....	671
<i>Rajendra Singh</i>	

### **H1B URBAN SOUND PROPAGATION**

<b>USE OF TRAFFIC MODELING AND GEOGRAPHIC INFORMATION SYSTEMS TO EVALUATE NOISE REDUCTION POLICIES IN URBAN ENVIRONMENTS: CASE STUDY IN BOGOTA - COLOMBIA</b> .....	680
<i>Daniel Paez, Maite Throuin, Eduardo Behrentz, Jose Pacheco, Anthony Perry</i>	
<b>ASSESSMENT OF NOISE POLLUTION SOURCED FROM ENTERTAINMENT PLACES IN ANTALYA, TURKEY</b> .....	689
<i>Deniz Sari, Nesimi Ozkurt, Samet Feyyaz Hamamci, Mustafa Ece, Nazli Yalcindag, Ali Akdag, Nese Yugruk Akdag</i>	

### **Q2B NUMERICAL METHODS IN VIBRO-ACOUSTICS**

<b>IMPLEMENTATION ASPECTS OF THE BOUNDARY ELEMENT METHOD INCLUDING VISCOUS AND THERMAL LOSSES</b> .....	695
<i>Vincente Cutanda Henriquez, Peter Juhl</i>	
<b>PREDICTION OF THE RADIATED SOUND POWER FROM A FLUID-LOADED FINITE CYLINDER USING THE SURFACE CONTRIBUTION METHOD</b> .....	703
<i>Daipei Liu, Herwig Peters, Nicole Kessissoglou, Steffen Marburg</i>	
<b>A REVIEW OF THE COUPLING PARAMETER OF THE BURTON AND MILLER BOUNDARY ELEMENT METHOD</b> .....	711
<i>Steffen Marburg</i>	
<b>A COMPARISON OF NUMERICAL METHODS FOR THE LARGE-SCALE MODELLING OF ACOUSTIC COUPLED FLUID-STRUCTURE INTERACTIONS OF DOUBLE-WALLED CYLINDRICAL SHELLS</b> .....	717
<i>Herwig Peters, Daniel Ryan Wilkes</i>	

### **B4B MACHINERY N&V - PLANT**

<b>MINIMISING THE COST OF NOISE CONTROL IN THE COAL SEAM GAS INDUSTRY BY SELECTION OF NOISE TREATMENTS FOR GAS WELLS USING ENGINEERING OPTIMISATION</b> .....	727
<i>David James Davis</i>	
<b>ACOUSTIC AND VIBRATION STABILITY ANALYSIS OF FURNACE SYSTEM IN SUPERCRITICAL BOILER</b> .....	737
<i>Hyuk-Min Kwon, Chi-Hoon Cho, Heui-Won Kim</i>	
<b>NOISE CONTROL FOR FLUID POWER SYSTEMS</b> .....	744
<i>Binghui Li, Simon Moore</i>	

### **N3 GREEN SUSTAINABLE BUILDINGS**

<b>THE CHALLENGE OF MEETING BOTH ACOUSTIC AND THERMAL COMFORT IN 21ST CENTURY SCHOOL CLASSROOMS</b> .....	751
<i>Colin Campbell, Casten Svensson, Erling Nilsson</i>	

<b>NOISE ASSOCIATED WITH THE GROUND WATER SYSTEMS SERVING RESIDENTIAL GEOTHERMAL HEAT PUMPS</b> .....	774
<i>Jeffrey L. Fullerton</i>	
<b>ACOUSTICAL INVESTIGATION OF OPEN-PLAN OFFICES IN GREEN BUILDING: SIMULATION EXPERIMENT</b> .....	782
<i>Nazli Che Din, Nurul Amira Abd Jalil, Nila Inangda Keumala, Asrul Sani Razak</i>	

## VOLUME 2

### **N8B ROOM ACOUSTICS**

<b>ROOM IMPULSE RESPONSE MEASUREMENT WITH A SPHERICAL MICROPHONE ARRAY, APPLICATION TO ROOM AND BUILDING ACOUSTICS</b> .....	791
<i>Sebastien Barre, Dirk Dobler, Andy Meyer</i>	
<b>SOUND SOURCE LOCALIZATION ACCURACY OF AMBISONIC MICROPHONE IN ANECHOIC CONDITIONS</b> .....	797
<i>Pawel Malecki</i>	
<b>INFLUENCE OF TIME-VARYING TALKER DIRECTIVITY ON THE CALCULATION OF SPEECH TRANSMISSION INDEX FROM SPEECH IN A ROOM ACOUSTICAL CONTEXT</b> .....	802
<i>Adam Opsata, Densil Cabrera, Manuj Yadav</i>	
<b>VALIDATION OF LATERAL FRACTION RESULTS IN ROOM ACOUSTIC MEASUREMENTS</b> .....	810
<i>Daniel Protheroe, Christopher Day</i>	

### **D2A VEHICLE NOISE VIBRATION AND HARSHNESS (NVH)**

<b>STUDY ON THE VERTICAL VIBRATION OF AN OCCUPANT - SEAT CUSHION SYSTEM</b> .....	817
<i>Zhichao Hou</i>	
<b>DEVELOPMENT OF AN ADAPTIVE COMPOSITE LEAF SPRING</b> .....	826
<i>John Sebastian, Martin Dannemann, Pawel Kostka, Jana Ehlig, Niels Modler</i>	
<b>MEASUREMENT OF THE DISTRIBUTED DYNAMIC STIFFNESS OF SEATS UNDER COMPRESSION TO ANALYZE DYNAMIC CHARACTERISTIC OF SEATS</b> .....	834
<i>Deokman Kim, Kyongwon Min, Hyunkyuu Park, Junhong Park</i>	
<b>TIRE/ROAD CONTACT MODELING FOR THE IN-VEHICLE NOISE PREDICTION</b> .....	837
<i>Trong Dai Vu, Hai Ping Yin, Denis Duhamel, Arnaud Gaudin, Zouhir Abbadi</i>	
<b>STRUCTURAL TRANSFER PATH ANALYSIS OF AUTOMOBILE TIRE/ROAD NOISE</b> .....	842
<i>Xiongying Yu, Jian Pang, Fujiang Min, Wei Wen, Shichao Gong</i>	

### **D4B PAVEMENT MODELLING AND MEASUREMENT TECHNIQUES**

<b>PROJECT ROSANNE: ROLLING RESISTANCE, SKID RESISTANCE, AND NOISE EMISSION MEASUREMENT STANDARDS FOR ROAD SURFACES</b> .....	849
<i>Manfred Haider, Marco Conter, Reinhard Wehr, Ulf Sandberg, Fabienne Anfosso</i>	
<b>EFFECT OF ROAD SURFACES ON ROAD TRAFFIC NOISE ON THE PUBLIC ROADS OF JAPAN - AN INVESTIGATION BASED ON TYRE/ROAD NOISE MEASUREMENT</b> .....	855
<i>Hiroshi Koike, Akiyoshi Ito</i>	
<b>SPB AND CPX RESULTS OF RUBBERIZED SURFACES IN THE ITALIAN URBAN AND EXTRA-URBAN CONTEXT</b> .....	863
<i>Gaetano Licitra, Luca Teti, Mauro Cerchiai, Elena Ascari, Marco Chetoni</i>	
<b>A STUDY ON COMPARISON OF NOISE REDUCTION EFFECT OF SINGLE-LAYER DRAINAGE ASPHALT PAVEMENT AND DOUBLE-LAYER DRAINAGE ASPHALT PAVEMENT: PART 2 LONG-TERM CHANGE OF SOUND POWER LEVEL AND FREQUENCY CHARACTERISTIC</b> .....	871
<i>Tomotaka Ueta, Kenichi Ishikawa, Hisho Mori, Eiji Noguchi, Motoomi Yoshida, Masami Kokusho, Hironori Nagaoka</i>	

### **R3A UNDERWATER NOISE AND ITS CONTROL**

<b>LDV-BASED VIBRATION MEASUREMENT OF A STIFFENED PLATE COVERED BY A RUBBER COATING WITH MULTI-LAYERED PERIODIC POROUS IN AIR</b> .....	878
<i>Xiuchang Huang, Dawei Zhu, Jin Tian, Hongxing Hua</i>	
<b>NUMERICAL STUDY ON NON-CAVITATING NOISE OF MARINE PROPELLER</b> .....	887
<i>Ji-Sung Jang, Hyung-Taek Kim, Won-Ho Joo</i>	
<b>OPTIMISATION APPLIED TO COMPOSITE MARINE PROPELLER NOISE</b> .....	893
<i>N. Lex Mulcahy, Paul Croaker, Damian G. McGuckin, Paul A. Brandner, Nicole Kessissoglou</i>	
<b>ADULTERATION OF UNDERWATER ACOUSTIC MEASUREMENTS</b> .....	901
<i>Stefan Schael</i>	



<b>LES-BASED NUMERICAL ANALYSIS OF SURFACE-PRESSURE FLUCTUATIONS AND UNSTEADY THRUST OF A MARINE PROPELLER</b> .....	910
<i>Jin Tian, Haosen Yang, Zhenguo Zhang, Guoqing Yuan, Zhiqiang Rao, Hongxing Hua</i>	

#### **T4B NOISE AND HEALTH – OVERALL EFFECTS AND SUSCEPTIBLE GROUPS**

<b>NON-SPECIFIC PHYSICAL SYMPTOMS AND RELATED FUNCTIONING IN PEOPLE WITH SELF-REPORTED NOISE SENSITIVITY</b> .....	918
<i>Christos Baliatsas, Irene Van Kamp, Mariette Hooiveld, Joris Yzermans, Erik Lebret</i>	
<b>WHAT FACTORS ARE ASSOCIATED WITH NOISE SENSITIVITY IN THE UK POPULATION?</b> .....	926
<i>Charlotte Clark, Mel Smuk, Stephen Stansfeld, Rik Van De Kerckhove, Hilary Notley</i>	
<b>INFLUENCE OF VISUAL FACTORS ON NOISE ANNOYANCE EVALUATION CAUSED BY ROAD TRAFFIC NOISE IN INDOOR ENVIRONMENT</b> .....	936
<i>Hui Ma, Wenjing Nie</i>	

#### **K2A APPLYING BUILDING ENVELOP DESIGN FOR NOISE MITIGATION**

<b>PREDICTION METHOD OF INSERTION LOSS OF DETACHED HOUSES AGAINST ROAD TRAFFIC NOISE BASED ON A POINT SOUND SOURCE MODEL- PREDICTION FORMULA CONSIDERING THE HEIGHTS OF BUILDINGS AND A PREDICTION POINT</b> .....	944
<i>Kazutoshi Fujimoto, Toru Tominaga, Kengo Morita, Tomoko Hirata</i>	
<b>NUMERICAL ANALYSIS OF SOUND INSULATION PERFORMANCE OF DOUBLE-LAYER WALL WITH VIBRATION ABSORBERS USING FDTD METHOD</b> .....	951
<i>Shuo-Yen Lin, Shinichi Sakamoto</i>	
<b>INVESTIGATIONS ON ROAD NOISE LEVEL SPATIAL VARIABILITY WITHIN A SPECIALLY DESIGNED ACOUSTIC BALCONY</b> .....	960
<i>Daniel A. Naish, Andy C. C. Tan, F. Nur Demirbilek</i>	
<b>THE SOUND TRANSMISSION LOSS ACROSS VENTILATION WINDOW UNDER ACTIVE NOISE CANCELLATION</b> .....	970
<i>Shiu-Keung Tang, Yean-Ghing Tong, Kwong-lam Tsui</i>	
<b>NOISE CONTROL POTENTIAL OF VACUUM ISOLATION PANELS</b> .....	977
<i>Sheldon Walters, Stephen Dance</i>	

#### **PIB VIBRATION AND SHOCK**

<b>TRANSIENT RESPONSE OF COMPLEX STIFFNESS SYSTEM USING A GREEN FUNCTION FROM THE HILBERT TRANSFORM AND THE STEADY SPACE TECHNIC.</b> .....	987
<i>Seung-Hoon Bae, Wei Bong Jeong, Jin-Rae Cho</i>	
<b>FREE VIBRATION ANALYSIS OF ELASTICALLY CONNECTED MULTIPLE-BEAMS WITH GENERAL BOUNDARY CONDITIONS USING IMPROVED FOURIER SERIES METHOD</b> .....	997
<i>Jingtao Du, Deshui Xu, Yufei Zhang, Tiejun Yang, Zhigang Liu</i>	
<b>IN-SITU ASSESSMENT OF BUILDING ISOLATION BEARINGS</b> .....	1008
<i>Neil Mackenzie, Yong-Keat Lee, Bill Dawson</i>	
<b>DEFECT SIZE ESTIMATION AND ANALYSIS OF THE PATH OF ROLLING ELEMENTS IN DEFECTIVE BEARINGS WITH RESPECT TO THE OPERATIONAL SPEED</b> .....	1014
<i>Alireza Moazenahmadi, Dick Petersen, Carl Howard, Nader Sawalhi</i>	

#### **LIC ACTIVE CONTROL OF SOUND**

<b>ACTIVE NOISE CONTROL BASED ON STATE FEEDBACK BY A CONCENTRATED MASS MODEL</b> .....	1024
<i>Shotaro Hisano, Satoshi Ishikawa, Shinya Kijimoto, Yosuke Koba</i>	
<b>ACTIVE STRUCTURAL ACOUSTIC CONTROL OF SOUND POWER RADIATION FROM A SOFT-CORE SANDWICH PANEL</b> .....	1034
<i>Kiran Sahu, Jukka Tuhkuri</i>	
<b>A THREE-STAGE METHOD FOR SOUND FIELD REPRODUCTION IN ROOMS WITH REFLECTION BOUNDARY:THEORY AND EXPERIMENTS</b> .....	1041
<i>Bo Peng, Sifa Zheng, Xiangning Liao, Xiaomin Lian</i>	
<b>EFFECT OF TRANSDUCER MISMATCH ON THE PERFORMANCE OF SPHERICAL MICROPHONE ARRAYS</b> .....	1048
<i>Dan Rao</i>	
<b>ACTIVE NOISE REDUCTION OF A COUPLED RECTANGULAR CAVITY USING ACTIVE WAVE CONTROL</b> .....	1054
<i>Motoya Watanabe, Hiroyuki Iwamoto, Nobuo Tanaka</i>	
<b>DESIGN OF ACTIVE NOISE CONTROL SYSTEM APPLIED TO HELICOPTER CABINS</b> .....	1064
<i>Shenggang Yan, Dakai Tang, Xiaonei Zhang, Haoxin Yu</i>	

## **V1B METROLOGY – CALIBRATION AND REALISATION OF STANDARDS**

<b>CALIBRATION METHODOLOGIES AND THE ACCURACY OF ACOUSTIC DATA</b> .....	1068
<i>Craig Beyers</i>	
<b>THE EFFECT OF WIND ON LOW FREQUENCY NOISE</b> .....	1076
<i>I-Chun Lin, Yein-Rui Hsieh, Ping-Fei Shieh, Hsun-Cheng Chuang, Li-Chung Chou</i>	
<b>FIRST RESULTS IN THE REALIZATION OF THE UNIT WATT IN AIRBORNE SOUND</b> .....	1088
<i>Katharina Voelkel, Christian Bethke, Spyros Brezas, Volker Wittstock</i>	
<b>INFLUENCE OF REFLECTING PLANE HAVING FINITE SURFACE DENSITY ON SOUND POWER LEVEL OF REFERENCE SOUND SOURCES CALIBRATED IN HEMI FREE-FIELD</b> .....	1098
<i>Keisuke Yamada, Hironobu Takahashi, Ryuzo Horiuchi</i>	

## **C2A AIRFRAME/FLOW-INDUCED-NOISE**

<b>INFLUENCE OF STRUCTURAL ELASTICITY ON TRAILING EDGE NOISE</b> .....	1107
<i>Li Chen, Nicole Kessissoglou</i>	
<b>WIND TUNNEL TEST OF TRAILING EDGE SERRATIONS FOR THE REDUCTION OF WIND TURBINE NOISE</b> .....	1116
<i>Andreas Fischer, Franck Bertagnolio, Wen Zhong Shen, Jesper Madsen, Helge Aagaard Madsen, Christian Bak, William Devenport, Nanyaporn Intaratetp</i>	
<b>MEASURING OWL FLIGHT NOISE</b> .....	1126
<i>Thomas Geyer, Ennes Sarradj, Christoph Fritzsche</i>	
<b>ANALYSIS AND CONTROL OF FLOW-ACOUSTIC FEEDBACK-LOOP INTERACTIONS IN TRANSITIONAL AIRFOILS</b> .....	1142
<i>Vladimir Golubev, Lap Nguyen, Reda Mankbadi, Michel Roger</i>	
<b>EFFECTS OF WING TIP SHAPING ON NOISE GENERATION</b> .....	1156
<i>Christine E. Klei, Rainer M. Buffo, Eike Stumpf</i>	

## **A2B EDUCATION – TO THE PROFESSION**

<b>THE NOISE DATABASE AND OTHER ELECTRONIC AND WEB-BASED TOOLS FOR RESEARCHERS AND EDUCATORS</b> .....	1166
<i>Elizabeth Francis Beach, Megan Gilliver, Warwick Williams</i>	
<b>AUDIO AND ACOUSTICAL RESPONSE ANALYSIS ENVIRONMENT (AARAE): A TOOL TO SUPPORT EDUCATION AND RESEARCH IN ACOUSTICS</b> .....	1170
<i>Densil Cabrera, Daniel Jimenez, William L. Martens</i>	
<b>EXPERIENCES OF MOOCS AND 25 YEAR SHORT COURSES FOR INDUSTRIES</b> .....	1180
<i>Yang-Hann Kim</i>	
<b>EUROPEAN ACOUSTICS ASSOCIATION SCHOOLS</b> .....	1184
<i>Luigi Maffei, Michael Vorlander, Kristian Jambrosic</i>	
<b>CAR MECHANIC TRAINING COURSE AND ACOUSTIC TECHNIQUE EDUCATION</b> .....	1192
<i>Kinji Nakamura</i>	
<b>STUDY AND PRACTICE OF JOINT TEACHING BETWEEN ZJU AND UWA</b> .....	1200
<i>Jie Pan, Brian Stone, Andrew Guzzomi, Hongmei Sun, Jing Zheng, Yuhui Tong Xuhao Du, Yingzhu Xia</i>	

## **OUTDOOR SOUND PROPAGATION**

<b>EXPERIMENTAL VALIDATION OF THE MODELLING OF SURFACE ROUGHNESS EFFECTS BY AN EFFECTIVE IMPEDANCE</b> .....	1209
<i>Olivier Faure, Benoit Gauvreau, Fabrice Junker, Philippe Lafon</i>	
<b>ACOUSTIC STUDY AND VISUALIZATION OF A COMPLEX ECHO AT THE KLONDIKE BLUFFS, IN THE ARCHES NATIONAL PARK, UTAH, USA</b> .....	1219
<i>Gunnar Heilmann, Mojtaba Navvab, Magdalena Boeck, Benjamin Vonrhein</i>	
<b>FIELD EXPERIMENT ON SOUND PROPAGATION FROM AN ELEVATED DIRECTIONAL SOURCE</b> .....	1229
<i>Shinichi Sakamoto, Toshikazu Takanashi, Sakae Yokoyama, Hirokazu Ishii</i>	
<b>FIELD EXPERIMENT ON GROUND-TO-GROUND SOUND PROPAGATION FROM A DIRECTIONAL SOURCE</b> .....	1237
<i>Toshikazu Takanashi, Shinichi Sakamoto, Sakae Yokoyama, Hirokazu Ishii</i>	

## **Q2C NUMERICAL METHODS IN VIBRO-ACOUSTICS**

<b>THE NUMERICAL PREDICTION AND FEATURES ANALYSIS OF CYLINDRICAL SHELL ACOUSTIC RADIATION NOISE</b> .....	1246
<i>Hongli Cao, Shiliang Fang, Liang An</i>	
<b>MODELLING THE FORCED RESPONSE OF A STIFFENED STRUCTURE</b> .....	1257
<i>James A. Forrest</i>	

<b>COUPLED ANALYSIS OF TWO-DIMENSIONAL ACOUSTIC AND MEMBRANE VIBRATION BY CONCENTRATED MASS MODEL</b> .....	1267
<i>Satoshi Ishikawa, Shinya Kijimoto, Ryoma Owaki, Ataru Matsuo</i>	
<b>A STUDY OF THE ASSUMPTIONS USED IN STATISTICAL ENERGY ANALYSIS</b> .....	1277
<i>Thibault Lafont, Nicolas Totaro, Alain Le Bot</i>	
<b>THE ADAPTIVE ORDER FEM APPROACH FOR VIBRO-ACOUSTIC SIMULATIONS: A REPORT ON A NEWLY IMPLEMENTED TECHNOLOGY WITH APPLICATION EXAMPLES DEMONSTRATING ITS SUPERIOR PERFORMANCE TO CONVENTIONAL FEM METHODS</b> .....	1284
<i>Koen Vansant, Raphael Hallez</i>	
<b>A REDUCED-ORDER STOCHASTIC FINITE ELEMENT ANALYSIS FOR STRUCTURES WITH UNCERTAINTIES</b> .....	1294
<i>Ji Yang, Beatrice Faverjon, Herwig Peters, Nicole Kississoglou</i>	

## **B2 MACHINERY N&V - ENGINES**

<b>EXPERIMENTAL ANALYSES OF VIBRATION AND NOISE OF FAULTED PLANETARY GEARBOX</b> .....	1302
<i>Zhuang Li</i>	
<b>PARAMETRICALLY EXCITED VIBRATION IN ROLLING ELEMENT BEARINGS</b> .....	1312
<i>R. Srinath, A. Sarkar, A. S. Sekhar</i>	
<b>VIBRATION REDUCTION OF BRUSH CUTTER CONSIDERING HUMAN RESPONSE CHARACTERISTIC</b> .....	1318
<i>Masanori Uemura, Junji Yoshida, Shigeru Miyakawa, Teruhito Oono, Daiga Ishikawa</i>	
<b>COUPLING ANALYSIS OF TORSIONAL VIBRATION AND ENGINE ROTATIONAL SPEED CONTROL SYSTEM OF MARINE PROPULSION SHATING</b> .....	1327
<i>Shuwen Yu, Yan Liu, Xiao Han, Meilong Chen, Wanyou Li</i>	

## **N4A CLASSROOM ACOUSTICS**

<b>THE SAME REVERBERATION TIME IN TWO IDENTICAL ROOMS DOES NOT NECESSARILY MEAN THE SAME LEVELS OF SPEECH CLARITY AND SOUND LEVELS WHEN WE LOOK AT IMPACT OF DIFFERENT CEILING AND WALL ABSORBERS</b> .....	1335
<i>Colin Campbell, Carsten Svensson, Erling Nilsson</i>	
<b>AN INVESTIGATION INTO THE ACOUSTICS OF AN OPEN PLAN COMPARED TO ENCLOSED KINDERGARTEN CLASSROOM</b> .....	1351
<i>Kiri Trengove Mealings, Jorg M. Buchholz, Katherine Demuth, Harvey Dillon</i>	
<b>A PILOT STUDY ON THE INFLUENCE OF LANGUAGE ON THE RESULTS OF SPEECH INTELLIGIBILITY TESTS IN CLASSROOMS</b> .....	1361
<i>Jan Rodosz, Wiktor Marek Zawieska</i>	
<b>NEW GENERATION LEARNING ENVIRONMENTS: CREATING GOOD ACOUSTIC ENVIRONMENTS - POLICY TO IMPLEMENTATION</b> .....	1370
<i>Amanda Robinson, Leanne Rose Munro</i>	
<b>ACOUSTICAL QUALITY ASSESSMENT OF LECTURE HALLS AT LUND UNIVERSITY, SWEDEN</b> .....	1382
<i>Rabab S. Youssef, Delphine Bard, Abd El Fattah A. Mahmoud, Nahed M. Esa</i>	

## **N7A ACOUSTIC CRITERIA IN REGULATIONS AND CLASSIFICATION SCHEMES FOR BUILDINGS**

<b>HOW TO MODIFY A TESTED FIRE-RATED WALL TO IMPROVE ITS SOUND TRANSMISSION RATING, WHILE MAINTAINING ITS OFFICIAL FIRE-RATED QUALIFICATION</b> .....	1392
<i>Harold Forester</i>	
<b>HEAVY/SOFT IMPACT SOUND CRITERIA AND REGULATION IN KOREA</b> .....	1400
<i>Jeong Ho Jeong</i>	
<b>DEFINING VEHICULAR NOISE LEVELS TO MANAGE RISK ASSOCIATED WITH EXTERIOR FACADE DESIGN</b> .....	1407
<i>John Loverde, Wayland Dong, Samantha Rawlings</i>	
<b>INTERNATIONAL PROPOSAL FOR AN ACOUSTIC CLASSIFICATION SCHEME FOR DWELLINGS - BACKGROUND AND PERSPECTIVES</b> .....	1414
<i>Birgit Rasmussen</i>	
<b>CLASSIFICATION SCHEME OF FLOOR IMPACT SOUNDS WITH THE STANDARD RUBBER BALL IN DWELLINGS</b> .....	1422
<i>Hiroshi Sato, Junichi Yoshimura</i>	
<b>A NEW APPROACH TO BUILDING ACOUSTICS REGULATION IN CANADA</b> .....	1429
<i>Berndt Zeitler, Stefan Schoenwald, David Quirt</i>	

## **D2B VEHICLE NOISE VIBRATION AND HARSHNESS (NVH)**

<b>THE INFLUENCE OF VIBRATIONS ON VEHICLE OCCUPANT FATIGUE</b> .....	1437
<i>Mohd Amzar Azizan, Mohammad Fard</i>	

<b>AUTOMOBILE POWER-TRAIN—COUPLING VIBRATION ANALYSIS ON VEHICLE SYSTEM</b> .....	1448
<i>Heng Ding, Weihua Zhang, Wuwei Chen, Peicheng Shi</i>	
<b>STUDY ON STARTUP VIBRATION OF A VEHICLE WITH 3-CYLINDER ENGINE</b> .....	1456
<i>Jianghua Fu, Jian Pang, Chengtai Hu, Xiaomin Xu, Renwei Deng, Xiaohong Kuang</i>	
<b>THE TRANSMISSION OF VIBRATION AT VARIOUS LOCATIONS ON VEHICLE SEAT TO SEATED OCCUPANT BODY</b> .....	1467
<i>Ratchaphon Ittianuwat, Mohammad Fard, Kazuhito Kato</i>	
<b>DEVELOPING POWERTRAIN MOUNTING SYSTEMS IN THE VIRTUAL ENGINEERING WORLD USING A FULL VEHICLE NVH SIMULATOR</b> .....	1479
<i>Paul Kennings, Jonathan Layfield, Marco Tarabra, David Fothergill, Frank Syred, Graham Franks</i>	
<b>ROAD NOISE SENSITIVITY ANALYSIS WITH RESPECT TO SUSPENSION GEOMETRY</b> .....	1489
<i>Fumihiko Kosaka, Hiroaki Mizuno, Tsuyoshi Inoue, Kentaro Takagi</i>	

#### **D4C PAVEMENT MODELLING AND MEASUREMENT TECHNIQUES**

<b>ON THE SOUND ABSORPTION COEFFICIENT OF POROUS ASPHALT PAVEMENTS FOR OBLIQUE INCIDENT SOUND WAVES</b> .....	1499
<i>Mariëke Bezemer-Krijnen, Ysbrand H. Wijnant, Andre De Boer, Dirk Bekke</i>	
<b>COMPARATIVE ASSESSMENT FOR LOW-NOISE PAVEMENTS BY MEANS OF THE ISO 11819 AND THE OBSI</b> .....	1506
<i>Marc Buret, James McIntosh, Cassandra Simpson</i>	
<b>ODSURF: OPTIMIZED LOW NOISE URBAN ROAD SURFACES</b> .....	1515
<i>Michel Berengier, Peter Johann Gusia</i>	
<b>INFLUENCE OF SURFACE TEXTURES OF ROAD MARKINGS ON TYRE/ROAD MARKING NOISE</b> .....	1525
<i>Annette Gail, Wolfram Bartolomaeus, Marek Zoller</i>	
<b>ASSESSING THE ACOUSTIC PROPERTIES OF AUDIO-TACTILE ROAD MARKINGS</b> .....	1535
<i>Luc Goubert, Philippe Debroux, Annette Gil, Marek Zoller, Kristof De Clerck, Lernert Verleyen</i>	

#### **R2 UNDERWATER NOISE MEASUREMENT**

<b>A MODELLING APPROACH TO SPATIAL EXTRAPOLATION OF OCEAN AMBIENT NOISE MEASUREMENTS</b> .....	1545
<i>Kevin D. Heaney</i>	
<b>PATCH NEAR-FIELD ACOUSTICAL HOLOGRAPHY BASED ON VECTOR HYDROPHONE ARRAY</b> .....	1551
<i>Bo Hu, Desen Yang, Shengguo Shi, Jie Shi, Yu Sun</i>	
<b>CHARACTERISING THE ACOUSTIC FOOTPRINT OF AUSTRALIA'S NEW RESEARCH VESSEL RV INVESTIGATOR</b> .....	1557
<i>Rudy Kloser, Tara Martin, Matt Sherlock</i>	
<b>MODELING OCEAN NOISE ON THE GLOBAL SCALE</b> .....	1564
<i>Michael B. Porter, Laurel J. Henderson</i>	
<b>MARINE SOUNDSCAPE ECOLOGY</b> .....	1571
<i>Sydney A. Harris, Craig A. Radford</i>	
<b>USING LOW COST SINGLE-BOARD MICROCONTROLLERS TO RECORD UNDERWATER ACOUSTICAL DATA</b> .....	1580
<i>Ben Travaglione, Andrew Munyard, David Matthews</i>	

#### **S1A SOUNDSCAPE AND ITS DIVERSITY IN HISTORY AND CULTURE**

<b>SOUNDSCAPE STUDY OF URBAN PUBLIC SPACES ALONG THE SEA SHORE</b> .....	1588
<i>Tharangini Kabilan, Anjana Mohan, Keerthika Jayachandran, Kalaiselvi Ramasamy</i>	
<b>ANALYSIS OF SOUNDSCAPE OF SELECTED URBAN PUBLIC PLACES AND ITS IMPACT ON THEIR ASSESSMENT BY USERS</b> .....	1598
<i>Matej Kamenicky</i>	
<b>THE URBAN PARK SOUNDSCAPE IN MOUNTAINOUS CITIES:A CASE STUDY IN CHONGQING</b> .....	1606
<i>Heng Li, Hui Xie, Jian Kang,</i>	

#### **K2B APPLYING BUILDING ENVELOP DESIGN FOR NOISE MITIGATION**

<b>COST REDUCTION OF NOISE TREATMENTS IN THE OIL &amp; GAS INDUSTRY - DESIGN OF NOISE MITIGATION FOR GAS COMPRESSOR STATIONS USING ENGINEERING OPTIMISATION</b> .....	1612
<i>David James Davis</i>	

### **VOLUME 3**

<b>DESIGN FOR NOISE MITIGATION MEASURES FOR PUBLIC HOUSING DEVELOPMENTS IN HONG KONG</b> .....	1622
<i>David Lo, Stephen Yim, Kenneth Leung</i>	

<b>INVESTIGATION OF SOUND INSULATION FOR A SUPPLY AIR WINDOW - FIELD MEASUREMENTS AND OCCUPANT RESPONSE</b> .....	1630
<i>Lars Sommer Sondergaard, Soren Vase Legarth</i>	
<b>TACKLING TRAFFIC NOISE THROUGH PLENUM WINDOWS - AN APPLICATION IN HONG KONG</b> .....	1640
<i>Maurice Yeung, Isaac Ng, John Lam, S. K. Tang, David Lo, David Yeung</i>	

### **T1 REACTION TO AIRCRAFT NOISE**

<b>NEW INSIGHTS INTO PERCEPTION OF AIRCRAFT AND COMMUNITY NOISE EVENTS</b> .....	1644
<i>Keith Adams</i>	
<b>STATED CHOICE VALUATION OF AIRCRAFT NOISE AND OTHER ENVIRONMENTAL EXTERNALITIES AT BANGKOK SUVARNABHUMI AIRPORT</b> .....	1653
<i>Narudh Cheramakara, Abigail Bristow, Lucy Budd, Alberto Zanni</i>	
<b>THE IMPACT OF CIVIL VERSUS MILITARY AIRCRAFT NOISE ON NOISE ANNOYANCE</b> .....	1661
<i>Femke B. Gelderblom, Truls T. Gjostland, Idar L. N. Granoien, Gunnar Taraldsen</i>	
<b>RELAXATIONS OF OPERATING RESTRICTIONS ON NOISE AND RESIDENT'S REACTION AT NARITA INTERNATIONAL AIRPORT</b> .....	1671
<i>Saburo Ogata, Naoaki Shinohara</i>	
<b>THE NEXT GENERATION OF SUPPLEMENTARY AVIATION NOISE METRICS AND THEIR USE IN MANAGING AVIATION NOISE</b> .....	1681
<i>Nicole Porter, Andy Knowles, Nick Fisher, Dave Southgate</i>	
<b>THE ECONOMIC VALUE OF AIRCRAFT NOISE EFFECTS: A UK PERSPECTIVE</b> .....	1691
<i>Diana Sanchez, Bernard Berry, Andy Knowles</i>	
<b>CONTINUOUS DESCENT APPROACH (CDA) COMPARED TO REGULAR DESCENT PROCEDURES: LESS ANNOYING?</b> .....	1703
<i>Kim White, Michael Arntzen, Adelbert Bronkhorst, Martijn Meeter</i>	

### **L2 SIGNAL PROCESSING FOR ACTIVE CONTROL**

<b>ADAPTING AN MSE CONTROLLER FOR ACTIVE NOISE CONTROL TO NONSTATIONARY NOISE STATISTICS</b> .....	1707
<i>Annea Barkefors, Mikael Sternad</i>	
<b>MULTIVARIABLE CONTROL OF TONAL DISTURBANCES USING MINIMIZATION OF THE MAXIMUM ERROR SIGNAL THROUGH ADAPTIVE ERROR SIGNAL WEIGHTING</b> .....	1716
<i>Jordan Cheer, Steve Daley</i>	
<b>ADAPTIVE FEEDBACK NOISE CONTROL WITH LEAKY FELMS ALGORITHM</b> .....	1725
<i>Kai Chen, Roshun Paurobally, Jie Pan, Xiaojun Qiu</i>	
<b>ACTIVE SOUND DESIGN FOR A PASSENGER CAR BASED ON ADAPTIVE ORDER FILTER</b> .....	1735
<i>Sang Kwon Lee, Seung Min Lee, In Deuk Kang, Taejin Shin</i>	
<b>A MODIFIED FREQUENCY DOMAIN ADAPTIVE FILTER FOR ACTIVE NOISE CONTROL</b> .....	1739
<i>Jing Lu, Ningrong Li, Ning Han</i>	
<b>ACTIVE CONTROL OF VEHICLE POWERTRAIN NOISE USING INVERSE MODEL LMS ALGORITHM</b> .....	1747
<i>Guohua Sun, Tao Feng, Mingfeng Li, Ji Xu, Teik C. Lim</i>	

### **T8B SOUND QUALITY**

<b>STEREO OR BINAURAL HEADPHONES FOR SOUND LOCATION</b> .....	1754
<i>Graeme J. Cohen</i>	
<b>NOISE REDUCTION MEASURES OF NOISY KITCHEN DEVICES AND EVIDENCE OF THEIR IMPROVEMENT BY AN OBJECTIVE ANALYSIS OF SPONTANEOUS EEG MEASUREMENTS</b> .....	1758
<i>Martin Fischer, Bruno Spessert, Edeltraut Emmerich</i>	
<b>EFFECT ON CAR INTERIOR SOUND QUALITY ACCORDING TO THE VARIATION OF NOISY COMPONENTS OF TIRE-PATTERN NOISE</b> .....	1766
<i>Sung-Hwan Shin, Takeo Hashimoto, Shigeko Hatano</i>	
<b>RHYTHMIC CONSTANT PITCH TIME STRETCHING FOR DIGITAL AUDIO</b> .....	1774
<i>Brendan Trevorrow</i>	
<b>THE INFLUENCE OF THE SENSATION OF RHYTHM ON COMFORT AND PRODUCTIVITY</b> .....	1781
<i>Masao Yamaguchi, Kazuto Hanawa, Takeshi Toi</i>	

### **C2B AIRFRAME/FLOW-INDUCED-NOISE**

<b>ATTENUATION OF ACOUSTIC RESONANCES IN AN INCLINED OPEN CAVITY USING MICRO PERFORATED PANELS</b> .....	1790
<i>Cristobal Gonzalez Diaz, Santiago Ortiz, Pedro Cobo</i>	
<b>SELF-NOISE PREDICTION OF A SHARP-EDGED STRUT USING A QUASI-PERIODIC CFD-BEM TECHNIQUE</b> .....	1798
<i>Mahmoud Karimi, Paul Croaker, Nicole Kessissoglou, Con Doolan, Steffen Marburg</i>	

<b>ESTIMATION OF PRESSURE FLUCTUATIONS IN A TURBULENT BOUNDARY LAYER BASED ON VIBRO-ELASTIC MODELS</b> .....	1808
<i>Ian Macgillivray, Alex Skvortsov</i>	
<b>EFFECTS OF HYDRODYNAMIC AND ACOUSTIC PRESSURE FLUCTUATIONS ON TRANSMITTED SOUND IN WAVENUMBER-FREQUENCY DOMAIN</b> .....	1815
<i>Yasuhiko Okutsu, Naoki Hamamoto</i>	
<b>THE EFFECT OF FLOW ON THE NATURAL FREQUENCIES OF A FLEXIBLE PLATE</b> .....	1825
<i>Herwig Peters, Li Chen, Nicole Kessissoglou</i>	
<b>THE FLOW-INDUCED NOISE OF SQUARE FINITE WALL-MOUNTED CYLINDERS IN DIFFERENT BOUNDARY LAYERS</b> .....	1832
<i>Ric Porteous, Danielle Moreau, Con Doolan, Zebb Prime</i>	

## **U1 TECHNICAL EXPERTISE IN NOISE ASSESSMENT AND MANAGEMENT**

<b>NEW ZEALAND CODE OF PRACTICE FOR RETAIL FIREWORKS - REVISION OF THE NOISE TESTING PROVISIONS: EXPERIENCES AND FINDINGS</b> .....	1841
<i>Wyatt Page, Stuart McLaren</i>	
<b>DISCUSSION ON NOISE CONTROL AT WORKPLACES</b> .....	1848
<i>Rauno Paakonen, Kari Saine, Saara Seppanen, Tapani Ollila</i>	
<b>COMPARATIVE STUDY OF THE PERFORMANCE OF SMARTPHONE-BASED SOUND LEVEL METER APPS, WITH AND WITHOUT THE APPLICATION OF A 1/2 IEC-61094-4 WORKING STANDARD MICROPHONE, TO IEC-61672 STANDARD METERING EQUIPMENT IN THE DETECTION OF VARIOUS PROBLEMATIC WORKPLACE NOISE ENVIRONMENTS</b> .....	1855
<i>David P. Robinson, James Tingay</i>	
<b>PROTECTION OF WORKERS FROM RISKS CAUSED BY LOUD SOUND FIELDS. COMPARISON BETWEEN THE EUROPEAN AND THE UNITED STATES STANDARDS</b> .....	1865
<i>Alessandro Sabato, Adolfo Sabato, Alfredo Reda</i>	
<b>A PRACTICAL COMPARISON OF OCCUPATIONAL NOISE STANDARDS</b> .....	1875
<i>James Tingay, David Robinson</i>	

## **H2B OUTDOOR SOUND PROPAGATION**

<b>FIELD NOISE MEASUREMENT IN THE HUGE INDUSTRIAL PLANTS FOR ACCURATE PREDICTION</b> .....	1883
<i>Takahiro Hida</i>	
<b>DETERMINING THE TRANSMISSION LOSS OF APERTURES ABOVE THE PLANE WAVE CUTOFF FREQUENCY</b> .....	1889
<i>Jiazhu Li, Jian Chen, Can Li</i>	
<b>GROUND EFFECT DUE TO PERIODIC AND RESONANT ROUGHNESS STRUCTURES</b> .....	1898
<i>Ho-Chul Shin, Shahram Taherzadeh, Keith Attenborough</i>	
<b>ACOUSTIC YAGI-UDA ANTENNA USING RESONANCE TUBES</b> .....	1906
<i>Yuki Tamura, Kohei Yatabe, Yasuhiro Ouchi, Yasuhiro Oikawa, Yoshio Tamasaki</i>	
<b>DETERMINATION OF NOISE DAMPING BY FORESTS</b> .....	1913
<i>Mattias Trimpop, Peter Mann</i>	

## **Q2D NUMERICAL METHODS IN VIBRO-ACOUSTICS**

<b>IMPULSIVE RESPONSE ANALYSIS USING TRANSIENT ENERGY DISTRIBUTION ANALYSIS</b> .....	1920
<i>Shohei Chida, Hiroki Nakamura, Toru Yamazaki</i>	
<b>VIBRATION TRANSFER ANALYSIS BASED ON CHARACTERIZATION OF VIBRATION ENERGY DISSIPATION</b> .....	1930
<i>Atsushi Kitahara, Takuya Yoshimura</i>	
<b>VIBRATION ANALYSIS OF A STEAM TURBINE BLADE</b> .....	1940
<i>R. S. Mohan, S. Sarkar, A. S. Sekhar</i>	
<b>IMPROVEMENT OF EXPERIMENTAL SEA MODEL ACCURACY USING INDEPENDENT COMPONENT ANALYSIS</b> .....	1950
<i>Hiroki Nakamura, Shohei Chida, Toru Yamazaki</i>	
<b>THE MODELING AND FREE VIBRATION ANALYSIS OF COUPLED PLATES OF VARIOUS TYPES</b> .....	1959
<i>Shuangxia Shi, Guoyong Jin, Mingfei Chen</i>	
<b>NUMERICAL NOISE GENERATION IN MODELLED BEARING VIBRATION SIGNALS</b> .....	1969
<i>Sarabjeet Singh, Carl Q. Howard, Colin H. Hansen, Uwe Kopke</i>	
<b>FREE VIBRATIONS OF A BOX-TYPE STRUCTURE BY PLATES WITH ARBITRARY BOUNDARY CONDITIONS</b> .....	1979
<i>Kaipeng Zhang, Tao Zhang, Han Wu, Dongyan Shi</i>	

## **B1 FAN AND DUCT NOISE**

<b>STANDARD, QUIET AND SUPER QUIET - THE MODELLING OF FLOW AND THE REDUCTION OF TURBULENCES</b> .....	1988
<i>S. C. Bradwell</i>	
<b>STALL DETECTION USING NEAR-FIELD LOW FREQUENCY AND PRESSURE MODULATION IN TURBOMACHINES</b> .....	2008
<i>Alessandro Corsini, Sara Feudo, Cecilia Tortora, Graziano Ullucci</i>	
<b>FAN DUCT NOISE ELIMINATION BY THE USE OF HELICOIDAL RESONATORS</b> .....	2018
<i>Wojciech Lapka</i>	
<b>LOCAL IMPROVEMENT OF FLOW AND NOISE PERFORMANCES OF AXIAL-FLOW FANS IN A HOUSEHOLD REFRIGERATOR</b> .....	2026
<i>Seong-Hun Kim, Seung Heo, Cheolung Cheong, Taehoon Kim</i>	

## **N4B CLASSROOM ACOUSTICS**

<b>VOCAL PROBLEMS FOR TEACHERS AND SCHOOL ACOUSTICS - A FIELD STUDY</b> .....	2033
<i>Nick Durup, Bridget Shield, Stephen Dance, Rory Sullivan</i>	
<b>CLASSROOMS AND VOICE RECOGNITION APPLICATIONS IN A FOREIGN LANGUAGE TEACHING</b> .....	2039
<i>Yuichi Ono, Manabu Ishihara, Akio Onishi, Mitsuo Yamashiro</i>	

## **N2 HEALTHCARE FACILITY ACOUSTICS**

<b>ACOUSTIC DESIGN GUIDELINES FOR DEMENTIA CARE FACILITIES</b> .....	2047
<i>Michael James Hayne, Richard Fleming</i>	
<b>A SUMMARY OF THE 2014 FGI AND SOUND &amp; VIBRATION GUIDELINES FOR HEALTHCARE FACILITIES</b> .....	2057
<i>Kenric Van Wyk, Daniel Horan, Kristen Murphy</i>	
<b>REVIEW OF DESIGN APPROACHES TO ACOUSTICS IN AUSTRALIAN HOSPITALS</b> .....	2067
<i>Luke Zootjens, Tom Cockings</i>	

## **N7B ACOUSTIC CRITERIA IN REGULATIONS AND CLASSIFICATION SCHEMES FOR BUILDINGS**

<b>EXTENSIONS OF EN 12354 VIBRATION REDUCTION INDEX EXPRESSIONS BY MEANS OF FEM CALCULATIONS</b> .....	2078
<i>Charlotte Crispin, Lieven De Geetere, Bart Ingelaere</i>	
<b>PSYCHOACOUSTICAL EVALUATION OF HEAVYWEIGHT FLOOR IMPACT SOUNDS IN APARTMENT BUILDINGS</b> .....	2088
<i>Jin Yong Jeon, Seong Min Oh</i>	
<b>A NEW METRIC TO QUANTIFY AND EVALUATE LOW FREQUENCY IMPACT NOISE</b> .....	2093
<i>John J. Loverde, Wayland Dong</i>	
<b>DETERMINATION OF VIBRATION ACCEPTABILITY AND ANNOYANCE DESIGN INDICATORS FOR HUMAN RESPONSE TO WOODEN-FLOOR VIBRATIONS</b> .....	2098
<i>Juan Negreira, Arnaud Trolle, Kirsi Jarnero, Lars-Goran Sjobqvist, Delphine Bard</i>	
<b>OPEN PLAN OFFICES - CLASSIFICATION SCHEME BASED ON ISO 3382-3 PARAMETERS</b> .....	2108
<i>Christian Nocke</i>	

## **D2C VEHICLE NOISE VIBRATION AND HARSHNESS (NVH)**

<b>INDOOR PASS-BY NOISE ENGINEERING: A MOTORBIKE APPLICATION CASE</b> .....	2113
<i>Fabio Bianciardi, Karl Janssens, Mostapha Choukri, Herman Van Der Auweraer</i>	
<b>TARGET SETTING AND SOURCE CONTRIBUTION FOR SOUND QUALITY OF A MOTORCYCLE</b> .....	2121
<i>Ming-Hung Lu, Ming Une Jen</i>	
<b>VEHICLE CHASSIS DECOUPLING CONTROL BASED ON NEURAL NETWORK INVERSE METHOD</b> .....	2131
<i>Jun Yang, Linfeng Zhao, Wuwei Chen, He Huang, Guang Xia</i>	
<b>THE CHARACTERISTIC IDENTIFICATION OF DISC BRAKE SQUEAL BASED ON ENSEMBLE EMPIRICAL MODE DECOMPOSITION</b> .....	2140
<i>Yao Liang, Hiroshi Yamaura</i>	
<b>INSTABILITY PREDICTION OF BRAKE SQUEAL BY NONLINEAR STABILITY ANALYSIS</b> .....	2149
<i>Zhi Zhang, Sebastian Oberst, Joseph C. S. Lai</i>	
<b>MODELLING OF FLUID-STRUCTURE INTERACTIONS IN THE HYDRAULIC CIRCUIT OF PASSIVE INTERCONNECTED SUSPENSIONS</b> .....	2156
<i>Jing Zhao, Nong Zhang, Jin Chen</i>	

## **D6 TYRE/ROAD NOISE – TYRE FACTORS**

<b>TYRE TREAD PATTERN NOISE OPTIMIZATION BY A COUPLED SOURCE-HUMAN PERCEPTION MODEL</b> .....	2165
<i>Dirk Bekke, Ysbrand Wijnant, Andre De Boer, Marieke Bezemer-Krijnen</i>	
<b>AN INVESTIGATION OF THE RELATIONSHIP BETWEEN TEXTURE AND TYRE/ROAD NOISE FOR DIFFERENT TYPES OF ROAD SURFACES AND PASSENGER CAR TYRES</b> .....	2173
<i>Truls Berge, Erlend Magnus Viggen</i>	
<b>A STUDY OF THE TYRE CAVITY RESONANCE AND ITS MITIGATION USING MODAL ANALYSIS METHOD</b> .....	2181
<i>Napasin Chanpong, Zamri Mohammad, Haiqiao Wei, Simon Watkins, Xu Wang</i>	
<b>CHARACTERISATION OF LOW-NOISE TYRES FOR THE ROADS OF HONG KONG</b> .....	2192
<i>Wing-Tat Hung, Randolph Chi-Kin Leung, Yat Ken Lam</i>	
<b>TEMPERATURE INFLUENCE ON TYRE/ROAD NOISE OF SELECTED TYRES</b> .....	2201
<i>Piotr Mioduszewski, Stanislaw Taryma, Ryszard Wozniak</i>	
<b>INFLUENCE OF CIRCUMFERENTIAL TREAD PATTERN STIFFNESS ON TIRE ROAD NOISE GENERATION UNDER DRIVING TORQUE</b> .....	2210
<i>Frank Stalter, Frank Gauterin</i>	
<b>A SIMULATION METHODOLOGY FOR TIRE/ROAD VIBRATION NOISE ANALYSIS</b> .....	2217
<i>Yintao Wei, Xijin Feng, Dabing Xiang, Yalong Chen</i>	

## **R3B UNDERWATER NOISE AND ITS CONTROL**

<b>STUDY ON THE EFFECT OF ALIGNMENT STYLE ON SHAFTING-SHELL COUPLED SYSTEM RADIATED NOISE CAUSED BY PROPELLER FORCE</b> .....	2230
<i>Yipeng Cao, Runze Zhang, Guodong Yang</i>	
<b>UNDERWATER NOISE GENERATED BY MERCHANTS SHIPS IN COASTAL WATERS OF THE GULF OF GDANSK</b> .....	2237
<i>Karol Listewnik</i>	
<b>MODELLING UNDERWATER SHIPPING NOISE IN THE GREAT BARRIER REEF MARINE PARK USING AIS VESSEL TRACK DATA</b> .....	2244
<i>Alexander Macgillivray, Craig McPherson, Geoff McPherson, Jonathan Izett, Jeremy Gosselin, Zizheng Li, David Hannay</i>	
<b>REAL VARIABILITY IN SHIP SYSTEMS' NOISE AND VIBRATION. DESIGN AND THROUGH-LIFE MANAGEMENT IMPLICATIONS FOR UNDERWATER NOISE AND HABITABILITY</b> .....	2254
<i>David James McIntosh</i>	
<b>IS UNDERWATER THERMAL NOISE USEFUL?</b> .....	2264
<i>Mark L. Readhead</i>	
<b>ATTENUATION OF LOW FREQUENCY UNDERWATER NOISE USING ARRAYS OF AIR-FILLED RESONATORS</b> .....	2270
<i>Mark S. Wochner, Kevin M. Lee, Andrew R. McNeese, Preston S. Wilson</i>	

## **S1B SOUNDSCAPE AND ITS DIVERSITY IN HISTORY AND CULTURE**

<b>ON THE STUDY OF EFFECTS OF VIEWS TO WATER SPACE ON NOISE ANNOYANCE PERCEPTIONS AT HOMES</b> .....	2277
<i>T. M. Leung, C. K. Chau, S. K. Tang, L. S. C. Pun</i>	

## **S2 SOUNDSCAPE AND AUDITORY COGNITION**

<b>HOW THE MEANING A PERSON GIVES TO TRANQUILITY COULD AFFECT THE APPRAISAL OF THE URBAN PARK SOUNDSCAPE</b> .....	2285
<i>Dick Botteldooren, Karlo Filipan, Michiel Boes, Bert De Coensel</i>	
<b>STUDIES OF COMBINATION EFFECTS OF SOUND ON BIOLOGY AND COGNITION- INTERDISCIPLINARITY IN ACTION</b> .....	2291
<i>Frans Mossberg</i>	
<b>TEMPORAL FEATURES EXTRACTION FOR THE BINAURAL SOUNDSCAPE SAMPLES</b> .....	2297
<i>Daiwei Wang, Zhiyong Deng, Xinxin Li, Aili Liu</i>	

## **PLENARY KEYNOTE 3**

<b>NOISE AND LOW FREQUENCY NOISE FROM WIND TURBINES</b> .....	2306
<i>Bo Sondergaard</i>	



## **KEYNOTE 4**

<b>THE IMPACT OF BUILDING ACOUSTICS ON SPEECH COMPREHENSION AND STUDENT ACHIEVEMENT</b> .....	2318
<i>Lily M. Wang</i>	

## **M1 METAMATERIAL**

<b>ACOUSTIC METAMATERIAL PANEL COMPOSED OF FUNNEL-SHAPED CELL UNIT HAVING MULTI-BAND NEGATIVE MATERIAL PROPERTIES</b> .....	2326
<i>Sungjin Cho, Boseung Kim, Dongki Min, Jeonghoon Kang, Junhong Park</i>	
<b>TAILORING ACOUSTIC METAMATERIALS TO AEROACOUSTIC APPLICATIONS</b> .....	2330
<i>Umberto Lemma, Michael Carley, Riccardo Pellegrini</i>	
<b>NOISE SHIELDING USING ACTIVE ACOUSTIC METAMATERIALS WITH ELECTRONICALLY TUNABLE ACOUSTIC IMPEDANCE</b> .....	2338
<i>Pavel Mokry, Katelina Steiger, Jan Vaclavik, Pavel Psota, Roman Dolecek, Pavel Marton, Milos Kodejska, Martin Cernik</i>	
<b>A SIMPLE MODEL OF EFFECTIVE ELASTIC PROPERTIES OF MATERIALS WITH INCLUSIONS</b> .....	2347
<i>Alex Skvortsov, Ian Macgillivray</i>	
<b>RANDOM INCIDENCE TRANSMISSION LOSS OF A METAMATERIAL BARRIER SYSTEM</b> .....	2355
<i>Srinivas Varanasi, J. S. Bolton, Thomas Siegmund</i>	

## **G1 WIND TURBINES – EVALUATION AT NEIGHBOURS I**

<b>SPECIAL NOISE CHARACTER IN NOISE FROM WIND FARMS</b> .....	2363
<i>Valeri V. Lenchine, Jonathan Song</i>	
<b>INVESTIGATING THE IMPACTS OF WIND TURBINE NOISE ON QUALITY OF LIFE IN THE AUSTRALIAN CONTEXT: A CASE STUDY APPROACH</b> .....	2371
<i>David McBride, Daniel Shepherd, Robert Thorne</i>	
<b>OUTCOME OF SYSTEMATIC RESEARCH ON WIND TURBINE NOISE IN JAPAN</b> .....	2375
<i>Hideki Tachibana</i>	

## **C3A EU RESEARCH PROJECTS ON AIRCRAFT NOISE**

<b>AFLONEXT - A EUROPEAN CONTRIBUTION TO AIRFRAME NOISE CONTROL</b> .....	2385
<i>Michael Bauer, Alexander Buscher, Michael Pott-Pollenske</i>	
<b>EUROPEAN AVIATION NOISE RESEARCH NETWORK (X-NOISE)</b> .....	2389
<i>Dominique Collin</i>	
<b>OPTIMISATION FOR LOW ENVIRONMENTAL NOISE IMPACT AIRCRAFT - OPENAIR</b> .....	2395
<i>Eugene Kors, Dominique Colling</i>	
<b>FUNDAMENTAL INDIRECT NOISE GENERATION BY INTERACTIONS BETWEEN ENTROPY, VORTICITY AND ACOUSTIC WAVES IN THE CONTEXT OF AERO ENGINE APPLICATIONS</b> .....	2403
<i>Wolfram Christoph Ullrich, Moritz Schulze, Thomas Sattelmayer</i>	

## **A3A NOISE POLICY**

<b>THE EVOLUTION OF NOISE POLICY AND NOISE MANAGEMENT IN ENGLAND DURING THE LIFE OF THE UK'S INSTITUTE OF ACOUSTICS</b> .....	2413
<i>Colin Grimwood, Stephen Turner</i>	
<b>PROGRESS ON ENVIRONMENTAL NOISE POLICIES FROM 2008-2013 IN ASIA AND THE WORLD</b> .....	2423
<i>Dietrich H. Schwela, Lawrence S. Finegold, Truls Gjestland</i>	
<b>CHALLENGES IN PLANNING AGAINST ROAD TRAFFIC NOISE IN HONG KONG</b> .....	2435
<i>Marco Wu, Isaac Ng, W. K. Szeto, Maurice Yeung</i>	

## **VOLUME 4**

<b>A METRIC MATRIX ESTABLISHMENT FOR CASES STUDIES ON THE EFFECTIVENESS OF THE KEY ENVIRONMENTAL PROTECTION POLICIES FOR TRANSPORTATION POLLUTION CONTROL</b> .....	2440
<i>Jiping Zhang, Paul D. Schomer, Marc Buret, Lei Zhang, Dian Wu, James Boyle</i>	

## **H3 NOISE MAPPING PREDICTION TOOLS**

<b>A LOW-BUDGET ROAD TRAFFIC NOISE MODEL FOR INDIVIDUAL BUILDING EVALUATION - A CASE STUDY IN WESTERN AUSTRALIA</b> .....	2449
<i>Martin Felder, Marion Burgess, Jorg Arnold</i>	
<b>LESSONS FROM ROUND 2 NOISE MAPPING IN ENGLAND</b> .....	2459
<i>Peter Hepworth, Simon Shilton, Nigel Jones, Matthew Burdett</i>	

<b>A WEB-BASED APPROACH FOR THE EVALUATION OF ACOUSTIC PERFORMANCE OF DEVELOPMENT DESIGNS AND ASSESSMENT OF PERFORMANCE OF MITIGATION ELEMENTS</b> .....	2462
<i>Christopher F. J. Hoar, Kin Man Wong, Noor Azlan Mohammed Noor</i>	
<b>FAST TRAFFIC NOISE MAPPING OF CITIES USING THE GRAPHICS PROCESSING UNIT OF A PERSONAL COMPUTER</b> .....	2470
<i>Erik M. Salomons, Han Zhou, Walter J. A. Lohman</i>	
<b>STATISTICAL METHOD FOR AN ASSESSMENT OF ACTIONS AGAINST NOISE AND AIR POLLUTION IN ORDER TO COMPARE THE TOTAL IMPROVEMENT IN AN INVESTIGATION AREA</b> .....	2480
<i>Frank-Christian Zacharias, Rainer Kunka, Chris Hoar</i>	

## **Q2E NUMERICAL METHODS IN VIBRO-ACOUSTICS**

<b>DISPERSION DIAGRAMS OF A WATER-LOADED CYLINDRICAL SHELL OBTAINED FROM THE STRUCTURAL AND ACOUSTIC RESPONSES OF THE SENSOR ARRAY ALONG THE SHELL</b> .....	2491
<i>B. K. Jung, J. Ryue, C. S. Hong, W. B. Jeong, K. K. Shin</i>	
<b>ACOUSTIC FORCING OF FLEXURAL WAVES AND ACOUSTIC FIELDS FOR A THIN PLATE IN A FLUID</b> .....	2499
<i>Darryl McMahon</i>	
<b>ACOUSTIC AND FLEXURAL WAVE ENERGY CONSERVATION FOR A THIN PLATE IN A FLUID</b> .....	2509
<i>Darryl McMahon</i>	

## **Q6A INVERSE APPROACHES IN VIBRO-ACOUSTICS**

<b>SEPARATION OF NON-STATIONARY SOUND FIELDS USING SINGLE LAYER PRESSURE-VELOCITY MEASUREMENTS</b> .....	2518
<i>Chuan-Xing Bi, Lin Geng, Xiao-Zheng Zhang</i>	
<b>COMPARISON OF PATCH ACOUSTIC HOLOGRAPHY METHODS FOR CONFINED SPACE</b> .....	2524
<i>Zdenek Havranek, Petr Benes, Stanislav Klusacek</i>	
<b>RESEARCH ON EIGENFREQUENCY SHIFTS DUE TO CRACKS IN CYLINDRICAL STRUCTURES AND THE APPLICATION IN NON-DESTRUCTIVE TESTING</b> .....	2534
<i>Martin Stache, Marcus Guettler, Steffen Marburg</i>	
<b>APPROXIMATE MODEL OF SOUND SOURCE IN CONSIDERATION OF EVANESCENT WAVES IN FAR-FIELD ACOUSTICAL HOLOGRAPHY</b> .....	2544
<i>Ziteng Wang, Diange Yang, Feng Miao, Rujia Wang, Junjie Wen, Xiaomin Lian</i>	
<b>VIBRATION RENDERING ON A THIN PLATE BY ACTUATOR ARRAY ON THE BOUNDARY</b> .....	2554
<i>Jung-Han Woo, Jeong-Guon Ih</i>	

## **N6A NOISE IN LIGHTWEIGHT STRUCTURES**

<b>INFLUENCE OF DESIGN AND LEAKAGES OF THE WINDOW-WALL CONNECTION ON THE SOUND INSULATION</b> .....	2559
<i>Heinz Ferk, Blasius Buchegger, Marlon Meissnitzer</i>	
<b>A MODEL BASED ON LOUDNESS LEVEL TO DESCRIBE AIRBORNE SOUND INSULATION</b> .....	2570
<i>Reinhard O. Neubauer, Jian Kang</i>	
<b>IMPROVEMENT OF SOUND INSULATION PERFORMANCE AT LOW FREQUENCIES BY SEVERAL FIBROUS ABSORBERS IN LIGHTWEIGHT DOUBLE LEAF PARTITION</b> .....	2580
<i>Satoshi Sugie, Junich Yoshimura, Teruo Iwase</i>	
<b>PARAMETRIC STUDY OF DIRECT AIRBORNE INSULATION OF WOOD STUD WALLS IN MIDRISE CONSTRUCTION</b> .....	2588
<i>Berndt Zeitler, Stefan Schoenwald, Frances King</i>	

## **N8C ROOM ACOUSTICS**

<b>A COHERENT IMAGE SOURCE METHOD FOR SOUND PREDICTION IN LONG SPACES WITH A SOUND ABSORBENT CEILING</b> .....	2596
<i>Hequn Min, Yan Chen, Xiaojun Qiu</i>	
<b>A TRIAL ON CALCULATING THE EQUIVALENT REFLECTION COEFFICIENT BY ACOUSTIC DISTANCE MEASUREMENT METHOD BASED ON PHASE INTERFERENCE IN THE ACTUAL SOUND ACTUAL FIELD</b> .....	2605
<i>Noboru Nakasako, Yuma Neki, Masato Nakayama, Toshihiro Shinohara, Tetsuji Uebo</i>	
<b>ABSORPTION MODELING WITH ENSEMBLE AVERAGED IMPEDANCE FOR WAVE-BASED ROOM ACOUSTICS SIMULATIONS</b> .....	2613
<i>Toru Otsuru, Reiji Tomiku, Takeshi Okuzono</i>	
<b>A TECHNIQUE BASED ON THE EQUIVALENT SOURCE METHOD FOR MEASURING THE SURFACE IMPEDANCE AND REFLECTION COEFFICIENT OF A LOCALLY REACTING MATERIAL</b> .....	2620
<i>Yong-Bin Zhang, Wang-Lin Lin, Chuan-Xing Bi</i>	

## **D2D VEHICLE NOISE VIBRATION AND HARSHNESS (NVH)**

<b>VEHICLE NOISE FUNCTIONAL PERFORMANCE INDICATORS USING TIRE SOUND INTENSITY</b> .....	2628
<i>Paul Donovan, Carrie Janello</i>	
<b>VERIFICATION OF CONTRIBUTION SEPARATION TECHNIQUE FOR VEHICLE INTERIOR NOISE USING ONLY RESPONSE SIGNALS</b> .....	2641
<i>Tomohiro Hirano, Junji Yoshida</i>	
<b>DEVELOPMENT OF A PROTOTYPE SYSTEM TO EVALUATE OF CONTRIBUTION RATE OF EACH NOISE SOURCE IN ROAD TRAFFIC NOISE</b> .....	2649
<i>Hiroyuki Houzu, Ichiro Sakamoto, Takahiro Nishi, Masao Ishihama, Katsumi Sawatari</i>	
<b>MECHANISM OF NOISE GENERATION ON OUTER ROTOR MOTOR</b> .....	2655
<i>Kazumasa Ikeda, Junichi Semura, Tsukasa Ohzawa</i>	
<b>PARAMETER QUANTIFICATION FOR EVALUATION OF VEHICLE'S IMPULSIVE BSR NOISE</b> .....	2664
<i>Sinyeob Lee, Yunsang Kwak, Boseung Kim, Jongho Lee, Junhong Park</i>	

## **D8A MOTOR VEHICLE NOISE – POLICY AND REGULATION**

<b>THE DUTCH ROAD NOISE MITIGATION PROGRAM</b> .....	2667
<i>Nico Faber</i>	
<b>VALUE FOR MONEY IN ROAD TRAFFIC NOISE ABATEMENT</b> .....	2679
<i>Ingunn Milford, Sigve Jarl Aaseboe, Kjell Strommer</i>	
<b>THE DANISH NATIONAL ROAD NOISE STRATEGY</b> .....	2689
<i>Frank Pedersen, Brian Kristensen</i>	
<b>THE SWISS WAY TO SILENT ROADS</b> .....	2693
<i>Urs Walker</i>	

## **R4 DETECTION, LOCALISATION AND CLASSIFICATION OF SOURCES**

<b>PERFORMANCE OF TIME DOMAIN AND TIME-FREQUENCY DOMAIN ADAPTIVE BEAMFORMERS WITH MOVING SOUND SOURCES</b> .....	2701
<i>Chaoying Bao</i>	
<b>APPLICATION OF THE VIRTUAL TIME-REVERSAL TECHNIQUE TO TRANSIENT SOURCES LOCALIZATION IN COMPLEX IMMERSED STRUCTURES</b> .....	2709
<i>Thomas Leissing, Christian Audoly, Jean-Louis Guyader, Guillaume Guyader, Quentin Buisson, Jean-Louis Morange</i>	
<b>ADVANCED SIGNAL PROCESSING METHODS FOR THE ANALYSIS OF TRANSIENT RADIATED NOISE FROM SUBMARINES</b> .....	2718
<i>Thomas Leissing, Christian Audoly, Helene Lachambre, Guillaume Stempfjel</i>	
<b>CROSS CORRELATION MATCHED FIELD LOCALIZATION FOR UNKNOWN EMITTED SIGNAL WAVEFORM USING TWO-HYDROPHONE</b> .....	2728
<i>Shuai Yao, Kun Li, Shiliang Fang</i>	

## **T2A EFFECTS OF NOISE ON HUMANS**

<b>COMBINED EFFECTS OF LOW FREQUENCY VERTICAL VIBRATION AND NOISE ON WHOLE-BODY VIBRATION SENSATION</b> .....	2736
<i>Hiroshi Matsuda, Nobuo Machida</i>	
<b>VIBRATION PROPERTIES OF HAND-ARM SYSTEM WHILE HOLDING A GRIP</b> .....	2742
<i>Masashi Kuwada, Takuya Yoshimura, Yasuaki Tsurumi, Daisuke Yamada</i>	
<b>ASSESSMENT OF NOISE-INDUCED ANNOYANCE BY TONES IN NOISE FROM BUILDING MECHANICAL SYSTEMS</b> .....	2752
<i>Joonhee Lee, Lily M. Wang</i>	
<b>EFFECTS OF ROOM ACOUSTICS ON COMPREHENSION OF FOREIGN-ACCENTED SPEECH BY NATIVE AND NON-NATIVE ENGLISH-SPEAKING LISTENERS</b> .....	2758
<i>Zhao Peng, Kristin E. Hanna, Brenna B. Boyd, Lily M. Wang</i>	

## **E3 RAILWAY WHEEL AND RAIL NOISE**

<b>CURVE SQUEAL: CAUSES, TREATMENTS AND RESULTS</b> .....	2765
<i>David Hanson, Jiangdon Jiang, Bruce Dowdell, Richard Dwight</i>	
<b>BEARING DEFECT SIZE ESTIMATION FOR EXTENDED RACEWAY DEFECTS</b> .....	2773
<i>Dick Petersen, Carl Howard</i>	
<b>ACOUSTIC RAIL GRINDING - MEASURES OF LONG TERM EFFECTIVENESS: EPPING TO CHATSWOOD RAIL LINK CASE STUDY</b> .....	2783
<i>Serfe Vegh, Radek Kochanowski, Briony Cro</i>	

## **E43 RAIL ACOUSTICS POLICY**

<b>COMPARISON OF KILDE AND NORD2000 RAIL NOISE PREDICTION METHODOLOGIES</b> .....	2793
<i>Simon De Lisle, Kym Burgemeister</i>	
<b>A SIMPLIFIED APPROACH FOR EVALUATING NOISE IMPACT FROM HIGH-SPEED LINES</b> .....	2803
<i>Xuetao Zhang</i>	

## **T7 LOUDNESS AND OTHER PSYCHO-ACOUSTICAL PARAMETERS**

<b>DEVELOPMENT OF A NEW LOUDNESS MODEL IN CONSIDERATION OF AUDIO-VISUAL INTERACTION</b> .....	2810
<i>Kai Aizawa, Takashi Kamogawa, Akihiko Arimitsu, Takeshi Toi</i>	
<b>NOISE EVALUATION BASED ON LOUDNESS-PERCEPTION CHARACTERISTICS OF OLDER ADULTS</b> .....	2820
<i>Kenji Kurakata, Tazu Mizunami</i>	
<b>LOUDNESS USING A THRESHOLD CORRECTION FACTOR</b> .....	2827
<i>Colin Novak, Helen Ule, Robert Gasper</i>	
<b>MEASUREMENT OF ATTENTION TO AUDITORY SIGNAL IN NOISY ENVIRONMENT</b> .....	2836
<i>Hiroshi Sato</i>	
<b>IMPROVEMENTS IN CALCULATING THE LOUDNESS OF TIME VARYING SOUNDS</b> .....	2843
<i>Roland Sottek</i>	

## **M2 NANOMATERIALS IN ACOUSTICS**

<b>THERMOPHONES USING CARBON NANOTUBES AND ALTERNATIVE NANOSTRUCTURES FOR HIGH POWER SOUND GENERATION AND NOISE CANCELLATION</b> .....	2850
<i>Aliev, Ali E</i>	
<b>ACOUSTIC ABSORPTION BEHAVIOUR OF CARBON NANOTUBE ARRAYS</b> .....	2860
<i>Md Ayub, Anthony C. Zhander, Carl Q. Howard, Benjamin S. Callolato, Vesselin N. Shanov, Noe T. Alvarez, David M. Huang</i>	
<b>IMPROVING SOUND ABSORPTION BANDWIDTH OF MICRO-PERFORATED PANEL BY ADDING POROUS MATERIALS</b> .....	2870
<i>Dengke Li, Daoqing Chang, Bilong Liu, Jing Tian</i>	

## **G2 MEASUREMENT OF WIND TURBINE NOISE**

<b>WIND TURBINE NOISE MEASUREMENTS - HOW ARE RESULTS INFLUENCED BY DIFFERENT METHODS OF DERIVING WIND SPEED?</b> .....	2876
<i>Sylvia Broneske</i>	
<b>WIND TURBINE SOUND - METRIC AND GUIDELINES</b> .....	2886
<i>Conny Larrson, Olog Ohlun</i>	
<b>CORRELATION OF AMPLITUDE MODULATION TO INFLOW CHARACTERISTICS</b> .....	2894
<i>Helge Aa. Madsen, Frank Bertagnolio, Andreas Fischer, Christian Bak</i>	
<b>AN INVESTIGATION OF DIFFERENT SECONDARY NOISE WIND SCREEN DESIGNS FOR WIND TURBINE NOISE APPLICATIONS</b> .....	2904
<i>Colin Novak, Anders Sjostrom, Helen Ule, Delphine Bard, Goran Sandberg</i>	

## **C3B EU RESEARCH PROJECTS ON AIRCRAFT NOISE**

<b>COSMA – A EUROPEAN APPROACH ON AIRCRAFT NOISE ANNOYANCE RESEARCH</b> .....	2913
<i>Michael Bauer, Dominique Collin, Umberto Iemma, Karl Janssens, Ferenc Marki, Uwe Muller</i>	
<b>MULTI-OBJECTIVE OPTIMIZATION OF TAKEOFF AND LANDING PROCEDURES: LEVEL ABATEMENT VS QUALITY IMPROVEMENT OF AIRCRAFT NOISE</b> .....	2925
<i>Umberto Iemma, Lorenzo Burghignoli, Francesco Centracchio, Valerio Galluzzi</i>	
<b>IDEALVENT: CHARACTERIZATION OF INSTALLATION EFFECTS IN AIRCRAFT ENVIRONMENTAL CONTROL SYSTEMS</b> .....	2934
<i>Christophe Schram, Korcan Kucukcoksun, Julien Christophe, Nicolas Van De Wyer</i>	
<b>NINHA: NOISE IMPACT OF AIRCRAFT WITH NOVEL ENGINE CONFIGURATIONS IN MID- TO HIGH ALTITUDE OPERATIONS</b> .....	2941
<i>Nico Van Oosten, Dominique Collin</i>	

## **A3B NOISE POLICY**

<b>CONTROL OF NOISE FROM PUBLIC ENTERTAINMENT ACTIVITIES IN HONG KONG</b> .....	2951
<i>Kwun Ting Kwok, Kin Wui Cheng</i>	
<b>NEW TECHNIQUES TO DETERMINE SPECIFIC NOISE FOR INCREASING THE EFFECTIVENESS OF CONTINUOUS UNATTENDED NOISE MONITORING SYSTEMS</b> .....	2956
<i>Douglas Manvell, Phil Stollery</i>	

<b>LIVE MUSIC AND THE 'AGENT OF CHANGE' PRINCIPLE</b> .....	2964
<i>Sean McArdle, Gillian Lee, Elizabeth Hui</i>	
<b>CONTINUOUS NOISE MONITORING NETWORK DESIGN: AN END USER PERSPECTIVE</b> .....	2971
<i>Clayton James Sparke</i>	
<b>RESIDENTIAL ACOUSTIC AMENITY IN 'VIBRANT' MIXED USE AREAS</b> .....	2981
<i>Glenn Robert Wheatley</i>	

### **Q2F NUMERICAL METHODS IN VIBRO-ACOUSTICS**

<b>STUDY ON AERO-ACOUSTIC STRUCTURAL INTERACTIONS IN FAN-DUCTED SYSTEM</b> .....	2991
<i>Yan-Kei Chiang, Yat-Sze Choy, Li Cheng, Shiu-Keung Tang</i>	
<b>TRANSFER-MATRIX-BASED APPROACH FOR AN EIGENVALUE PROBLEM OF A COUPLED RECTANGULAR CAVITY</b> .....	3001
<i>Hiroyuki Iwamoto, Nobuo Tanaka</i>	
<b>MODAL CONTRIBUTIONS TO THE ACOUSTIC RESPONSES OF FLUID-LOADED SHELLS</b> .....	3007
<i>Yegao Qu, Hongxing Hua, Herwig Peters, Nicole Kississoglou</i>	
<b>SOUND TRANSMISSION BETWEEN ROOMS COUPLED THROUGH PARTITION WITH ELASTICALLY RESTRAINED EDGES</b> .....	3017
<i>Yifei Zhang, Jingtao Du, Yang Liu, Tiejun Yang, Zhigang Liu</i>	

### **INVERSE APPROACHES IN VIBRO-ACOUSTICS**

<b>A SHAPE CLASSIFICATION FOR THE ACOUSTIC RADIATOR USING ITS SOUND FIELD</b> .....	3029
<i>Koo-Hwan Kim, Yang-Hann Kim</i>	
<b>A MOVING SOUND SOURCE LOCALIZATION METHOD BASED ON TDOA</b> .....	3035
<i>Feng Miao, Diange Yang, Ruijia Wang, Jungie Wen, Ziteng Wang, Xiaomin Lian</i>	
<b>HIGH-RESOLUTION NEARFIELD ACOUSTIC HOLOGRAPHY BASED ON ITERATIVE WEIGHTED EQUIVALENT SOURCE METHOD</b> .....	3042
<i>Liang Xu, Chuan-Xing Bi, Xiao-Zheng Zhang, Chang-Jun Zheng</i>	

### **N6B NOISE IN LIGHTWEIGHT STRUCTURES**

<b>LABORATORY DATA EXAMINING IMPACT AND AIRBORNE SOUND ATTENUATION IN HEAVY TIMBER LOFT STYLE CONSTRUCTION</b> .....	3048
<i>Wilson Byrick</i>	
<b>CHALLENGES FOR ACOUSTIC CALCULATION MODELS IN "SILENT TIMBER BUILD", PART 2</b> .....	3054
<i>Jean-Luc Kouyoumji, Delphine Bard, Gerard Borello, Catherine Guigou</i>	
<b>LABORATORY FACILITIES FOR SOUND TRANSMISSION MEASUREMENTS - VALIDATION BY MEASUREMENT AND SIMULATION METHODS</b> .....	3062
<i>Marlon Meissnitzer, Blasius Buchegger, Heins Ferk</i>	
<b>EFFECTS OF SAMPLE CONSTRUCTION, SAMPLE SIZE AND NICHE DEPTH ON MEASURED SOUND TRANSMISSION LOSS</b> .....	3069
<i>Robin R. Wareing, John L. Davy, John R. Pearse</i>	
<b>THE UNCERTAINTY IN SOUND INSULATION OF AN INDUSTRIALLY PREFABRICATED LIGHTWEIGHT TIMBER CONSTRUCTION</b> .....	3079
<i>Rikard Oqvist</i>	

### **N8D ROOM ACOUSTICS**

<b>DIGITAL SOUND SYSTEM MODELLING AND DESIGN</b> .....	3088
<i>Lauren Davis, Neil Mackenzie</i>	
<b>THE PREDICTION OF THE COMPLEX CHARACTERISTIC ACOUSTIC IMPEDANCE OF POROUS MATERIALS</b> .....	3098
<i>David James Larner, John Laurence Davy</i>	
<b>AN EXPLICIT TIME-DOMAIN FINITE-ELEMENT METHOD FOR ROOM ACOUSTICS SIMULATION</b> .....	3106
<i>Takeshi Okuzono, Toru Otsuru, Kimihiro Sakagami</i>	
<b>A BEM STUDY OF THE INFLUENCE OF MUSICIANS ON ONSTAGE SOUND FIELD MEASURES IN AUDITORIA</b> .....	3113
<i>Lily Panton, Damien Holloway</i>	
<b>EVALUATION OF THE ACOUSTIC PERFORMANCE OF A THEATRICAL SPACE SET UP IN A RESTORED LATOMIA IN RAGUSA IBLEA</b> .....	3123
<i>Francesco Patania, Antonio Gagliano, Francesco Nocera, Andrea Cicero</i>	

### **S4A SOUNDSCAPE AND METHODS OF EVALUATION**

<b>SOUNDSCAPE TRANSECTS: CASE STUDIES FROM NEW YORK CITY AND O'AHU</b> .....	3132
<i>J. Parkman Carter</i>	

<b>TOWARDS A QUANTITATIVE TOOL TO ASSESS THE SOUNDSCAPE</b> .....	3140
<i>David Welch, Daniel Shepherd, Kim Dirks, Mei Yen Tan</i>	
<b>MEASURING A SOUNDSCAPE OF THE CAPTIVE SOUTHERN WHITE RHINOCEROS (CERATOTHERIUM SIMUM SIMUM)</b> .....	3150
<i>Susan Wiseman, Preston S. Wilson, Frank Sepulveda</i>	

**D8B MOTOR VEHICLE NOISE – POLICY AND REGULATION**

<b>OUTCOME BASED OPTIMISATION OF ROAD TRAFFIC NOISE MITIGATION</b> .....	3160
<i>Simon Kean</i>	
<b>BUFFER DISTANCES FOR SURFACE ROADS AND ELEVATED HIGHWAYS CORRELATED WITH PRE-EXISTING AMBIENT NOISE</b> .....	3168
<i>Jiping Zhang, Marc Buret, Shuoxian Wu, Yuezhe Zhao, Siayan Shen, Xin Zhang</i>	

**R5 BUBBLE ACOUSTICS**

<b>PLANAR LASER INDUCED FLUORESCENCE IMAGING OF BUBBLE FORMATION</b> .....	3178
<i>Marcus Fedrizzi, Julio Soria</i>	
<b>INTERACTION OF A PAIR OF HORIZONTALLY ALIGNED BUBBLES IN GRAVITY FIELD</b> .....	3185
<i>Han Jiao, Dongyan Shi, Zhikai Wang, Hongqun Li</i>	
<b>ACOUSTIC IMAGING OF SURFACE SHIP WAKES</b> .....	3193
<i>Alexei Kouzoubov, Shane Wood, Richard Ellem</i>	
<b>APPLICATION OF LATTICE BOLTZMANN METHOD TO RESEARCH BUBBLE INTERACTING WITH SPHERICAL PARTICLE</b> .....	3203
<i>Dongyan Shi, Zhikai Wang, Aman Zhang</i>	

**T3B EFFECTS OF NOISE ON HUMANS**

<b>ROAD TRAFFIC NOISE, AIR POLLUTION AND CARDIO-RESPIRATORY HEALTH IN EUROPEAN COHORTS: A HARMONISED APPROACH IN THE BIOSHARE PROJECT</b> .....	3212
<i>Yutong Cai, Marta Blangiardo, Kees De Hoogh, John Gulliver, David Morley, Dany Doiron, Paul Elliott, Anna Hansell, Susan Hodgson</i>	
<b>TRANSFERABILITY OF THE RESULTS FROM LABORATORY BASIC RESEARCH ON COGNITIVE IMPAIRMENT BY BACKGROUND SOUND TO REAL LIFE OFFICES</b> .....	3219
<i>Andreas Liebl, Maria Kittel</i>	
<b>PREDICTION OF VIRTUAL SOUND SOURCE ELEVATION IMPROVED BY INCLUDING INPUT SOURCE SPECTRAL SHAPE IN THE PREDICTION EQUATION</b> .....	3227
<i>Ella Manor, William L. Martens</i>	

**E2 GROUND-BORNE VIBRATION AND NOISE FROM RAILWAYS**

<b>STUDY ON ELEVATED LIGHT RAIL INDUCED VIBRATION ATTENUATION ALONG THE SURROUNDING GROUND</b> .....	3237
<i>Changqing Liu, Yude Zhou, Ying Tu, Weiming Xu</i>	
<b>FORCE DENSITY MEASUREMENTS AT SOUND TRANSIT</b> .....	3247
<i>James Nelson, Derek Watry, Patrick Faner, Isabelle Lamb, Tracy Reed, Armin Wright</i>	
<b>EXPERIMENTAL MODAL ANALYSIS OF HIGH-SPEED RAILWAY CARRIAGE</b> .....	3257
<i>Shan Ouyang, Fusheng Sui</i>	

**VOLUME 5**

<b>USE OF A "HYBRID" EMPIRICAL/FINITE ELEMENT APPROACH FOR PREDICTING GROUNDBORNE VIBRATION FROM RAIL SYSTEMS</b> .....	3264
<i>Hugh Saurenman, Eric Roulo</i>	
<b>A PARAMETRIC STUDY ON THE INFLUENCE OF TRACK IRREGULARITIES UPON TRAIN INDUCED GROUND VIBRATION</b> .....	3273
<i>Hidefumi Yokoyama, Kazuyuki Yashiro, Shinjiro Kato, Takehiro Ohta</i>	

**V2A SOUND VISUALIZATION AND MANIPULATION**

<b>RECONSTRUCTION OF SOUND FIELDS WITH A SPHERICAL MICROPHONE ARRAY</b> .....	3281
<i>Efren Fernandez-Grande, Tim Walkton</i>	
<b>NON-STATIONARY HOLOGRAPHY ON ARBITRARY SOURCE SHAPES</b> .....	3289
<i>Jesper Gomes, Yutaka Ishii, Bernard Ginn</i>	

<b>EXPLORING THE LIMITATIONS AND EXPECTATIONS OF SOUND SOURCE LOCALIZATION AND VISUALIZATION TECHNIQUES.....</b>	3299
<i>Gunnar Heilmann, Dirk Doebler, Magdalena Boeck</i>	
<b>DETECTION AND DIRECTION ESTIMATION OF A SUDDEN LOUD SOUND FOR THE HEARING ASSISTIVE EYEGLASSES.....</b>	3308
<i>Ki-Won Kim, Jung-Woo Choi, Yang-Hann Kim</i>	
<b>DEVELOPING BEAM-FORMING DEVICES TO DETECT SQUEAK AND RATTLE SOURCES BY USING FPGA.....</b>	3318
<i>Youngkey Kim, Jungoo Kang, Myunghan Lee</i>	

### **L3A APPLICATIONS AND SYSTEMS FOR ACTIVE CONTROL**

<b>ACTIVE SNORE CONTROL SYSTEM INTEGRATED WITH APNEA DETECTOR.....</b>	3324
<i>Sen M. Kuo, Cheng-Yuan Chang, Karunakar Pottim, Lichuang Liu</i>	
<b>ACTIVE FLOW CONTROL OF THE EXHAUST NOISE FROM INTERNAL COMBUSTION PISTON ENGINE.....</b>	3331
<i>Damien Leclercq, Carl Howard</i>	
<b>DEVELOPMENT OF A VOICE SHUTTER (PHASE 1: A CLOSED TYPE WITH FEED FORWARD CONTROL).....</b>	3341
<i>Masaharu Nishimura, Toshihiro Tanaka, Koji Shiratori, Kazunori Sakurama, Shinichiro Nishida</i>	
<b>APPLYING ACTIVE NOISE CONTROL TECHNIQUE FOR AUGMENTED REALITY HEADPHONES.....</b>	3350
<i>Rishabh Ranjan, Gan Woon-Seng, Chong Yong-Kim</i>	
<b>A DECOUPLED HYBRID STRUCTURE FOR ACTIVE NOISE CONTROL WITH UNCORRELATED NARROWBAND DISTURBANCES.....</b>	3359
<i>Lifu Wu, Xiaojun Qiu, Ian S. Burnett, Eva Cheng, Yecai Guo</i>	

### **G3 WIND TURBINES – EVALUATION AT NEIGHBOURS II**

<b>USING WIND FARM NOISE AURALISATIONS FOR EFFECTIVE COMMUNITY CONSULTATION.....</b>	3368
<i>Frank Butera, Kym Burgemeister, Kai Fisher, David Mounter</i>	
<b>THE NOISE CHARACTERISTICS OF 'COMPLIANT' WIND FARMS THAT ADVERSELY AFFECT ITS NEIGHBOURS.....</b>	3376
<i>Sarah Large, Mike Stigwood</i>	
<b>INITIAL FINDINGS OF THE UK COTTON FARM WIND FARM LONG TERM COMMUNITY NOISE MONITORING PROJECT.....</b>	3396
<i>Mike Stigwood, Duncan Stigwood, Sarah Large</i>	
<b>THE RELEVANCE OF THE PRECAUTIONARY PRINCIPLE TO WIND FARM NOISE PLANNING.....</b>	3415
<i>Bob Thorne</i>	

### **C43 NEW EXPERIMENTAL TECHNIQUES**

<b>DEVELOPMENT OF THE MICROPHONE-ARRAY MEASUREMENT TECHNIQUE FOR USE IN CRYOGENIC AND PRESSURIZED WIND TUNNELS.....</b>	3425
<i>Thomas Ahlefeldt, Carsten Spehr</i>	
<b>BEAMFORMING OF AEROACOUSTIC SOURCES IN THE TIME DOMAIN.....</b>	3437
<i>Jeffrey Fischer, Vincent Valeau, Laurent-Emmanuel Brizzi</i>	
<b>CORRELATION OF PARALLEL CAR INTERIOR AND EXTERIOR BEAMFORMING MEASUREMENTS IN A WIND TUNNEL.....</b>	3445
<i>Stefan Neugebauer, Reinhard Rosel, Dirk Dobler</i>	
<b>THREE-DIMENSIONAL BEAMFORMING OF AEROACOUSTIC SOURCES.....</b>	3453
<i>Ric Porteaous, Zebb Prime, Vincent Valeau, Con Doolan, Danielle Moreau</i>	
<b>BEAMFORMING ARRAY OPTIMISATION AND PHASE AVERAGED SOUND SOURCE MAPPING ON A MODEL WIND TURBINE.....</b>	3462
<i>Zebb Prime, Con Doolan, Branko Zajamsek</i>	

### **A3C NOISE POLICY**

<b>QUIET CONSTRUCTION: STATE-OF-THE-ART METHODS AND MITIGATION MEASURES.....</b>	3471
<i>Kin Wui Cheng, Chi Wing Law, Cheung Lam Wong</i>	
<b>NOISE SENTINEL - A PROACTIVE APPROACH TO NOISE MANAGEMENT IN MINING OPERATIONS AT BHP BILLITON WORSLEY ALUMINA PTY LTD.....</b>	3481
<i>Silver Kenny, Douglas Manvell</i>	
<b>QUALITY POWERED MECHANICAL EQUIPMENT SYSTEM TO REDUCE CONSTRUCTION NOISE IN HONG KONG.....</b>	3489
<i>Chi-Wing Law, Cheung-Lam Wong</i>	

<b>CHALLENGE ON ENVIRONMENTAL MITIGATION MEASURES ON SITE FORMATION WORK TO ACHIEVE WIN-WIN-WIN SITUATION FOR PROJECT PROPONENT, CONTRACTORS AND STAKEHOLDERS</b> .....	3496
<i>Lawrence Lee, M. K. Cheung, Alfa Liu</i>	
<b>EFFECTIVE NOISE OBJECTIVES FOR INDUSTRIAL AND RESOURCE DEVELOPMENTS - SETTING, COMPLIANCE ASSESSMENT MONITORING AND AUDIT</b> .....	3505
<i>Colin Tickell</i>	

#### **H4A AIRPORT NOISE MODELLING AND MEASUREMENT**

<b>NOISE ASSESSMENT IN THE NEIGHBOURHOOD OF ITALIAN MILITARY AIRPORTS</b> .....	3515
<i>Vincenzo Filomena, Luciano De Vivo, Lorenzo Notarnicola, Renato Aversano, Manolo Tusciano</i>	
<b>MEASUREMENT OF NOISE EXPOSURE PLANAR DISTRIBUTION IN AIRCRAFT APPROACH PATH VICINITY</b> .....	3525
<i>Hirokazu Ishii, Takatoshi Yokota, Koichi Makino, Naoaki Shinohara, Masayuki Sugawara</i>	
<b>CHALLENGES IN PRODUCING AN AUSTRALIAN NOISE EXPOSURE FORECAST</b> .....	3532
<i>Ian McLeod, Mark Latimore</i>	
<b>RELIABILITY OF AIRCRAFT NOISE EVALUATION BY MEASUREMENT FOR COMPARISON WITH PREDICTION</b> .....	3544
<i>Naoaki Shinohara, Ichiro Yamada</i>	
<b>ANGULAR AND DISTANCE DEPENDENCE OF THE STANDARD DEVIATION OF MAXIMUM SOUND LEVEL FOR AIRCRAFT NOISE</b> .....	3554
<i>Martin Wall, Mikael Liljergren, Christer Heed, Alborz Tart</i>	
<b>LAND-USE PLANNING AT AIRPORTS IN GERMANY</b> .....	3564
<i>Rene Weinandy, Thomas Myck, Roman Thierbach</i>	

#### **Q3A VIBRO-ACOUSTIC METHODS FOR NOISE CONTROL TREATMENTS**

<b>NUMERICAL MODELLING OF THE VIBRO-ACOUSTIC BEHAVIOR OF A CLOSED VEHICLE WITH FREQUENCY DEPENDENT POLYMER MATERIALS</b> .....	3569
<i>Kaïss Bouayed, Philippe Mordillat, Lassen Mebarek, Mohamed Ali Hamdi</i>	
<b>RESEARCH ON VIBRATION AND SOUND RADIATION CHARACTERISTICS OF SHIP STIFFENED COMPOSITE PLATE STRUCTURE</b> .....	3578
<i>Fu-Zhen Pang, Hong-Bao Song, Xu-Hong Miao</i>	
<b>OPTIMAL DESIGN OF UNCONSTRAINED DAMPING MATERIAL ON A THIN PANEL BY USING TOPOLOGY OPTIMIZATION</b> .....	3587
<i>Takashi Yamamoto, Takayuki Yamada, Kazuhiro Izui, Shinji Nishiwaki</i>	
<b>STOCHASTIC POROUS MODEL OF A BONE-IMPLANT HEALING PROCESS USING POLYNOMIAL CHAOS EXPANSION</b> .....	3597
<i>Ji Yang, Beatrice Faverjon, David Dureisseix, Pascal Swider, Nicole Kessissoglou</i>	
<b>OPTIMAL CONFIGURATIONS OF ACLD/PLATE FOR BENDING VIBRATION CONTROL USING INSGA-II</b> .....	3604
<i>Dongdong Zhang, Ling Zheng, Yinong Li</i>	

#### **Q7 MODAL ANALYSIS**

<b>REMOVAL OF SHAFT SPEED RELATED COMPONENTS FROM THE RESPONSE SIGNALS OF A MACHINE WITH VARYING SPEED PRIOR TO OPERATIONAL MODAL ANALYSIS</b> .....	3616
<i>Michael David Coats, Robert Bond Randall</i>	
<b>A DETAILED EXPERIMENTAL MODAL ANALYSIS OF A CLAMPED CIRCULAR PLATE</b> .....	3624
<i>David Matthews, Hongmei Sun, Kyle Saltmarsh, Dan Wilkes, Andrew Munyard, Jie Pan</i>	
<b>AUTOMOTIVE CABIN CHARACTERIZATION BY ACOUSTIC MODAL ANALYSIS</b> .....	3633
<i>Bart Peeters, Mahmoud El-Kafafy, Giampiero Accardo, Fabio Bianciardi, Karl Janssens</i>	
<b>REGENERATION OF FREQUENCY RESPONSE FUNCTIONS FROM POLES AND ZEROS: A DISCUSSION WITH IMPLICATIONS FOR CEPSTRUM-BASED OPERATIONAL MODAL ANALYSIS</b> .....	3643
<i>Wade A. Smith, Robert B. Randall</i>	
<b>USING FREQUENCY AND MODAL ANALYSIS TO ATTENUATE LOW FREQUENCY WAVES</b> .....	3653
<i>Stanislav Ziaran</i>	

#### **N6C NOISE IN LIGHTWEIGHT STRUCTURES**

<b>PREDICTION OF ACOUSTIC PERFORMANCE OF COMPOSITE STEEL FLOORS</b> .....	3663
<i>Keith Orsborn Ballagh, Hyuck Chung</i>	
<b>FLANKING SOUND TRANSMISSION IN AN INNOVATIVE LIGHTWEIGHT CLAY BLOCK BUILDING SYSTEM WITH AN INTEGRATED INSULATION USED AT MULTIFAMILY HOUSES</b> .....	3668
<i>Blasius Buchegger, Heinz Ferk, Marlon Meissnitzer</i>	



<b>APPROXIMATE FORMULAE FOR THE AVERAGE ONE SIDED SPECIFIC RADIATION WAVE IMPEDANCE OF A FINITE RECTANGULAR PANEL</b> .....	3675
<i>John Laurence Davy, David James Larner, Robin R. Wareing, John R. Pearse</i>	
<b>A NEW BUILDING ACOUSTICAL CONCEPT FOR LIGHTWEIGHT TIMBER FRAME CONSTRUCTIONS</b> .....	3685
<i>Lieven De Geetere, Bart Ingelaere</i>	
<b>MEASUREMENTS OF JUNCTION VIBRATION LEVEL DIFFERENCES OF TIMBER FRAMED CONSTRUCTIONS</b> .....	3693
<i>Anders Homb</i>	
<b>THE OPTIMIZATION OF A WOODEN FLOOR DESIGN BASED ON VALIDATED FINITE ELEMENT MODELS</b> .....	3701
<i>Jeffrey Mahn, Carl Hopkins, Marios Filippopolitis, Ulrich Schanda, Raphael Voltl, Lubos Krajci</i>	

### **N8E ROOM ACOUSTICS**

<b>THEORY AND THREE-DIMENSIONAL NUMERICAL SIMULATION OF SOUND PROPAGATION ALONG A LONG ENCLOSURE WITH SIDE OPENING</b> .....	3706
<i>S. H. K. Chu, S. K. Tang</i>	
<b>GENERALIZED ALTERNATIVE IMAGE THEORY TO ESTIMATING SOUND FIELD FOR COMPLEX SHAPES OF INDOOR SPACES</b> .....	3714
<i>Byunghak Kong, Kyuho Lee, Seokjong Jang, Seo-Ryong Park, Soogab Lee</i>	
<b>REDUCING NOISE AND OPTIMIZING SOUND WITHIN WORKING SPACES</b> .....	3720
<i>Fabian Probst</i>	
<b>PARAMETERS DESIGN OF A NONLINEAR MEMBRANE ABSORBER APPLIED TO AN ACOUSTIC CAVITY</b> .....	3730
<i>Jianwang Shao, Xian Wu</i>	
<b>FINITE ELEMENT SOUND FIELD ANALYSIS FOR CORRECTION OF ABSORPTION COEFFICIENT IN REVERBERATION ROOM</b> .....	3740
<i>Reiji Tomiku, Toru Otsuru, Noriko Okamoto, Takeshi Okuzono, Yoshiki Azechi, Tsuyoshi Yoshida</i>	

### **D3A ELECTRIC / HYBRID VEHICLES**

<b>STUDY OF HIGH FREQUENCY NOISE FROM ELECTRIC MACHINES IN HYBRID AND ELECTRIC VEHICLES</b> .....	3746
<i>Timothy Whitehead Bassett, Simon Tate, Matthew Maunder</i>	
<b>COMPREHENSIVE AUTOMOTIVE ACTIVE SOUND DESIGN PART 2: OPERATIONAL SOUNDS AND BRAND SOUND</b> .....	3756
<i>Torsten Belschner, Markus Bodden</i>	
<b>COMPREHENSIVE AUTOMOTIVE ACTIVE SOUND DESIGN PART 1: ELECTRIC AND COMBUSTION VEHICLES</b> .....	3760
<i>Markus Bodden, Torsten Belschner</i>	
<b>MEASUREMENT AND ANALYSIS OF THE INTERIOR NOISE AND THE TRANSFER PATH OF ACOUSTIC PHENOMENA INTO THE DRIVER CABIN OF A BATTERY ELECTRIC VEHICLE</b> .....	3766
<i>Jan Fischer, Matthias Behrendt, Dirk Lieske, Albert Albers</i>	
<b>VIBRO-ACOUSTIC MEASUREMENTS AND TECHNIQUES FOR ELECTRIC AUTOMOTIVE APPLICATIONS</b> .....	3776
<i>Mathieu Sarrazin, Steven Gillijns, Karl Janssens, Herman Van Der Auweraer, Kevin Verhaeghe</i>	
<b>VIBRATION CONTROL OF IN-WHEEL SRM FOR ELECTRIC VEHICLE APPLICATIONS</b> .....	3786
<i>Wei Sun, Yinong Li, Guangzhong Xu, Non Zhang</i>	

### **D5 ULTRALOW NOISE SURFACES**

<b>RESULTS FROM FIRST DANISH FULL SCALE TEST SECTION WITH POROELASTIC ROAD SURFACE</b> .....	3795
<i>Hans Bendtsen, Rasmus Stahlfest Holk Skov, Bent Andersen, Julien Cesbron</i>	
<b>TYRE/ROAD NOISE REDUCTION BY A POROELASTIC ROAD SURFACE</b> .....	3805
<i>Jerzy Ejsmont, Ulf Sandberg, Beata Swieczko-Zurek, Piotr Mioduszewski</i>	
<b>INNOVATIVE LOW NOISE SURFACES - COMPARISON OF DAMPING AND ABSORPTION</b> .....	3817
<i>Elisabete Freitas, Jose Dias Rodrigues, Jorge Araujo, Hugo Silva</i>	
<b>DEVELOPING A DURABLE AND ULTRA LOW NOISE POROELASTIC PAVEMENT</b> .....	3826
<i>Luc Goubert</i>	
<b>THE BEST POROUS ASPHALT PAVEMENT IN SWEDEN SO FAR</b> .....	3836
<i>Ulf Sandberg, Piotr Mioduszewski</i>	

### **R6A UNDERWATER NOISE FROM PILE DRIVING**

<b>OVERVIEW OF EXISTING NOISE MITIGATION SYSTEMS FOR REDUCING PILE-DRIVING NOISE</b> .....	3848
<i>Michael A. Bellmann</i>	

<b>THE NEW NOISE MITIGATION SYSTEM 'HYDRO SOUND DAMPERS': HISTORY OF DEVELOPMENT WITH SEVERAL HYDRO SOUND AND VIBRATION MEASUREMENTS</b> .....	3859
<i>Benedikt Bruns, Christian Kuhn, Philipp Stein, Jorg Gattermann, Karl-Heinz Elmer</i>	
<b>ANALYTICAL MODEL FOR THE SOUND PRESSURE WAVEFORM RADIATED UNDERWATER WHEN AN OFFSHORE STEEL PIPE PILE IS DRIVEN WITH AN IMPACT HAMMER</b> .....	3868
<i>Marshall V. Hall</i>	
<b>CALTRANS COMPENDIUM OF UNDERWATER SOUND DATA FROM PILE DRIVING - 2014 UPDATE</b> .....	3878
<i>Richard Rodkin, Keith Pmmerenck</i>	
<b>NEW ACHIEVEMENTS IN UNDERWATER NOISE MODELLING FOR OFFSHORE PILE DRIVING</b> .....	3887
<i>Benjamin Trimoreau, Rene Smidt Lutzen, Jon Vindahl Kringelum, Amir Shajarati, Peter Skjellerup</i>	
<b>A COMPARISON OF NUMERICAL METHODS FOR THE TIME DOMAIN MODELLING OF PILE DRIVING NOISE IN THE NEAR FIELD</b> .....	3897
<i>Daniel Ryan Wilkes, Tim Gourlay, Alexander Gavrilov</i>	

#### **S4B SOUNDSCAPE AND METHODS OF EVALUATION**

<b>WYSAHIWYG (WHAT YOU SEE AND HEAR IS WHAT YOU GET): LEARNING FROM PHOTOCARTOGRAPHY IN MAPPING THE CROSS-MODAL FEATURES OF THE SOUNDSCAPE</b> .....	3907
<i>J. Parkman Carter, Jonas Braasch</i>	
<b>AURES - THE ADVANCED ENVIRONMENT NOISE MONITORING SYSTEM - LEQ(A) OR NEW MEASUREMENT TECHNOLOGY?</b> .....	3917
<i>Antti Leskinen, Roy Hjort, Kari Saine, Zengxin Gao</i>	
<b>QUADMAP, THREE PILOTS AND A METHODOLOGY</b> .....	3926
<i>Henk Wolfert</i>	

#### **T6A PSYCHO-ACOUSTICS IN NOISE EVALUATION**

<b>GROUND-BORNE VIBRATIONS, SOUNDS AND SECONDARY AIRBORNE SOUNDS FROM TRAMWAYS: A PSYCHOACOUSTIC EVALUATION INCLUDING HEALTH ASPECTS</b> .....	3933
<i>Michael Cik, Peter Lercher</i>	
<b>PSYCHOACOUSTIC EXPERIMENTS ON SOME UNWANTED INTERIOR CAR SOUNDS</b> .....	3942
<i>Hugo Fastl, Georg Beidenhauser</i>	
<b>CONTINUOUS JUDGMENT OF SOUND QUALITY OF ELECTRIC HOME APPLIANCES</b> .....	3947
<i>Sonoko Kuwano, Seiichiro Namba, Hugo Fastl, Jakob Putner</i>	
<b>THE COMPARISON OF PSYCHOLOGICAL EVALUATION BETWEEN MILITARY AIRCRAFT NOISE AND CIVIL AIRCRAFT NOISE</b> .....	3955
<i>Makoto Morinaga, Ippei Yamamoto, Hidebumi, Tsukioka, Koichi Makino, Sonoko Kuwano, Mitsuo Matsumoto</i>	
<b>ISO 532 - LIVING AND WORKING WITH ALTERNATIVE LOUDNESS STANDARDS</b> .....	3960
<i>Joachim Scheuren</i>	
<b>OVERALL LOUDNESS OF SHORT TIME-VARYING SOUNDS</b> .....	3966
<i>Josef Schlittenlacher, Takeo Hashimoto, Sonoko Kuwano, Seiichiro Namba</i>	
<b>MEASUREMENT OF AIR-CONDUCTED AND BONE-CONDUCTED DENTAL DRILLING SOUNDS</b> .....	3970
<i>Tomomi Yamada, Sonoko Kuwano, Yoshinobu Yasuno, Jiro Kaku, Shigeyuki Ebisu, Mikako Hayashi</i>	

#### **T2 REACTION TO TRAFFIC NOISE**

<b>NOISE ANNOYANCE FOR A MOTORWAY COMPARED TO URBAN ROADS</b> .....	3975
<i>Hans Bendtsen, Torben Holm Pedersen, Guillaume Le Ray, Jorgen Kragh</i>	
<b>USING MATHEMATICAL MODELS TO PREDICT ANNOYANCE FROM COMBINED NOISE SOURCES IN THE CITY OF DUBAI</b> .....	3985
<i>Hussein M. Elmehdi</i>	
<b>THE INFLUENCE OF LOCATION OF THE PRIVILEGED VEHICLE SIREN ON THE VEHICLE TRAFFIC SAFETY</b> .....	3990
<i>Pawel Gorski, Wiktor M. Zawieska</i>	
<b>STRUCTURAL EQUATION MODEL OF ROAD TRAFFIC NOISE ANNOYANCE IN VIETNAM</b> .....	3996
<i>Thulan Nguyen, Takashi Yano, Shigenori Yokoshima, Takashi Morihara</i>	
<b>EXPERIMENTAL STUDY OF TRAFFIC NOISE AND HUMAN RESPONSE IN AN URBAN AREA: DEVIATIONS FROM STANDARD ANNOYANCE PREDICTIONS</b> .....	4005
<i>Erik M. Salomons, Sabine A. Janssen, Henk L. M. Verhagen, Peter W. Wessels</i>	
<b>SOCIAL SURVEYS ON COMMUNITY RESPONSE TO ROAD TRAFFIC IN FIVE CITIES IN VIETNAM</b> .....	4015
<i>Koji Shimoyama, Thu Lan Nguyen, Takashi Yano, Takashi Morihara</i>	
<b>SUBJECTIVE EXPERIMENT ON AUDITORY LOCALIZATION FOR TRAFFIC ALARM SOUNDS IN A HEAVY TRUCK</b> .....	4023
<i>Sakae Yokoyama, Hideki Tachibana, Hideo Makinouchi</i>	

### **L3B APPLICATIONS AND SYSTEMS FOR ACTIVE CONTROL**

<b>ACTIVE NOISE CONTROL IN PRACTICE: TRANSFORMER STATION</b> .....	4029
<i>Edwin Buikema, Fokke D. Van Der Ploeg, Jan H. Granneman</i>	
<b>AN INTEGRATED PASSIVE AND ACTIVE CONTROL SYSTEM FOR REDUCING HAUL TRUCK NOISE</b> .....	4039
<i>Zhibin Lin, Limin Zhang, Xiaojun Qiu, Jie Pan</i>	
<b>A NEW STRUCTURE FOR NONLINEAR NARROWBAND ACTIVE NOISE CONTROL USING VOLTERRA FILTER</b> .....	4047
<i>Jian Liu, Yegui Xiao, Hui Chen, Wenbo Liu</i>	
<b>BASIC STUDY ON ACTIVE ACOUSTIC SHIELDING: PHASE 6 IMPROVING THE METHOD TO ENLARGE AAS WINDOW-2</b> .....	4056
<i>Tatsuya Murao, Masaharu Nishimura, Kazunori Sakurama, Shin-Ichiro Nishida</i>	
<b>VIRTUAL SOUND BARRIER FOR INDOOR TRANSFORMERS</b> .....	4066
<i>Jiancheng Tao, Shuping Wang, Xiaojun Qiu, Ning Han, Linke Zhang</i>	
<b>APPLYING AN ACTIVE NOISE BARRIER ON A 110 KV POWER TRANSFORMER IN HUNAN</b> .....	4073
<i>Haishan Zou, Xiaofan Huang, Sheng Hu, Xiaojun Qiu</i>	

### **G4 MEASUREMENT – INFRASOUND, LFN, TONALITY**

<b>ANALYSIS OF WIND TURBINE LOW FREQUENCY NOISE PREDICTION ACCURACY</b> .....	4080
<i>Tom Evans, Jonathan Cooper, Vahid Alamshah</i>	

### **VOLUME 6**

<b>COMPARISON OF THE NOISE LEVELS MEASURED IN THE VICINITY OF A WIND FARM FOR SHUTDOWN AND OPERATIONAL CONDITIONS</b> .....	4090
<i>Kristy Hansen, Branko Zajamsek, Colin Hansen</i>	
<b>INFRASOUND AND BLADE PASS FREQUENCY LEVELS IN AREAS ADJACENT TO WIND FARMS</b> .....	4101
<i>Valeri V. Lenchine, Jonathan Song</i>	
<b>PROPAGATION THRESHOLDS AND MEASUREMENT OF INFRASOUND TO ESTABLISH SEPARATION DISTANCES FROM WIND FARM TURBINES TO RESIDENCES</b> .....	4108
<i>Bob Thorne</i>	
<b>INVESTIGATION OF THE TIME DEPENDENT NATURE OF INFRASOUND MEASURED NEAR A WIND FARM</b> .....	4118
<i>Branko Zajamsek, Kristy Hansen, Colin Hansen</i>	

### **C4B NEW EXPERIMENTAL TECHNIQUES**

<b>SOUND SOURCE LOCALISATION USING A SINGLE ACOUSTIC VECTOR SENSOR AND MULTICHANNEL MICROPHONE PHASED ARRAYS</b> .....	4128
<i>Wen-Qian Jing, Daniel Fernandez Comesana, David Perez Cabo</i>	
<b>IDENTIFICATION OF ACOUSTIC EVENT OF SELECTED NOISE SOURCES IN A LONG-TERM ENVIRONMENTAL MONITORING SYSTEMS</b> .....	4136
<i>Maciej Klaczynski, Tadeusz Wszolek, Witold Cioch, Wieslaw Wszolek, Pawel Pawlik, Dominik Mleczo, Anna Grzeczka</i>	
<b>AEROACOUSTIC TIME-REVERSAL IN THE PRESENCE OF A REFLECTING SURFACE</b> .....	4142
<i>Akhilesh Mimani, Con J. Doolan, Paul R. Medwell</i>	
<b>ON THE EFFECT OF MEAN FLOW PROFILE, WAVELENGTH AND ARRAY LENGTH ON FOCAL-RESOLUTION OF A QUADRUPOLE SOURCE USING AEROACOUSTIC TIME-REVERSAL</b> .....	4152
<i>Akhilesh Mimani, Con J. Doolan, Paul R. Medwell</i>	
<b>DETECTION AND QUANTIFICATION OF BUILDING AIR INFILTRATION USING REMOTE ACOUSTIC METHODS</b> .....	4162
<i>Ganesh Raman, Kanthasamy Chelliah, Manisha Prakash, Ralph T. Muehleisen</i>	

### **U2 NOISE MANAGEMENT IN CHALLENGING INDUSTRIES**

<b>DEFENDING WORKERS AGAINST HEARING LOSS: WHY AREN'T WORKERS HEARING OUR MESSAGE?</b> .....	4172
<i>Benjamin Elsey, Martin Jennings</i>	
<b>NOISE IN THE UNITED KINGDOM PRINTING INDUSTRY: THEN AND NOW</b> .....	4177
<i>Emma Shanks</i>	
<b>DEVELOPMENT OF AN OCCUPATIONAL NOISE EXPOSURE REDUCTION PROJECT FOR DEFENCE IN AUSTRALIA</b> .....	4185
<i>Peter Teague, James Conomos, Vasos Alexandrou, Martin Jennings</i>	

## **B5 BUY QUIET**

<b>IS THE AIRBORNE SOUND POWER LEVEL OF A SOURCE UNAMBIGUOUS?</b> .....	4195
<i>Patrick Kurtz</i>	
<b>NEW YORK CITY'S NEW NOISE CODE AND NYU'S CITYGRAM-SOUND PROJECT</b> .....	4205
<i>Charles Shamoon, Tae Hong Park</i>	
<b>SOUND PRESSURE LEVEL AND SOUND POWER LEVEL DECLARATIONS: NAVIGATING THE MAZE</b> .....	4212
<i>Emma Shanks</i>	

## **H4B AIRPORT NOISE MODELLING AND MEASUREMENT**

<b>INCLUDING ATMOSPHERIC PROPAGATION EFFECTS IN AIRCRAFT TAKE-OFF NOISE MODELING</b> .....	4222
<i>Michael Arntzen, Martijn Hordijk, Dick G. Simons</i>	
<b>ASSESSING ALL NOISE SOURCES IN ONE MODEL. IMPLEMENTATION OF INM AND ECAC 3<sup>RD</sup> EDITION IN NOISE MAPPING SOFTWARE</b> .....	4229
<i>Antonio Notario</i>	
<b>PRACTICAL METHOD OF CONSIDERING EFFECTS OF TERRAIN AND BUILDING STRUCTURES ON SOUND PROPAGATION</b> .....	4237
<i>Ichiro Yamada</i>	
<b>EXPERIMENTAL STUDY OF METEOROLOGICAL AND GROUND EFFECTS ON OUTDOOR SOUND PROPAGATION FOR DEVELOPING AIRCRAFT NOISE PREDICTION MODEL</b> .....	4243
<i>Takatoshi Yokota, Koichi Makino, Toshio Matsumoto, Kohei Yamamoto, Hirokazu Ishii</i>	
<b>INFLUENCE OF THE ATMOSPHERIC STRATIFICATION ON THE SOUND PROPAGATION OF SINGLE FLIGHTS</b> .....	4251
<i>Christoph Zellmann, Jean Marc Wunderli</i>	

## **Q3B VIBRO-ACOUSTIC METHODS FOR NOISE CONTROL TREATMENTS**

<b>PREDICTION OF SOUND TRANSMISSION THROUGH ELASTOMERIC BULB SEALS</b> .....	4261
<i>Serkan Atamer, Mehmet Caliskan, Gokhan Ozgen</i>	
<b>MODELING AND EXPERIMENTAL VALIDATION OF CELLULAR POROUS MATERIAL WITH LARGE RESONANT INCLUSIONS</b> .....	4270
<i>Olivier Doutres, Nouredine Atalla, Haisam Osman</i>	
<b>APPLYING DYNAMIC MECHANICAL ANALYSIS TO RESEARCH &amp; DEVELOPMENT FOR VISCOELASTIC DAMPING MATERIALS</b> .....	4278
<i>Alexander Rasa</i>	
<b>OPTIMIZATION DESIGN METHOD FOR CONSTRAINED DAMPING LAYER'S NOISE REDUCTION BASED ON THE HOFF SANDWICH PLATE THEORY</b> .....	4288
<i>Dongyan Shi, Qingshan Wang, Xianjie Shi</i>	

## **Q4A VIBRATION AND VIBRO-ACOUSTIC EXPERIMENTS**

<b>ASSESSMENT OF VIBRATIONS FROM A SEISMIC TEST FACILITY</b> .....	4296
<i>Yong Keat Lee, Neil Mackenzie</i>	
<b>AN APPROACH TO OPTIMAL SENSOR PLACEMENT FOR VIBRATION TESTS ON LARGE STRUCTURES</b> .....	4305
<i>Chunhui Yuan, Junjie Zhang</i>	
<b>ANALYSIS OF SEISMIC RESPONSE ON THE EXCITATION OF SUPPORT STRUCTURES</b> .....	4311
<i>Stanislav Ziaran, Michal Cekan, Ondrej Chlebo, Milos Musil</i>	

## **B3 MACHINERY N&V - COMPUTATIONS**

<b>ANALYTICAL MODEL FOR THE AIRBORNE SOUND PRESSURE WAVEFORM RADIATED WHEN AN OFFSHORE STEEL PIPE PILE IS DRIVEN WITH AN IMPACT HAMMER</b> .....	4319
<i>Marshall V. Hall</i>	
<b>VIBRATION INPUT IDENTIFICATION USING DYNAMIC STRAIN MEASUREMENT</b> .....	4329
<i>Takumi Itofuji, Takaya Yoshimura</i>	
<b>THE NEW METHOD FOR FOCUSING PROPERTIES OF THE ACOUSTICAL STEADY FIELD IN ROOM</b> .....	4337
<i>Song Liu, Sheng Li</i>	
<b>SOUND RADIATION FROM A WATER-LOADED CYLINDER DUE TO MACHINE NOISE</b> .....	4344
<i>Xia Pan, Yan Tso, James Forrest, Herwig Peters</i>	
<b>ACOUSTIC RADIATION RESPONSE PREDICTION OF THIN-WALLED BOX WITH PARTICLE DAMPERS USING MULTIPHASE FLOW THEORY OF GAS-PARTICLE</b> .....	4354
<i>Chengjun Wu, Dongqiang Wang, Ruichao Yang, Xiaofei Lei</i>	

<b>A RAYLEIGH-RITZ METHOD BASED ON IMPROVED FOURIER SERIES FOR VIBRATION ANALYSIS OF CYLINDRICAL SHELL COUPLED WITH ELASTIC BEAMS</b> .....	4362
<i>Runze Zhang, Yipeng Cao, Liaoyuan Li</i>	

### **N6D NOISE IN LIGHTWEIGHT STRUCTURES**

<b>RESEARCH ON SOUND INSULATION OF MULTIPLE-LAYER STRUCTURE WITH POROUS MATERIAL AND AIR-LAYER</b> .....	4372
<i>Guofeng Bai, Pei Zhan, Fusheng Sui, Jun Yang</i>	
<b>DESIGN OF A STANDALONE, MODULAR TEST FACILITY FOR MEASURING SOUND TRANSMITTED THROUGH A COMMON CEILING PLENUM</b> .....	4378
<i>Edward A. Barclay, Robin R. Wareing, John R. Pearse</i>	
<b>SOUND INSULATION OF APPLICATION FOR COMPOSITE WOOD PANEL</b> .....	4386
<i>Chuan Wen Chou, Chen Yu Chen, Rong Ping Lai, Philip Sun</i>	
<b>VIBRATION REDUCTION IN LIGHTWEIGHT FLOOR/CEILING SYSTEMS WITH A SAND-SAWDUST DAMPING LAYER</b> .....	4395
<i>Hyuck Chung, Grant Emms</i>	
<b>THE EQUIVALENT TRANSLATIONAL COMPLIANCE OF STEEL STUDS AND RESILIENT CHANNEL BARS</b> .....	4405
<i>Susumu Hirakawa, John Laurence Davy</i>	
<b>NOISE CONTROL BY DESIGN: A TOOL INTENDED FOR ARCHITECTURAL USE</b> .....	4415
<i>Ayca Sentop, Nurgun Tamer Bayazit, M. Cem Altun</i>	

### **N5 PROPAGATION AND GENERATION OF LOW FREQUENCY NOISE IN BUILDINGS**

<b>CHALLENGES FOR ACOUSTIC CALCULATION MODELS IN "SILENT TIMBER BUILD", PART 1- FEM</b> .....	4424
<i>Delphine Bard, Juan Negreira, Jean-Luc Kouyoumji, Gerard Borello, Catherine Guigou</i>	
<b>ACOUSTIC SOLUTIONS FOR WOODEN INTERMEDIATE FLOORS</b> .....	4430
<i>Olin Bartlome, Andreas Liebl</i>	
<b>COST BENEFIT ANALYSIS OF ACOUSTIC TREATMENTS FOR INNER-CITY RESIDENTIAL PREMISES NEAR ENTERTAINMENT VENUES</b> .....	4438
<i>David Borgeaud</i>	
<b>IMPROVEMENT EFFECT OF THE INFRASOUND AND VIBRATION DUE TO REPAIR OF THE BRIDGE</b> .....	4448
<i>Saiji Fukada, Yoshinori Kaneishi, Hirokazu Hama, Hiroyuki Okada</i>	
<b>LOW FREQUENCY SOUND TRANSMISSION IN MULTIFAMILY WOODEN HOUSES</b> .....	4455
<i>Klas Hagberg, Delphine Bard</i>	
<b>COMPARISON OF THE RESULTS OF A LABORATORY EXPERIMENT AND A FIELD STUDY WITH REGARD TO ACOUSTIC QUALITY IN WOODEN BUILDINGS AND RECOMMENDATIONS FOR CLASSIFICATION OF ACOUSTIC QUALITY</b> .....	4462
<i>Andreas Liebl, Moritz Spah, Olin Bartlome, Maria Kittel</i>	

### **D3B ELECTRIC / HYBRID VEHICLES**

<b>DESIGNING AND DELIVERING THE RIGHT SOUND FOR QUIET VEHICLES</b> .....	4467
<i>Mark Allman-Ward, Roger Williams, Thorsten Heinz, Maurizio Demontis</i>	
<b>SOUND DESIGN OF ELECTRIC VEHICLES - CHALLENGES AND RISKS</b> .....	4476
<i>Klaus Genuit, Andre Fiebig</i>	
<b>SUBJECTIVE EVALUATION OF ADDITIVE SOUND DESIGNED TO REINFORCE ACOUSTIC FEEDBACK OF ELECTRIC VEHICLE</b> .....	4486
<i>Doo Young Gwak, Kiseop Yoon, Yeolwan Seong, Soogab Lee</i>	
<b>URBAN ENVIRONMENT AUDIO SIMULATION FOR CONTEXTUAL EVALUATION OF QUIET VEHICLES' SOUND DESIGN</b> .....	4491
<i>Nicolas Misdariis, Julien Gerber, Julien Aleonard</i>	
<b>DEVELOPMENT OF A NEXT-GENERATION AUDIBLE PEDESTRIAN ALERT SYSTEM FOR EVS HAVING MINIMAL IMPACT ON ENVIRONMENTAL NOISE LEVELS PROJECT EVADER</b> .....	4501
<i>David Quinn, Josh Mitchell, Paul Clark</i>	
<b>DETECTABILITY AND HEARING IMPRESSION OF ADDITIONAL WARNING SOUNDS FOR ELECTRIC OR HYBRID VEHICLES</b> .....	4510
<i>Katsuya Yamauchi, Takaichi Sano, Shin Hasegawa, Fumio Tamura, Yuichiro Takeda</i>	

### **D7 MODELLING AND MAPPING TRAFFIC NOISE**

<b>EFFECTS UPON THE URBAN NOISE OF PRIORITIZING BICYCLE TRAFFIC AT INTERSECTIONS</b> .....	4517
<i>Jose Luis Cueto, Ricardo Hernandez, Francisco Fernandez, Diego Sales, Javier Cristino Priego</i>	
<b>NOISE MODELLING OF ROAD INTERSECTIONS</b> .....	4526
<i>Akil Lau, Yongkeat Lee, Bill Dawson, Neil Mackenzie</i>	

<b>ROAD TRAFFIC NOISE PREDICTION MODEL "ASJ RTN-MODEL 2013" PROPOSED BY THE ACOUSTICAL SOCIETY OF JAPAN - PART 2: STUDY ON SOUND EMISSION OF ROAD VEHICLES</b> .....	4536
<i>Yasuaki Okada, Terutoshi Tajika, Shinichi Sakamoto</i>	
<b>THE EFFECTS OF VEGETATION ON ROAD TRAFFIC NOISE</b> .....	4544
<i>Jeffrey Peng, Rob Bullen, Simon Kean</i>	
<b>ROAD TRAFFIC NOISE PREDICTION MODEL "ASJ RTN-MODEL 2013" PROPOSED BY THE ACOUSTICAL SOCIETY OF JAPAN - PART 1: OUTLINE OF THE CALCULATION MODEL</b> .....	4554
<i>Shinichi Sakamoto, Toshio Matsumoto, Terutoshi Tajika, Akinori Fukushima</i>	

### **R6B UNDERWATER NOISE FROM PILE DRIVING**

<b>HYDRO SOUND MEASUREMENTS DURING THE INSTALLATION OF LARGE DIAMETER OFFSHORE PILES USING COMBINATIONS OF INDEPENDENT NOISE MITIGATION SYSTEMS</b> .....	4558
<i>Benedikt Bruns, Philipp Stein, Christian Kuhn, Hauke Sychla, Jorg Gattermann</i>	
<b>NEW HYDRO SOUND DAMPERS TO REDUCE PILING UNDERWATER NOISE</b> .....	4568
<i>Karl-Heinz Elmer, John Savery</i>	
<b>DYNAMIC MEASUREMENTS OF PILE DEFLECTIONS AS A SOURCE OF UNDERWATER SOUND EMISSIONS DURING IMPACT DRIVING OF OFFSHORE PILE FOUNDATIONS</b> .....	4578
<i>Christian Kuhn, Hauke Sychla, Philipp Stein, Benedikt Bruns, Jorg Gattermann, Jan Degenhardt</i>	
<b>ON THE ESTIMATION OF PREDICTION ACCURACY IN NUMERICAL OFFSHORE PILE DRIVING NOISE MODELLING</b> .....	4588
<i>Tristan Lippert, Kristof Heitmann, Marcel Ruhna, Stephan Lippert, Otto Von Estorff</i>	
<b>AN EFFICIENT MODEL FOR PREDICTION OF UNDERWATER NOISE DUE TO PILE DRIVING AT LARGE RANGES</b> .....	4595
<i>Marten J. J. Nijhof, Bas Binnerts, Christ A. F. De Jong, Michael A. Ainslie</i>	

### **S3 SOUNDSCAPE AND NOISE CONTROL**

<b>SHARING IDEAS ABOUT NOISE MANAGEMENT AND COMMUNITY DESIGN</b> .....	4605
<i>David Dubbink</i>	
<b>THE MEASUREMENT OF SOUNDSCAPES - IS IT STANDARDIZABLE?</b> .....	4611
<i>Klaus Genuit, Andre Fiebig</i>	
<b>SOUNDSCAPE MAPPING IN URBAN CONTEXTS USING GIS TECHNIQUES</b> .....	4620
<i>Joo Young Hong, Jin Yong Jeon</i>	
<b>HOW DO ORDINARY PEOPLE EVALUATE NOISE POLLUTION IN THE CONTEXT OF ENVIRONMENTAL ISSUES?</b> .....	4625
<i>Koji Nagahata</i>	
<b>ON SEEKING METHODOLOGY TO "MEASURE" A SOUNDSCAPE</b> .....	4634
<i>Paul Schomer, Pranav Pamidighantam</i>	
<b>SOUNDSCAPE IDENTIFICATION IN NOISE ANNOYANCE EVALUATION</b> .....	4642
<i>Lei Yu, Jian Kang, Liang Hong, Charles Xie</i>	

### **T6B PSYCHO-ACOUSTICS IN NOISE EVALUATION**

<b>EVALUATION OF DIESEL POWERTRAIN NOISE -DIFFERENCE BETWEEN PROFESSIONAL AND NON-PROFESSIONAL-</b> .....	4648
<i>Takeo Hashimoto, Shigeki Hatano, Sung-Hwan Shin</i>	
<b>A STUDY ON SOUND QUALITY EVALUATION INDEX OF CAR DOOR LATCH AND IMPROVING SOUND QUALITY BY MODIFYING DOOR LATCH ASSEMBLY DESIGN</b> .....	4653
<i>Hyeonho Jo, Weonchan Seong, Hyeongrae Lee, Seonghyeon Kim, Dongchul Park, Yeon June Kang</i>	
<b>IN-SERVICE MEASUREMENT OF HEAVY VEHICLE ENGINE BRAKE NOISE</b> .....	4661
<i>Simon Kean, Robert Bullen, Jose Arredondo</i>	
<b>INFLUENCE OF LOW SPL AND BIRD TWITTERING SOUNDS ON THE LOUDNESS FOR ROAD TRAFFIC NOISE</b> .....	4671
<i>Kazuki Kurwano, Junji Yoshida</i>	
<b>A PSYCHOACOUSTIC ASSESSMENT OF ROAD TRAFFIC NOISE FOR INDOOR AURAL COMFORT IN HIGH-RISE BUILT ENVIRONMENT</b> .....	4679
<i>Mahbub Alam Sheikh, Siew Eang Lee</i>	
<b>SIMULATION OF GEAR RATTLE TO AID IN THE DEVELOPMENT OF SOUND QUALITY METRICS FOR DIESEL ENGINE COMPONENT SPECIFICATION</b> .....	4689
<i>Brandon Sobecki, Patricia Davies, J. Stuart Bolton</i>	
<b>INFLUENCES OF VEHICLE EXTERIOR IMAGES ON SOUND QUALITY RATINGS: GERMAN VS. JAPANESE DRIVERS</b> .....	4698
<i>Junji Yoshida, Florian Volk, Hugo Fastl, Gerhard Rigoll</i>	

## **V2B SOUND VISUALIZATION AND MANIPULATION**

<b>VIRTUAL IN-EAR MICROPHONE FOR IN-VEHICLE NOISE CONTROL BASED ON ARRAY TECHNOLOGY AND MODIFIED ZERO POINT ATTRACTION LMS ALGORITHMS</b> .....	4705
<i>Mirjana Adnadjevic, Dick Botteldooren</i>	
<b>WIDEBAND ACOUSTICAL HOLOGRAPHY</b> .....	4714
<i>Jorgen Hald</i>	
<b>DEVELOPMENT OF THE DOUBLE NAH METHOD</b> .....	4727
<i>Masao Nagamatsu</i>	
<b>MULTI-SPECTRAL ACOUSTICAL IMAGING</b> .....	4734
<i>Kentaro Nakamura, Xinhua Guo</i>	
<b>CREATION OF A SINGLE SOUND FIELD FOR MULTIPLE LISTENERS</b> .....	4740
<i>Mark Alister Poletti, Terence Betlehem</i>	
<b>A MICROPHONE POSITION CALIBRATION METHOD IN A REVERBERANT ENVIRONMENT FOR A RANDOMLY DISTRIBUTED ARRAY</b> .....	4748
<i>Pengxiao Teng, Ying Xiao, Yichun Yang</i>	

## **L4A ACTIVE VIBRATION CONTROL AND ACTIVE STRUCTURAL ACOUSTIC CONTROL**

<b>A STUDY ON THE INFLUENCE OF MODEL UNCERTAINTIES ON THE PERFORMANCE OF A FEEDBACK CONTROL BASED ASAC SYSTEM</b> .....	4757
<i>Ashok K. Bagha, S. V. Modak</i>	
<b>ACTIVE NOISE CONTROL EXPERIMENTS FOR AN ACOUSTIC-STRUCTURAL COUPLED ENCLOSURE USING STRUCTURAL-BASED VIRTUAL SENSORS</b> .....	4767
<i>Dunant Halim, Li Cheng</i>	
<b>SEMI-ACTIVE NOISE SUPPRESSION BASED ON SSD TECHNIQUE USING PIEZOELECTRIC ELEMENTS</b> .....	4775
<i>Hongli Ji, Li Cheng, Jinhao Qiu, Hong Nie</i>	
<b>COMBINED FORCE-MOMENT ACTUATOR FOR ASAC</b> .....	4785
<i>Ondrej Jiricek, Vojtech Jandak, Marek Brothanek</i>	
<b>ANALYSIS OF FREQUENCY-DOMAIN ACTIVE NOISE CONTROL ALGORITHM WITH PARALLEL STRUCTURE</b> .....	4789
<i>Nokhaeng Lee, Youngjin Park</i>	
<b>ACTIVE VIBRATION CONTROL USING COMPLIANT-BASED ACTUATORS</b> .....	4795
<i>Sannia Mareta, Dunant Halim, Atanas Popov</i>	
<b>ON SYNCHROPHASING CONTROL OF VIBRATION FOR A FLOATING RAFT VIBRATION ISOLATION SYSTEM</b> .....	4805
<i>Tiejun Yang, Liubin Zhou, Michael J. Brennan, Minggang Zhu, Zhigang Liu</i>	

## **G5 EVALUATION OF WIND TURBINE NOISE SOURCE MECHANISMS**

<b>CYCLIC PITCH FOR THE CONTROL OF WIND TURBINE NOISE AMPLITUDE MODULATION</b> .....	4814
<i>Franck Bertagnolio, Helge Aa. Madsen, Andreas Fischer, Christian Bak</i>	
<b>TONAL CHARACTERISTICS OF WIND TURBINE DRIVE TRAINS</b> .....	4822
<i>Bill Dawson, Neil Mackenzie</i>	
<b>APPLICATION OF STOCHASTIC WIND MODEL TO INVESTIGATE SWISHING CHARACTERISTICS OF INFRASOUND AND LOW FREQUENCY NOISE FROM WIND TURBINE</b> .....	4832
<i>Guang-Se Lee, Cheolung Cheong</i>	
<b>CLASSIFICATION OF DAMAGE FOR PLANETARY GEAR OF WIND TURBINE SIMULATOR</b> .....	4838
<i>Yun-Ho Seo, Sang-Ryul Kim, Bong-Ki Kim, Seong-Hyun Lee, Hae-Seung Kim</i>	
<b>WIND TURBINE TOWER RESONANCE</b> .....	4845
<i>Anders Sjostrom, Colin Novak, Helen Ule, Delphine Bard, Kent Persson, Goran Sandberg</i>	
<b>NUMERICAL SIMULATION AND AEROACOUSTIC NOISE MODELLING OF A WIND TURBINE USING A BLADE SECTION IN AN ANNULUS</b> .....	4853
<i>Sahan Hasaranga Wasala, Stuart Edward Norris, John Edward Cater</i>	

## **C5 AIRCRAFT ENGINE NOISE**

<b>ADAPTING A PROPELLER NOISE MODEL FOR AIRCRAFT AT CRUISING ALTITUDES</b> .....	4862
<i>David M. Blunt, Adrian Jones, David Mewett</i>	
<b>AEROACOUSTIC SOURCE LOCALIZATION ON OPEN ROTOR AIRCRAFT MODEL IN WIND TUNNEL TESTS</b> .....	4872
<i>Paolo Chiariotti, Milena Martarelli, Enrico Primo Tomasini, Paolo Castellini</i>	
<b>LATTICE BOLTZMANN STUDY OF THE GEOMETRIC EFFECT OF A PERFORATED ORIFICE ON ITS DAMPING PERFORMANCE</b> .....	4882
<i>Chenzhen Ji, Dan Zhao, Shihuai Li, Xinyan Li</i>	
<b>A COHERENCE APPROACH TO CHARACTERIZING BROADBAND SOUND FIELDS IN DUCTS</b> .....	4892
<i>Phillip Joseph</i>	

## **C6 JET NOISE**

<b>CHALLENGES ASSOCIATED WITH STUDYING NONLINEAR DISTORTION OF ACOUSTIC WAVEFORMS EMITTED BY HIGH-SPEED JETS</b> .....	4901
<i>Woutijn J. Baars, Charles E. Tinney, Mark F. Hamilton</i>	
<b>ACOUSTIC CHARACTERISTICS OF ANNULAR JETS</b> .....	4911
<i>Krishna Chaitanya Bellidega, Abhijit Dhamanekar, K. Srinivasan</i>	

## **VOLUME 7**

<b>USING POST ANALYSIS OF A NOISE SAMPLE STREAM IN PLACE OF NOISE MONITOR BASED THRESHOLDS IN THE DETECTION OF AIRCRAFT NOISE</b> .....	4919
<i>Myles Harding, Douglas Ferrier</i>	
<b>SEVERITY ASSESSMENT OF CIRCULAR ORIFICE SYNTHETIC JET BASED ON SOUND PRESSURE LEVEL</b> .....	4926
<i>Mahesh Kanase, Laxmikant Mangate, Mangesh Chaudhari</i>	

## **W1 INSTRUMENTATION**

<b>INFRASOUND SENSORS AND THEIR CALIBRATION AT LOW FREQUENCY</b> .....	4936
<i>Franck Larssonner, Hans-Gunter Uszakiewicz, Michael Mende</i>	
<b>CONTROLLING CYANOBACTERIA WITH ULTRASOUND</b> .....	4946
<i>D. J. J. Leclercq, C. Q. Howard, P. Hobson, S. Dickson, A. C. Zander, M. Burch</i>	
<b>AN INNOVATIVE SIGNAL PROCESSING TECHNIQUE FOR THE EXTRACTION OF ANTS' WALKING SIGNALS</b> .....	4956
<i>Sebastian Oberst, Enrique Nava-Baro, Joseph C. S. Lai, Theodore A. Evans</i>	
<b>REPORT OF LOW POWER NOISE MONITORING SYSTEM USING SOLAR PANEL</b> .....	4966
<i>Naru Sato, Ryosuke Kazama, Masaharu Ohya</i>	
<b>MEASUREMENT EXAMPLES OF A NEW WIRELESS MEASURING SYSTEM</b> .....	4973
<i>Yuichi Yonemoto, Yu Kurosawa, Yasutaka Nakajima, Masaharu Ohya</i>	

## **H5 NUMERICAL METHODS FOR PREDICTING OUTDOOR SOUND PROPAGATION**

<b>INCORPORATING DIRECTIVITY IN THE PSEUDOSPECTRAL TIME-DOMAIN METHOD BY USING SPHERICAL HARMONICS</b> .....	4980
<i>Fotis Georgiou, Maarten Hornikx</i>	
<b>EFFECT OF INPUT DATA IN THE IMPACT STUDIES OF ROAD TRAFFIC NOISE IN A TIME-DOMAIN MODEL</b> .....	4989
<i>Gwnael Guillaume, Benoit Gauvreau</i>	
<b>ACOUSTIC GREEN'S FUNCTIONS USING THE SINC-GALERKIN METHOD</b> .....	4996
<i>Adrian R. G. Harwood, Iain D. J. Dupere</i>	
<b>CALCULATION OF ACOUSTIC GREEN'S FUNCTION USING BEM AND DIRICHLET-TO-NEUMANN-TYPE BOUNDARY CONDITIONS</b> .....	5006
<i>Adrian R. G. Harwood, Iain D. J. Dupere</i>	
<b>COMPARISON OF THE RESULTS OF NUMERICAL AND GEOMETRICAL OUTDOOR ACOUSTIC SIMULATIONS IN A REAL-LIFE AREA</b> .....	5016
<i>Kazuma Hoshi, Takuya Oshima, Yasuhiro Hiraguri</i>	
<b>THREE-DIMENSIONAL WAVE-BASED SIMULATION OF OUTDOOR SOUND PROPAGATION USING THE CONSTRAINED INTERPOLATION PROFILE METHOD WITH A VARIABLE-GRID TECHNIQUE</b> .....	5023
<i>Takashi Ishizuka, Kan Okubo</i>	
<b>NOISE PROPAGATION SIMULATION IN AND AROUND BUILDINGS USING IMPROVED INTEGRAL ENERGY EQUATIONS</b> .....	5030
<i>Kiyoshi Masuda</i>	

## **O4B VIBRATION AND VIBRO-ACOUSTIC EXPERIMENTS**

<b>BROADBAND DYNAMIC PARAMETERS MEASUREMENT BY LONGITUDINAL VIBRATION TESTING USING PULSE WAVE</b> .....	5038
<i>Hong Hou, Zhengyu Wei, Yang Dai, Jianhua Yang</i>	
<b>VIBRATION ANALYSIS BASED ON TIME-FREQUENCY ANALYSIS WITH A DIGITAL FILTER: APPLICATION TO NONLINEAR SYSTEM IDENTIFICATION</b> .....	5044
<i>Yoshiaki Itoh, Taku Imazu, Hiroki Nakamura, Toru Yamazaki</i>	
<b>A NEW HIGH-FREQUENCY IMPEDANCE TUBE FOR MEASURING SOUND ABSORPTION COEFFICIENT AND SOUND TRANSMISSION LOSS</b> .....	5054
<i>Masateru Kimura, Jason Kunio, Andreas Schumacher, Yunseon Ryu</i>	
<b>IMPROVING THE SOUND INSULATION OF CONSTRUCTION BOARDS WITH A HIGH DAMPING GLUE</b> .....	5064
<i>Lasse Kinnari</i>	



<b>EXPERIMENTAL STUDY ON SOUND TRANSMISSION IN CONDENSER</b> .....	5073
<i>Weitao Kong, Wang Xu, Pingjian Ming, Gongmin Liu</i>	
<b>THE ACTUALITY OF ACOUSTO-MECHANICAL RESONANCES FOR NOISE CONTROL</b> .....	5080
<i>Roman Vinokur</i>	

### **Q5 VIBRO-ACOUSTICS OF LIGHTWEIGHT COMPOSITE PANELS**

<b>DYNAMIC LAMINATE MODEL FOR BROADBAND FREQUENCY PREDICTION</b> .....	5087
<i>Gerard Borello, Arnaud Duval</i>	
<b>GLOBAL SENSITIVITY ANALYSIS OF ACOUSTIC TRANSMISSION MODELS</b> .....	5094
<i>Jean-Loup Christen, Mohamed Ichchou, Bernard Troclet, Morvan Ouisse</i>	
<b>NUMERICAL MODELLING AND EXPERIMENTAL DETERMINATION OF THE DYNAMIC BEHAVIOUR OF COMPOSITE STRUCTURES</b> .....	5103
<i>Brandon Cohen, Paul Dylejko, Stephen Moore, Andrew Phillips</i>	
<b>QUIETING A RIB-FRAMED HONEYCOMB CORE SANDWICH PANEL FOR A ROTORCRAFT ROOF</b> .....	5113
<i>Stephen Hambric, Micah Shepherd, Royce Snider, Carl May</i>	
<b>SOUND RADIATION FROM THE WAVEGUIDE DOUBLE PLATE REGARDING AIR CAVITY BETWEEN THE UPPER AND LOWER PLATES</b> .....	5123
<i>H. Kim, J. Ryue</i>	
<b>PATTERNED FIBRE CONSTRAINED LAYER DAMPING FOR COMPOSITE MATERIALS</b> .....	5132
<i>Andre P. Verstappen, John R. Pearse</i>	

### **K1A NOISE BARRIERS**

<b>TRANSFORMATION OF SOUND BY A PHONONIC CRYSTAL</b> .....	5141
<i>Nicolas Cote, Jerome Vasseur, Quentin Souron, Anne-Christine Hladky-Hennion</i>	
<b>LIGHTWEIGHT NOISE BARRIER</b> .....	5151
<i>Wilson Ho, Wylog Wong, Yasir Naveed</i>	
<b>A STUDY ON SOUND INSULATION USING RECTANGULAR PLENUM CHAMBER ARRAYS</b> .....	5161
<i>Seong-Hyun Lee, Sang-Hoon Kim</i>	
<b>THREE DIMENSIONAL QUASI-PERIODIC NOISE BARRIERS</b> .....	5165
<i>Samaneh M. B. Fard, Herwig Peters, Nicole Kessissoglou, Steffen Marburg</i>	
<b>SUSTAINABILITY CRITERIA FOR STANDARDISATION OF NOISE REDUCING DEVICES</b> .....	5173
<i>Crina Oltean-Dumbrava, Jean-Pierre Clairbois</i>	
<b>THE FREQUENCY AND ANGULAR DEPENDENCE OF THE ABSORPTION COEFFICIENT OF COMMON TYPES OF LIVING PLANTS</b> .....	5180
<i>Jevgenija Prisutova, Kirill V. Horoshenkov, Jean-Philippe Groby, Bruno Brouard</i>	

### **N9A IMPACT NOISE IN BUILDINGS**

<b>COMPARISON OF RESILIENTLY SUSPENDED FLOATING SLAB CONSTRUCTIONS</b> .....	5186
<i>Paul Downey, Wilson Byrick, William Bonnycastle</i>	
<b>FLOOR IMPACT SOUND INSULATION OF TIMBER THREE-STORY SCHOOL BUILDING FOR FINAL FULL-SCALE FIRE TEST</b> .....	5193
<i>Atsuo Hiramitsu, Yuji Hasemi, Teruhiko Kaku</i>	
<b>FIELD FLOOR IMPACT NOISE SOUTH-EAST QUEENSLAND (AUSTRALIA)</b> .....	5202
<i>Eric Hsin-Cheng Huang</i>	
<b>SUBJECTIVE EVALUATION OF FLOOR IMPACT SOUND OF WOOD-FRAME CONSTRUCTION DWELLINGS IN DIFFERENT LIVING SITUATION</b> .....	5210
<i>Hiroshi Sato, Tomohito Hirota, Atsuo Hirimitsu, Manabu Tanaka</i>	
<b>UNCERTAINTIES AND VALIDATION PROCEDURES FOR THE COMPACT MEASUREMENT SETUP</b> .....	5216
<i>Jan-Henning Schmidt, Vilker Wittstock, Sabine C. Langer</i>	

### **D9A MUFFLERS AND SILENCERS**

<b>IMPROVING MUFFLER PERFORMANCE USING SIMULATION-BASED DESIGN</b> .....	5225
<i>Fangsen Cui, Ying Wang, Richard Chao Cai</i>	
<b>ADAPTIVE QUARTER WAVELENGTH TUBE TUNED BY VARYING AIR TEMPERATURE</b> .....	5230
<i>Kieran Doherty, Francesco Larizza, Matthew Tripodi, Carl Howard</i>	
<b>POTENTIAL OF FIBRE-REINFORCED COMPONENTS FOR LIGHTWEIGHT CONSTRUCTION MACHINES WITH LOW NOISE EMISSION</b> .....	5240
<i>Frank Kolbe, Martin Dannemann, Sebastian John, Niels Modler</i>	
<b>PERFORMANCE OF MULTIPLE MICRO-PERFORATED PANELS IN A DUCT</b> .....	5250
<i>Y. Liu, Y. S. Choy, Y. K. Chiang</i>	
<b>ACOUSTIC PERFORMANCE OF A PLATE WITH VARYING PERFORATIONS</b> .....	5260
<i>Xiaonan Wang, Weichen Zhang, Lechun Ying</i>	

## **F1A NOISE EVENTS FROM TRANSPORTATION NOISE**

<b>AN OVERVIEW OF CONCEPTS AND PAST FINDINGS ON NOISE EVENTS AND HUMAN RESPONSE TO SURFACE TRANSPORT NOISE</b> .....	5266
<i>A. L. Brown</i>	
<b>ARE NOISE EVENTS FROM SURFACE TRANSPORT PREDICTABLE? INSIGHTS FROM A WIDE MEASUREMENT CAMPAIGN</b> .....	5274
<i>Arnaud Can, Gwenael Guillaume, Benoit Gauvreau</i>	
<b>A CONCEPT ON PREDICTING ROAD NETWORK SCALE NOISE EVENT PROBABILITY BY ROAD FUNCTION</b> .....	5283
<i>Daniel A. Naish</i>	
<b>THE ROLE OF NOISE EVENTS IN NOISE RESEARCH, POLICY AND PRACTICE (PEAKS, EVENTS OR BOTH...)</b> .....	5292
<i>Irene Van Kamp, Ric Van Poll</i>	

## **R7 NUMERICAL METHODS IN UNDERWATER ACOUSTICS - TRANSMISSION**

<b>RESULTS OF THE RAY-TRACING BASED SOLVER BEAM FOR THE APPROXIMATE DETERMINATION OF ACOUSTIC BACKSCATTERING FROM THIN-WALLED OBJECTS</b> .....	5302
<i>Ralf Burgschweiger, Ingo Schafer, Martin Ochmann, Bodo Nolte</i>	
<b>ACOUSTIC RAY PROPAGATION IN THE WATERS OFF EASTERN AUSTRALIA USING OCEAN GLIDER DATA</b> .....	5312
<i>Jacqueline Clements, Robin Robertson</i>	
<b>THE INFLUENCE OF FINELY LAYERED SEABEDS ON ACOUSTIC PROPAGATION IN SHALLOW WATER</b> .....	5319
<i>Alec J. Duncan, Alexander N. Gavrilov, Matthew W. Koessler</i>	
<b>FURTHER CONSIDERATIONS FOR APPROXIMATING A PHYSICS-BASED MODEL OF SURFACE REFLECTION LOSS</b> .....	5327
<i>Adrian David Jones, Alex Zinoviev, David Wayne Bartel</i>	
<b>TIDAL EFFECTS ON ACOUSTIC PROPAGATION OFF EASTERN AUSTRALIA</b> .....	5337
<i>Robin Robertson, Paul Hartlipp</i>	
<b>A FORECASTING METHOD FOR NEAR-FIELD SCATTERING CHARACTERISTICS OF UNDERWATER COMPLEX SHELLS</b> .....	5346
<i>Anbang Zhao, Zhishan Zhao, Bin Zhou</i>	
<b>THE SPATIAL STRUCTURE OF AN ACOUSTIC WAVE PROPAGATING THROUGH A LAYER WITH HIGH SOUND SPEED GRADIENT</b> .....	5354
<i>Alex Zinoviev, David W. Bartel</i>	

## **S5 SOUNDSCAPES AND HEALTH RELATED QUALITY OF LIFE**

<b>AVIATION-RELATED NOISE-INDUCED ANNOYANCE AND HEALTH-RELATED QUALITY OF LIFE</b> .....	5364
<i>Kim Dirks, Daniel Shepherd, David Welch, David McBride</i>	
<b>SOUND SOURCE STUDY IN SHENZHEN CHINA</b> .....	5368
<i>Liang Hong, Lei Yu, Kang Sai Zhao, Ming Di Zhang</i>	
<b>HEALTH IN THE NOISE CONTEXT: THE RELATIVITY OF ABSOLUTE HEALTH</b> .....	5372
<i>Daniel Shepherd, Kim N. Dirks, David McBride, David Welch</i>	
<b>ASSESSING THE RELATIONSHIP BETWEEN PERCEIVED DISTURBANCES FROM TRAFFIC, RESTORATIVE QUALITIES OF THE LIVING ENVIRONMENT, AND HEALTH</b> .....	5381
<i>Eike Von Lindern, Terry Hartig, Peter Lercher</i>	
<b>INFLUENCE OF SOUNDSCAPE AND INTERIOR DESIGN ON ANXIETY AND PERCEIVED TRANQUILITY OF PATIENTS IN A HEALTHCARE SETTING</b> .....	5390
<i>Greg Watts, Amir Khan, Rob Pheasant</i>	

## **T6C PSYCHO-ACOUSTICS IN NOISE EVALUATION**

<b>EFFECT OF VISUAL STIMULUS ON SUBJECTIVE IMPRESSION OF INDOOR SOUND FIELDS WITH VARIOUS REVERBERATION TIMES</b> .....	5399
<i>Ayumi Ishikawa, Takane Terashima, Yasunobu Tokunaga</i>	
<b>EFFECTS OF ACTIVE NOISE CONTROL ON SUBJECTIVE ANNOYANCE AND CORTICAL NEURAL ACTIVITIES FOR CAR ENGINE NOISE</b> .....	5409
<i>Tomoki Ito, Shunsuke Ishimitsu, Seiji Nakagawa</i>	
<b>TRAIN NOISE - A PSYCHOACOUSTIC INVESTIGATION FOR INDOOR AURAL COMFORT IN HIGH-RISE URBAN ENVIRONMENT IN THE TROPICS</b> .....	5416
<i>Mahbub Alam Sheikh, Siew Eang Lee</i>	
<b>PROGRESS IN CALCULATING TONALITY OF TECHNICAL SOUNDS</b> .....	5426
<i>Roland Sottek</i>	

<b>SIGNAL REPETITION RATES AND THEIR RELATIONSHIP TO THE PLEASANTNESS OF MULTI-TONE SOUNDS</b> .....	5435
<i>Stephan Topken, Henning Scheel, Reinhard Weber</i>	
<b>UNSUPERVISED FEATURE LEARNING ON MONAURAL DOA ESTIMATION USING CONVOLUTIONAL DEEP BELIEF NETWORKS</b> .....	5443
<i>Yan Chen, Mengyao Zhu, Nicolas Epain, Craig Jin</i>	

## **V2C SOUND VISUALIZATION AND MANIPULATION**

<b>ENHANCED SOUND FIELD REPRODUCTION WITHIN PRIORITIZED CONTROL REGION</b> .....	5451
<i>Hanchi Chen, Thushara D. Abhayapala, Wen Zhang</i>	
<b>DISTANCE PERCEPTION OF A NEARBY VIRTUAL SOUND SOURCE REPRODUCED BY A LINEAR LOUDSPEAKER ARRAY</b> .....	5461
<i>Dong-Soo Kang, Jung-Woo Choi, Yang-Hann Kim, William L. Martens</i>	
<b>DISCOVERING A PHYSICAL PARAMETER ASSOCIATED WITH A NEAR-FIELD SOUND CONTROL: COMPARING HRTFS OF NINE LOUDSPEAKERS IN A NON-ANECHOIC ROOM</b> .....	5471
<i>Sungyoung Kim, Philip Gosselin, Hiraku Okumura</i>	
<b>MANIPULATION OF SOURCE WIDTH BASED ON SOUND FIELD REPRODUCTION</b> .....	5477
<i>Jung-Min Lee, Jung-Woo Choi, Yang-Hann Kim</i>	
<b>STANDARDIZATION OF KOREAN HEAD-RELATED TRANSFER FUNCTION BASED ON TENSOR-SINGULAR VALUE DECOMPOSITION</b> .....	5487
<i>Daehyuk Son, Youngjin Park, Sei-Jin Jang</i>	
<b>LINEAR OPTIMAL SOURCE DISTRIBUTION MAPPING FOR BINAURAL SOUND REPRODUCTION</b> .....	5494
<i>Jianwen Zheng, Jing Lu, Xiaojun Qiu</i>	

## **L4B ACTIVE VIBRATION CONTROL AND ACTIVE STRUCTURAL ACOUSTIC CONTROL**

<b>A NOVEL SEMI-ACTIVE QUASI-ZERO STIFFNESS VIBRATION ISOLATION SYSTEM USING A CONSTANT-FORCE MAGNETIC SPRING AND AN ELECTROMAGNETIC LINEAR MOTOR</b> .....	5502
<i>Orddom Y. Leav, Carolina Eriksson, Benjamin S. Cazzolato, William S. Robertson, Boyin Ding</i>	
<b>SOURCE IDENTIFICATION OF A VIBRATING PLATE USING PHASE CONJUGATION AND INTERIOR BOUNDARY ELEMENT METHOD</b> .....	5512
<i>Song Liu, Sheng Li</i>	
<b>DESIGN OF NATURAL FREQUENCY ADJUSTABLE ELECTROMAGNETIC ACTUATOR AND ACTIVE VIBRATION CONTROL TEST</b> .....	5521
<i>Xueguang Liu, Chao Han, Ye Wang, Tiejun Yang, Jingtao Du, Minggang Zhu</i>	
<b>AN EXPERIMENTAL INVESTIGATION ON THE ACOUSTIC PERFORMANCE OF A FLAPPING WING MICRO-AIR-VEHICLE</b> .....	5529
<i>Zhenbo Lu, Marco Debiassi, Quoc Viet Nguyen, Woei-Leong Chan</i>	
<b>USING A PSYCHOACOUSTIC CRITERION FOR THE ACTUATOR PLACEMENT IN AN ACTIVE STRUCTURAL ACOUSTIC CONTROL SYSTEM</b> .....	5539
<i>Veatratriki Papantoni, Christian Hesse, Michael Rose, Hans Peter Monner</i>	
<b>DEVELOPMENT OF A NOISE REDUCTION SYSTEM WITH PIEZOELECTRIC MATERIAL TO TRANSMITTED NOISE (STRUCTURE FOR IMPROVEMENT OF THE NOISE REDUCTION EFFECT)</b> .....	5547
<i>Katsuya Yamamoto, Akiyoshi Ishimori, Hiroyuki Sato, Mineyuki Asahina</i>	

## **G6 MEASUREMENT – MODELING AND PROPAGATION**

<b>INFLUENCE OF NON-STANDARD ATMOSPHERIC CONDITIONS ON TURBINE NOISE LEVELS NEAR WIND FARMS</b> .....	5557
<i>Jonathan Cooper, Tom Evans, Vahid Alamshah</i>	
<b>ASSESSING THE VALIDITY OF WIND FARM NOISE MONITORING DATA FOR PERIODS OF PARTIAL WIND FARM OPERATION</b> .....	5567
<i>Andrew Mitchell</i>	
<b>NOISE PROPAGATION FROM A VERTICAL AXIS WIND TURBINE</b> .....	5574
<i>Erik Mollerstrom, Sebastien Larsson, Fredric Ottermo, Jonny Hylander, Lars Baath</i>	

## **C7 COMPUTATIONAL AEROACOUSTICS**

<b>CALCULATION OF DUCT FLOW NOISE USING CE/SE METHOD</b> .....	5582
<i>Horus Y. H. Chan, Garret C. Y. Lam, Randolph C. K. Leung</i>	
<b>A PARTICLE ACCELERATED CFD-BEM TECHNIQUE APPLIED TO AEROACOUSTIC SCATTERING</b> .....	5590
<i>P. Croaker, N. Kessissoglou, S. Marburg</i>	
<b>SELF-NOISE PREDICTION OF A FLAT PLATE USING A HYBRID RANS-BEM TECHNIQUE</b> .....	5600
<i>P. Croaker, N. Kessissoglou, M. Karimi, C. Doolan, L. Chen</i>	

<b>THE NONLINEAR INHOMOGENEOUS GALBRUN-EQUATION: DERIVATION AND POSSIBLE WAYS TO SOLVE NUMERICALLY</b> .....	5610
<i>Marcus Guettler, Steffen Marburg</i>	
<b>NUMERICAL INVESTIGATION OF THE REFRACTION EFFECTS BY JET FLOWS IN ANECHOIC WIND TUNNELS</b> .....	5620
<i>Stephane Redonnet, Jean Bulle</i>	
<b>BOUNDARY CONDITION FOR THE IMPLEMENTATION OF ARBITRARY ACOUSTICAL MODES</b> .....	5632
<i>Sina Withaus, Joerg R. Seume</i>	

### **U3 PERSONAL HEARING PROTECTORS AND HEADSETS**

<b>EARMUFF COMFORT EVALUATION</b> .....	5642
<i>Rafael Gerges, Samir Gerges</i>	
<b>CONSTRUCTION APPRENTICES, WORK AND NOISE - EXECUTIVE SUMMARY</b> .....	5649
<i>Agnieszka Kosny, Geza Benke, Amy Allen, Christina Dimitriadis, Ewan Macfarlane, Malcolm Sim</i>	
<b>COMPARISON OF SPEECH INTELLIGIBILITY BETWEEN NORMAL HEADSETS AND BONE CONDUCTION HEARING DEVICES AT CALL CENTER</b> .....	5653
<i>Setsup Maeda, Koji Kobayashi, Hidenori Nakatani, Akiko Nakatani</i>	
<b>ANTHROPOMETRY OF EXTERNAL AUDITORY CANAL BY NON-CONTACTABLE MEASUREMENT</b> .....	5660
<i>Tsung-Hsien Tu, Jen-Fane Yu, Ren-Hung Wang, Yen-Sheng Chen</i>	

### **Q4C VIBRATION AND VIBRO-ACOUSTIC EXPERIMENTS**

<b>INFLUENCE OF BACKGROUND NOISE ON NON-CONTACT VIBRATION MEASUREMENTS USING PARTICLE VELOCITY SENSORS</b> .....	5668
<i>Daniel Fernandez Comesana, Fan Yang, Emiel Tijs</i>	
<b>VIBRATIONAL ENERGY FLOW IN CARBON COMPOSITE STRUCTURES</b> .....	5674
<i>Mariam Jaber, Helmut Schneeweiss, Joachim Bos, Tobias Melz</i>	
<b>LOW FREQUENCY SOUND TRANSMISSION OF STIFFENED PANELS</b> .....	5691
<i>Hyun-Sil Kim, Jae-Seung Kim, Seong-Hyun Lee, Yun-Ho Seo</i>	
<b>MEASUREMENT OF STRUCTURAL INTENSITY USING AN ANGULAR RATE SENSOR</b> .....	5699
<i>Nobuaki Omata, Hiroki Nakamura, Yoshiyuki Waki, Atsushi Kitahara, Toru Yamazaki</i>	
<b>EXPERIMENTAL AND NUMERICAL TOOLS FOR THE CHARACTERIZATION OF ULTRASONIC PROPAGATION FOR NUCLEAR REACTOR APPLICATION</b> .....	5709
<i>Nicolas Van De Wyer, Christophe Schram, Dries Van Dyck, Marc Dierckx</i>	

### **P2 VIBRATION IN BRIDGES, FOOT BRIDGES AND SIMILAR STRUCTURES**

<b>MODAL FLOOR PARAMETERS AND THEIR CORRELATION WITH FOOTFALL VIBRATION</b> .....	5719
<i>Dominik Duschlbauer, Aaron Miller</i>	
<b>A REVIEW OF IMPACT DAMPERS TO CONTROL CROSS WIND VIBRATION OF STRUCTURES DUE TO VORTEX SHEDDING</b> .....	5729
<i>Leonard L. Koss, William H. Melbourne</i>	
<b>MINI-TRAMPOLINE VIBRATION EXCITER- FORCE MEASUREMENTS</b> .....	5737
<i>Leonard L. Koss, Vincent Rouillard</i>	

## **VOLUME 8**

<b>RESEARCH ACTIVITIES ON INCE/J RTV (ROAD TRAFFIC VIBRATION)-MODEL - PART: 2 PREDICTION OF GROUND-BORNE VIBRATION INDUCED BY TRAFFIC FROM CUTTING- AND BANKING-STRUCTURE ROADS -</b> .....	5744
<i>Sunao Kunimatsu, Yasutoshi Kitamura, Akinori Yokota, Hidenobu Uchida, Masayuki Shimura, Yasuyuki Sano, Toshikazu Osafune, Hiroshi Iwabuki, Riei Ishida, Yoshihiro Hirao</i>	
<b>RESEARCH ACTIVITIES ON INCE/J RTV (ROAD TRAFFIC VIBRATION)-MODEL PART: 1 PREDICTION OF ROAD TRAFFIC VIBRATION FOR ELEVATED ROADS</b> .....	5754
<i>Masayuki Shimura, Noboru Kamiakito, Saiji Fukada, Yasuyuki Sano, Yasunao Matsumoto, Toshikazu Osafune, Hiroshi Iwabuki, Akito Yabe, Hirokazu Hama</i>	
<b>VIBRATION INSULATION OF FOOTBRIDGES SO AS TO REDUCE HUMAN DISCOMFORT</b> .....	5764
<i>Anders Sjoström, Christin Clausen, Victor Ingemansson, Per-Erik Austrel, Kent Persson, Goran Sandberg, Delphine Bard, Colin Novak, Helen Ule</i>	

### **K1B NOISE BARRIERS**

<b>ON THE EFFECT OF SHEAR AND BIAS FLOW ON THE PERFORMANCE OF ACOUSTIC LINERS</b> .....	5772
<i>L. M. B. C. Campos, C. Legendre, C. Sambuc</i>	
<b>ON ENHANCED SOUND ABSORPTION BY NON-UNIFORM LINERS</b> .....	5780
<i>L. M. B. C. Campos, J. M. G. S. Oliveira</i>	

<b>AN EXPERIMENTAL INVESTIGATION OF CAVITY NOISE CONTROL USING MISTUNED HELMHOLTZ RESONATORS</b> .....	5789
<i>V. Surya Narayana Reddi Chintapalli, Chandramouli Padmanabhan</i>	
<b>THE EFFECTIVENESS OF PARTICLE DAMPING FOR USE ON VERTICAL SURFACES</b> .....	5795
<i>Mark Ott, Jeff Weisbeck, Samir N. Y. Gerges, Marcelo Bustamante</i>	

### **N9B IMPACT NOISE IN BUILDINGS**

<b>DESIGN AND ACOUSTIC PERFORMANCE OF A SPRING ISOLATED OUTDOOR ROOFTOP BASKETBALL COURT</b> .....	5805
<i>Alex Campbell, Lloyd Cosstick, Timothy Murray, David Yates</i>	
<b>MEASURING LN WITHOUT USING A TAPPING MACHINE?</b> .....	5814
<i>George Dodd, Benjamin Yen</i>	
<b>COMPARING LOW FREQUENCY IMPACT NOISE USING A TAPPING MACHINE AND HEAVY/HARD IMPACT SOURCE ON VARIOUS FITNESS FLOOR ASSEMBLIES</b> .....	5820
<i>Paul Gartenburg</i>	
<b>ACCURACY OF PREDICTION METHODS FOR IMPACT SOUND PRESSURE LEVELS</b> .....	5826
<i>Daniel Griffin</i>	
<b>EFFECT OF MODULATION ON PERCEIVED ANNOYANCE OF FLOOR IMPACT NOISE</b> .....	5836
<i>Sinyeob Lee, Dukyoung Hwang, Junhong Park</i>	
<b>FLANKING TRANSMISSION IN THREE DIFFERENT LIGHTWEIGHT WOODEN BUILDING TYPES</b> .....	5840
<i>Anders Sjostrom, Juan Negreira, Delphine Bard, Goran Sandberg, Colin Novak, Helen Ule</i>	
<b>DIRECT IMPACT SOUND INSULATION OF CROSS LAMINATE TIMBER FLOORS WITH AND WITHOUT TOPPING</b> .....	5846
<i>Berndt Zeitler, Stefan Schoenwald, Ivan Sabourin</i>	

### **D9B MUFFLERS AND SILENCERS**

<b>ACOUSTIC TWO-PART SIMULATION MODEL FOR THE PARTICLE OXIDATION CATALYST (POC<sup>®</sup>)</b> .....	5852
<i>Antti Hynninen, Mats Abom</i>	
<b>PERFORMANCE ANALYSIS OF A SUCTION MUFFLER IN A HERMETIC RECIPROCATING COMPRESSOR USING CAA TECHNIQUES BASED ON LATTICE BOLTZMANN METHOD</b> .....	5859
<i>Songjune Lee, Cheolung Cheong</i>	
<b>HYBRID COUPLING METHOD TO NONLINEAR ACOUSTIC SOURCE AND LINEAR DUCT SYSTEM IN COMPRESSOR</b> .....	5866
<i>Seungjae Oh, Semyung Wang</i>	
<b>SOUND ATTENUATION USING DUCT SILENCERS WITH MICRO-PERFORATED PANEL ABSORBERS</b> .....	5874
<i>Xiang Yu, Li Cheng, Yuhui Tong, Jie Pan</i>	

### **F1B NOISE EVENTS FROM TRANSPORTATION NOISE**

<b>SMART SOUND MONITORING FOR SOUND EVENT DETECTION AND CHARACTERIZATION</b> .....	5882
<i>Bert De Coensel, Dick Botteldooren</i>	
<b>INFLUENCE OF LOUDNESS OF NOISE EVENTS ON PERCEIVED SOUND QUALITY IN URBAN CONTEXT</b> .....	5892
<i>Pauline Delaitre, Catherine Lavandier, Carlos Ribeiro, Mathias Quoy, Ellie D'Hondt, Elisa Gonzalez Boix, Kennedy Kambona</i>	
<b>SOUND EXPOSURE LEVELS FROM TRAINS AND SLEEP DISTURBANCE</b> .....	5902
<i>J. Jabben, C. Potma</i>	
<b>MOBILITY AND LIFE QUALITY RELATIONSHIPS - MEASUREMENT AND PERCEPTION OF NOISE IN URBAN CONTEXT</b> .....	5910
<i>Nicolas Misdariis, Regis Marchiano, Patrick Susini, Francois Ollivier, Raphael Leiba, Jacques Marchal</i>	
<b>TOWARDS NEW LESS NOISY MOBILITY PATTERNS IN CITIES</b> .....	5921
<i>Henk Wolfert</i>	

### **R3 NUMERICAL METHODS – INTERACTION WITH SUBMERGED STRUCTURES**

<b>AN ANALYTICAL SUBSTRUCTURE METHOD FOR THE ANALYSIS OF VIBRATION CHARACTERISTICS ON CONICAL-CYLINDRICAL-SPHERICAL COMBINED SHELLS IN VACUUM</b> .....	5928
<i>Meixia Chen, Kun Xie, Jianhui Wei, Naiqi Deng</i>	
<b>MOVING BOUNDARY SIMILARITY METHOD AND ITS APPLICATION ON SHIP STRUCTURAL BORNE NOISE PREDICTION</b> .....	5938
<i>Fu-Zhen Pang, Xu-Hong Miao, Dong Tang, Hong-Bao Song</i>	
<b>LATTICE-BOLTZMANN SIMULATION OF CIRCULAR COLUMN COUPLED WITH SQUARE COLUMN IN CROSS FLOW</b> .....	5948
<i>Dongyan Shi, Hongqun Li, Zhikai Wang, Han Jiao</i>	
<b>SOUND RADIATION FROM NESTED CYLINDRICAL SHELLS</b> .....	5956
<i>Hongjian Wu, Herwig Peters, Nicole Kessissoglou</i>	

<b>WAVE BASED METHOD FOR VIBRATION AND ACOUSTIC CHARACTERISTICS ANALYSIS OF UNDERWATER CYLINDRICAL SHELL WITH BULKHEADS</b> .....	5965
<i>Kun Xie, Meixia Chen, Naiqi Deng, Kun Xu</i>	
<b>THE STUDY ON SOUND RADIATION OF SEMI-SUBMERGED CYLINDRICAL WITH ANTISYMMETRIC VELOCITY DISTRIBUTION</b> .....	5975
<i>Junjie Zhang</i>	

### **K3 NOISE CONTROL WITHIN OFFSHORE FACILITIES AND MARITIME VESSELS**

<b>ISOLATOR INTERNAL RESONANCE AND RADIATED NOISE FROM SHIPS</b> .....	5981
<i>Paul Dylejko, Ian Macgillivray, Alex Skvortsov</i>	
<b>A METHOD FOR DEMONSTRATION OF ALARP FOR NOISE CONTROL</b> .....	5991
<i>Paul Keswick, James McLoughlin, Greg Stewart</i>	
<b>VERIFICATION OF A DUCT RESONATOR ARRAY FOR LARGER PIPE DIAMETERS</b> .....	5996
<i>Michael James Newman, Maria Garrido, Zheji Liu, Andre-Pierre Ryliskis, Julien Colette, Inigo Eugui, Ole Georg Haaheim</i>	

### **Q2G NUMERICAL METHODS IN VIBRO-ACOUSTICS**

<b>ANALYSIS OF ACOUSTIC RADIATION OF A RING-STIFFENED CYLINDRICAL SHELL IN UNDERWATER BASED ON PRECISE INTEGRATION TRANSFER MATRIX METHOD</b> .....	6000
<i>Fuzhen Pang, Chuang Wu, Qingshan Wang, Hongbao Song</i>	
<b>FREE VIBRATION ANALYSIS OF ORTHOTROPIC RECTANGULAR MINDLIN PLATES WITH GENERAL ELASTIC BOUNDARY CONDITIONS</b> .....	6010
<i>Dongyan Shi, Zhong Zhuang, Tianmu Zhang</i>	
<b>RESEARCH ON VIBRATION AND ACOUSTIC RADIATION OF PLANETARY GEARBOX HOUSING</b> .....	6019
<i>Tianmu Zhang, Dongyan Shi, Zhong Zhuang</i>	

### **PLENARY 2**

<b>SOUNDSCAPE PLANNING AS A COMPLEMENT TO ENVIRONMENTAL NOISE MANAGEMENT</b> .....	6029
<i>A. L. Brown</i>	

### **FOYER POSTERS**

<b>A NOISY VEHICLE SURVEILLANCE CAMERA (NOVELCAM) SYSTEM</b> .....	6039
<i>Apoorv Agha, Woon-Seng Gan, Yong-Kim Chong, Boon-Wee Ang</i>	
<b>REDUCING NOISE POLLUTION BY INCREASING SOUND ABSORPTION OF CARPETS</b> .....	6048
<i>Musa Akdere, Anke Hannig, Tanja Klietzing, Gunnar Seide, Thomas Gries</i>	
<b>A RESEARCH ON THE VALIDITY OF EXPRESSION METHOD OF SONIC ENVIRONMENT BY USING JAPANESE ONOMATOPOEIAS</b> .....	6054
<i>Takeshi Akita, Sohei Tsujimura, Naoko Sano, Takaaki Koga</i>	
<b>A STUDY OF PAVEMENT NOISE FOR ASPHALT PAVEMENTS WITH DIFFERENT SERVICE LIFE IN NATIONAL HIGHWAY</b> .....	6059
<i>Deoksoon An, Jaeyun Lee, Byungsik Ohm, Hyeonjang Son, Sooahn Kwon</i>	
<b>UNDERWATER ACOUSTIC PASSIVE LOCALIZATION BASE ON MULTIPATH ARRIVAL STRUCTURE</b> .....	6066
<i>Liang An, Lijun Chen</i>	
<b>VIRTUAL SENSING IN THE REVERBERANT FIELD BASED ON THE HARMONIC SIGNAL FROM THE EMITTING SOURCE</b> .....	6075
<i>Marco Aurelio B. C. Badan, Marcus A. V. Duarte, Joao G. O. Miranda, Pedro P. R. Nishida</i>	
<b>A SOUNDSCAPE RESEARCH ON THE ROUTE GEZI PARK-TUNEL SQUARE</b> .....	6084
<i>Serean Bahali, Nurgun Tamer Bayazit</i>	
<b>ACTIVE REDUCTION OF SOUND TRANSMISSION IN AIRCRAFT CABINS: A SMARTER USE OF VIBRATION EXCITERS</b> .....	6093
<i>Romain Boulandet, Marc Michau, Philippe Mischeau, Alain Berry</i>	
<b>PRACTICAL CONSIDERATION OF NOISE FROM FANS</b> .....	6102
<i>Charles Burgess, Rhys Thompson</i>	
<b>ROBUST TIME-DOMAIN ACOUSTIC CONTRAST CONTROL DESIGN UNDER UNCERTAINTIES IN THE FREQUENCY RESPONSE OF THE LOUSPEAKERS</b> .....	6110
<i>Yefeng Cai, Li Liu, Ming Wu, Jun Yang</i>	
<b>A TRIPLE MICROPHONE ARRAY FOR SURROUND SOUND RECORDING</b> .....	6116
<i>Rilin Chen, Pengxiao Teng, Yichun Yang</i>	
<b>A NEW METHOD FOR MONITORING FAR-FIELD NOISE LEVEL WITH A FEW NEAR-FIELD SENSORS</b> .....	6123
<i>Xiaobin Cheng, Xun Wang, Jun Yang, Jing Tian</i>	
<b>APPLICATION OF DISTURBANCE-OBSERVER-TYPE VELOCITY ESTIMATOR TO ELECTROACOUSTIC ABSORBER FOR NOISE ABSORBING</b> .....	6129
<i>Youngeon Cho, Semyung Wang, Kihwan Park</i>	

<b>EXPERIMENTAL APPROACH ON TRANSMISSION OF LOW-FREQUENCY SOUND INTO A BUILDING</b> .....	6138
<i>Tetsuya Doi, Keiichiro Iwanaga, Yusuke Naka</i>	
<b>OBJECTIVE COMPARISON BETWEEN AMBISONICS BASIC DECODING AND A SIRR-BASED PARAMETRIC DECODING IN THE CONTEXT OF CONCERT HALL AURALIZATION</b> .....	6146
<i>Juan Pablo Espiña Hurtado, Jean-Dominique Polack, Olivier Warusfel</i>	
<b>WIND TURBINE NOISE: PRACTICAL IMMISSION MEASUREMENTS</b> .....	6156
<i>Benoit Fauville, Francis Moiny</i>	
<b>THE EMPIRICAL ASSESSMENT OF HUMAN VIBRATION PROPAGATED IN BUILDING AND HVAC SYSTEMS</b> .....	6163
<i>Farhad Forouharmajd, Masoumeh Ahmadvand</i>	
<b>EVALUATION OF CLIPPING-NOISE SUPPRESSION OF STATIONARY-NOISY SPEECH BASED ON SPECTRAL COMPENSATION</b> .....	6171
<i>Takahiro Fukumori, Makoto Hayakawa, Masato Nakayama, Takanobu Nishiura, Yoichi Yamashita</i>	
<b>A STUDY OF DEGRADED-SPEECH IDENTIFICATION BASED ON SPECTRAL CENTROID</b> .....	6176
<i>Takayuki Furoh, Takahiro Fukumori, Masato Nakayama, Takanobu Nishiura</i>	
<b>FOOTPRINT ANALYSIS CONCERNING NOISE: APPROACHES, TOOLS AND OPPORTUNITIES</b> .....	6182
<i>Michele Goretti, Franco Cotana</i>	
<b>ONE-DIMENSIONAL UNIDIRECTIONAL ACOUSTIC BOUNDARY THROUGH ACTIVE CONTROL METHOD</b> .....	6192
<i>Ning Han, Jiancheng Tao</i>	
<b>RAILWAY NOISE IMPACT ASSESSMENT: AN OVERVIEW OF THE RAILWAY NOISE AND VIBRATION RESEARCH PROJECT IN SOUTH KOREA</b> .....	6201
<i>Jiyoung Hong, Hyo-In Koh, Seungho Jang, Soogab Lee</i>	
<b>DESIGN SENSITIVITY ANALYSIS OF THE ACOUSTIC DISPERSION RELATIONS</b> .....	6206
<i>Jaeyub Hyun, Semyung Wang</i>	
<b>A DESIGN OF COMFORTABLE DENTAL TREATMENT SOUND BASED ON AUDITORY MASKING</b> .....	6212
<i>Daisuke Ikefuji, Yuko Suhara</i>	
<b>IMPROVEMENT OF PC HEARING SUPPORT SYSTEM: THE USE OF ONE-USB-OS</b> .....	6218
<i>Manabu Ishihara, Yuichi Ono, Mitsuomi Ideo, Tomokazu Sato</i>	
<b>EXPERIMENT AND STUDY OF TACTILE CHARACTERISTICS RESULTING FROM VIBRATION OF A TOUCH PANEL</b> .....	6223
<i>Manabu Ishihara, Shin-Nosuke Suzuki, Masashi Yoshida, Jun Shirataki, Kazutaka Itako</i>	
<b>DEVELOPMENT OF GPGPU-BASED INTERACTIVE SIMULATION FOR NUMERICAL ANALYSIS OF SOUND WAVE PROPAGATION</b> .....	6229
<i>Naoki Kawada, Kan Okubo, Norio Tagawa, Takao Tsuchiya</i>	
<b>THE STUDY ON THE WOOFER SPEAKER CHARACTERISTICS DUE TO DESIGN PARAMETERS</b> .....	6234
<i>Byoung-Sam Kim, Jin-Young Park, Xu Yang, Tae-Keun Lee, Hongtu Sun</i>	
<b>A STUDY ON THE PREDICTION OF THE NOISE REDUCTION PERFORMANCE ACCORDING TO APPLYING THE RAIL WEB-DAMPER IN CURVED TRACK SECTION</b> .....	6242
<i>Jinho Kim</i>	
<b>BEAT PERIOD CONTROL OF BELL SOUND USING AN OPERATIONAL MODAL ANALYSIS</b> .....	6248
<i>Seockhyun Kim, Joong Hyeok Lee, Jeong Tae Kim</i>	
<b>MEASUREMENT OF TEMPERATURE DEPENDENCE IN THE PIEZOELECTRIC ACTIVE ELEMENT OF A KNOCK SENSOR</b> .....	6253
<i>Stanislav Klusacek, Jiri Fialka, Zdenek Havranek, Petr Benes, Stanislav Pikula</i>	
<b>CHARACTERISTICS OF POLYMERIC INTERLAYER FILMS AND ITS IMPACT ON ACOUSTICAL PERFORMANCE OF LAMINATED GLASS</b> .....	6260
<i>Sangwon Ko, Jiyoung Hong, Hyo-In Koh</i>	
<b>BOOTSTRAP MASKER GENERATION METHOD FOR SPEECH MASKING SYSTEMS</b> .....	6261
<i>Yosuke Kobayashi, Kazuhiro Kondo</i>	
<b>EVALUATION ON FLEXIBLE BEAMFORMERS WITH CURVED-TYPE PARAMETRIC LOUDSPEAKER FOR SPATIAL AUDIBLE AREA DESIGN</b> .....	6269
<i>Shinya Komori, Daisuke Ikefuji, Masato Nakayama, Takanobu Nishiura</i>	
<b>A DESIGN OF REFLECTIVE AUDIO SPOT WITH PARABOLIC REFLECTOR FOR SOUND PRESSURE IMPROVEMENT ON SEPARATING EMISSION OF CARRIER AND SIDEBAND WAVES</b> .....	6275
<i>Ryosuke Konabe, Tadashi Matsui, Daisuke Ikefuji, Masato Nakayama, Takanobu Nishiura</i>	
<b>INVESTIGATION OF VIBRATION TRANSMISSION PROPERTIES OF COMPRESSOR GROMMETS IN DOMESTIC REFRIGERATORS</b> .....	6282
<i>Aleks Kuyumcuoglu, Ozgun Sakalli</i>	
<b>INTEGRATED TEST SYSTEM FOR TYRE/ROAD NOISE - ISO/DIS 11819-2 AND AASHTO TP76-12 METHODS</b> .....	6290
<i>Xun Li, Vincent Lim</i>	
<b>RELATIONSHIP BETWEEN SOUNDSCAPE AND HISTORICAL-CULTURAL ELEMENTS OF HISTORICAL AREAS IN BEIJING: A CASE STUDY OF QIANMEN AVENUE</b> .....	6297
<i>Aili Liu, Fucheng Liu, Zhiyong Deng, Wanli Chen</i>	
<b>APPLICATION OF FRACTAL DIMENSION TO THE EVALUATION OF ENVIRONMENTAL SOUND</b> .....	6304
<i>Yoshiaki Makabe, Kenji Muto</i>	
<b>MULTIPLE AUDIO SPOTS DESIGN BASED ON SEPARATING EMISSION OF CARRIER AND SIDEBAND WAVES</b> .....	6313
<i>Tadashi Matsui, Daisuke Ikefuji, Masato Nakayama, Takanobu Nishiura</i>	

<b>EFFECTIVENESS OF BACKGROUND MUSIC FOR NOISES IN HOSPITAL WARDS</b> .....	6318
<i>Junko Matsumoto, Akira Tagaya</i>	
<b>NUMERICAL ANALYSIS OF SOUND WAVE PROPAGATION USING CIP-MOC METHOD WITH NON-UNIFORM GRID</b> .....	6322
<i>Yuta Matsumura, Kan Okubo, Norio Tagawa, Takao Tsuchiya, Takashi Ishizuka</i>	
<b>BASIC STUDY ON IMPROVEMENT OF STAGE ACOUSTICS BY ACTIVE METHOD</b> .....	6329
<i>Takuma Matsuo, Takane Terashima, Ayumi Ishikawa</i>	
<b>PRIVACY PROTECTION METHOD FOR SPEECH USING SMALL SPEAKERS PLACED AROUND A HEAD</b> .....	6335
<i>Maya Mochizuki, Ayumu Osumi, Youichi Ito</i>	
<b>CHARACTERIZING THE ECOLOGY OF THE ABORIGINAL SOUNDSCAPE</b> .....	6341
<i>Bruce R. Muir</i>	
<b>DETERMINING NOISE EFFECTS FROM INDUSTRIAL DEVELOPMENT ON ABORIGINAL SOUNDSCAPES: INSIGHT INTO BEST PRACTICES</b> .....	6350
<i>Bruce R. Muir</i>	
<b>A STUDY OF THE POSITION OF THE REFERENCE MICROPHONE OF ACTIVE NOISE CONTROL OF FEEDFORWARD TYPE FOR MRI NOISE</b> .....	6359
<i>Kenji Muto, Shohei Nakayama, Ryosuke Osada, Kazuo Yagi, Guoyue Chen</i>	
<b>EFFICIENCY EVALUATION OF SUBSPACE-BASED SPECTRAL SUBTRACTION BASED ON ITERATIVE EIGENVALUE ANALYSIS IN REAL ENVIRONMENTS</b> .....	6365
<i>Yuki Nagano, Takahiro Fukumori, Masato Nakayama, Takanobu Nishiura</i>	
<b>HIGH ACCURACY CALCULATING MODEL FOR SOUND FIELD SIMULATION WITH DFT-BASED FDTD ON POLAR-QUATERNION-BASED AXIS TOWARDS CRAFT RESTORATION</b> .....	6371
<i>Kota Nakano, Masato Nakayama, Takanobu Nishiura, Yoichi Yamashita</i>	
<b>NARROW AREA CONTROL FOR INDIVIDUAL SOUND IMAGE GENERATION BY COMBINING NBSFC AND LINER LOUDSPEAKER ARRAY</b> .....	6379
<i>Yumiko Nakayama, Yosuke Tatekura</i>	
<b>SENSITIVITY ANALYSIS OF SOURCE REGION SIZE ON RESULTS OF STOCHASTIC NOISE GENERATION AND RADIATION MODEL</b> .....	6387
<i>Pavel Niedoba, Jaroslav Bajko, Miroslav Jicha, Libor Cermak</i>	
<b>AN EVALUATION ON COMFORTABLE SOUND DESIGN OF UNPLEASANT SOUNDS BASED ON CHORD-FORMING WITH BANDLIMITED SOUND</b> .....	6394
<i>Yoshitaka Ohshio, Daisuke Ikefuji, Masato Nakayama, Takanobu Nishiura</i>	
<b>STUDY OF ENHANCED SOUND-ABSORBING PERFORMANCE FOR POLYURETHANE FOAM WHICH CARBON NANO-TUBE IS APPLIED</b> .....	6400
<i>Jang-Seok Park, Kyoung-Min Choi, Jung-Wook Lee</i>	
<b>MANAGEMENT POLICY ON COMMUNITY NOISE TO IMPROVE THE QUALITY OF LIFE - FOCUSED ON APARTMENT NOISE</b> .....	6401
<i>Young Min Park, Kyoung Min Kim</i>	
<b>MODELING SOUND RADIATION FROM A BAFFLED VIBRATING PLATE FOR DIFFERENT BOUNDARY CONDITIONS USING AN ELEMENTARY SOURCE TECHNIQUE</b> .....	6405
<i>Azma Putra, Nurain Shyfiina, David Thompson, Noryani Muhammad, Mohd Jailani Mohd Nor, Zaki Nuawi</i>	
<b>ON FREQUENCY CHARACTERISTICS OF BONE CONDUCTION ACTUATORS BY MEASURING LOUDNESS, ACCELERATION AND OTOACOUSTIC EMISSION</b> .....	6413
<i>Xiuyuan Qin, Yoshifumi Chisaki, Tsuyoshi Usagawa</i>	
<b>BASIC STUDY ON INSET POSITION OF STACK IN THE SYSTEM WITH BRANCH TUBES FOR APPLYING THERMOACOUSTIC SILENCER TO MULTI CYLINDER ENGINE MUFFLER</b> .....	6420
<i>Shin-Ichi Sakamoto, Satoshi Kawamoto, Yuichiro Oriono, Yoshitaka Ota, Yoshitaka Inui, Yoshiaki Watanabe</i>	
<b>THE INFLUENCE OF THE LOAD CONDITION UPON THE RADIAL DISTRIBUTION OF ELECTROMAGNETIC VIBRATION AND NOISE IN A THREE-PHASE SQUIRREL-CAGE INDUCTION MOTOR</b> .....	6425
<i>Yuta Sato, Isao, Hirotsuka, Kazuo Tsuboi, Masanori, Nakamura, Akihiko Iguchi, Daisuke Hayashi, Yousuke Takahashi</i>	
<b>AN IMPEDANCE TUBE MEASUREMENT TECHNIQUE FOR CONTROLLING ELASTIC BEHAVIOR OF TEST SAMPLES</b> .....	6431
<i>Toshikazu Satoh, Masateru Kimura, Michiyuki Yamaguchi, Jason Kunio</i>	
<b>IMPEDANCE MATRIX OF RUBBER-CORD FLUID-FILLED HOSE</b> .....	6441
<i>Aleksei Sokolov</i>	
<b>A STUDY OF TRAFFIC NOISE CHARACTERISTIC OF PAVEMENT TYPES USING NCPX METHOD</b> .....	6447
<i>Hyeon-Jang Son, Deok-Soon An, Jae-Jun Lee, Yong-Joo Kim</i>	
<b>BREATHING MECHANISM OF A CRACKED ROTOR SUBJECT TO NON-TRIVIAL MASS UNBALANCE</b> .....	6453
<i>Joseph Patrick Spagnol, Helen Wu</i>	
<b>ENVIRONMENTAL IMPACT ASSESSMENT OF ROAD NOISE WITH NOISE MAP IN KOREA</b> .....	6460
<i>Hyosung Sun</i>	
<b>SURVEY ON VEHICLE HORN USE IN URBAN AREAS OF KOREA</b> .....	6462
<i>Masayuki Takada, Satoshi Suzuki, Ki-Hong Kim, Shin-Ichiro Iwamiya</i>	
<b>THE EFFECTS OF THE AIRCRAFT NOISE AND MULTIPLE ECHOES ON SPEECH INTELLIGIBILITY OF OUTDOOR PUBLIC ADDRESS SYSTEM</b> .....	6472
<i>Koki Takanashi, Nao Hodoshima</i>	
<b>HIGH DIRECTIVITY MASKING SOUND SYSTEM FOR ACHIEVING SPEECH PRIVACY</b> .....	6477
<i>Takahiro Tamesue, Testuro Saeki</i>	



<b>PRIORITY OF SUBJECTIVE ATTRIBUTE IN DISCRIMINATION BETWEEN SOUND FIELDS OF ARCHITECTURAL SPACES</b> .....	6484
<i>Takane Terashima, Ayumi Ishikawa, Yasunobu Tokunaga</i>	
<b>INFLUENCE OF VISUAL INFORMATION ON SUBJECTIVE EVALUATION OF ROAD TRAFFIC NOISE</b> .....	6490
<i>Yosunobu Tokunaga, Takane Terashima, Ayumi Ishikawa</i>	
<b>RONDA - CPX TRAILER INITIAL TEST RESULTS</b> .....	6495
<i>Renzo Tonin, Attila Szabo</i>	
<b>USING THE INTERPOLATION IN THE DIN EN ISO 17201-1</b> .....	6501
<i>Mattias Trimpop</i>	
<b>INVESTIGATION ON HIGH-FREQUENCY NOISE IN PUBLIC SPACE</b> .....	6507
<i>Mari Ueda, Atsushi Ota, Hironobu Takahashi</i>	
<b>A STUDY ON 3-D SOUND FIELD LOCALIZATION SYSTEM USING PARAMETRIC LOUDSPEAKER AND INDIRECT LOUDSPEAKERS FOR REVERBERATION REPRODUCTION</b> .....	6514
<i>Tomoyuki Wada, Daisuke Ikefuji, Masato Nakayama, Takanobu Nishiura</i>	
<b>VEHICLE SUSPENSION AND STEERING NONLINEAR INTEGRATED SYSTEM COORDINATED CONTROL BASED ON HUMAN-VEHICLE FUNCTION ALLOCATION</b> .....	6521
<i>Hongbo Wang, Liuqing Yang, Yanping Hu</i>	
<b>NUMERICAL AND EXPERIMENTAL ANALYSIS OF THE EFFECTIVENESS OF MATERIAL COMPOSITION OF PIEZOELECTRIC ELEMENTS WITH CHOSEN SHAPES ON PLATE VIBRATION REDUCTION</b> .....	6530
<i>Jerzy Wiciak, Roman Trojanowski, Margareta Wiciak</i>	
<b>RESEARCH ON THE DIRECTIVE PROPERTY CONTROL FOR A PHASED RECTANGULAR LOUDSPEAKER ARRAY</b> .....	6538
<i>Xuezhong Xu, Zhang Cheng, Houlin Fang, Junmei Yang, Deyu Sun, Liangyong Zhang</i>	
<b>LOCALIZATION OF MULTIPLE ENVIRONMENTAL SOUND SOURCES BY MUSIC METHOD WITH WEIGHTED HISTOGRAM</b> .....	6546
<i>Mari Yamamoto, Yosuke Tatekura</i>	
<b>INFLUENCES OF WHOLE-BODY VIBRATION ON ROUGHNESS SENSATION</b> .....	6555
<i>Makiko Yonehara, Hirokazu Yoshino, Junya Tatsuno, Setsuo Maeda, Hideki Kyogoku</i>	
<b>ON A BINAURAL MODEL WITH FRONT-BACK DISCRIMINATOR USING ARTIFICIAL NEURAL NETWORK TRAINED BY MULTIPLE HRTF CATALOGS</b> .....	6565
<i>Shun Yoshino, Takuro Tomita, Yoshifumi Chisaki, Tsuyoshi Usagawa</i>	
<b>Author Index</b>	