

## Congress master schedule

### **Saturday, 12th**

09:00h – 12:00h	Congress Selection Committee Meeting	Short Course on Auralization (Part 1)
13:00h – 19:30h	I-INCE Board Meeting	Short Course on Auralization (Part 2)

### **Sunday, 13th**

09:00h – 13:30h	Short Course on Room acoustics	Short Course on Psychoacoustics and quality of products
15:00h – 16:45h	I-INCE General assembly	
17:00h – 17:30h	Opening ceremony	
17:30h – 18:30h	Distinguished lecture 1	
18:30h – 20:00h	Welcome reception	Exhibition opening
20:30h – 23:00h	Chairs dinner *	

\* Buses depart from CCL at 20:00

### **Monday, 14th**

09:00h – 12:00h	Technical sessions	
12:00h – 13:00h	Distinguished lecture 2	
13:00h – 14:00h	Lunch	Poster session
14:00h – 18:00h	Technical sessions	CAETS Forum
20:00h – 21:30h	Port of Honor *	

\* Jardim do Torel, Lisboa

### **Tuesday, 15 th**

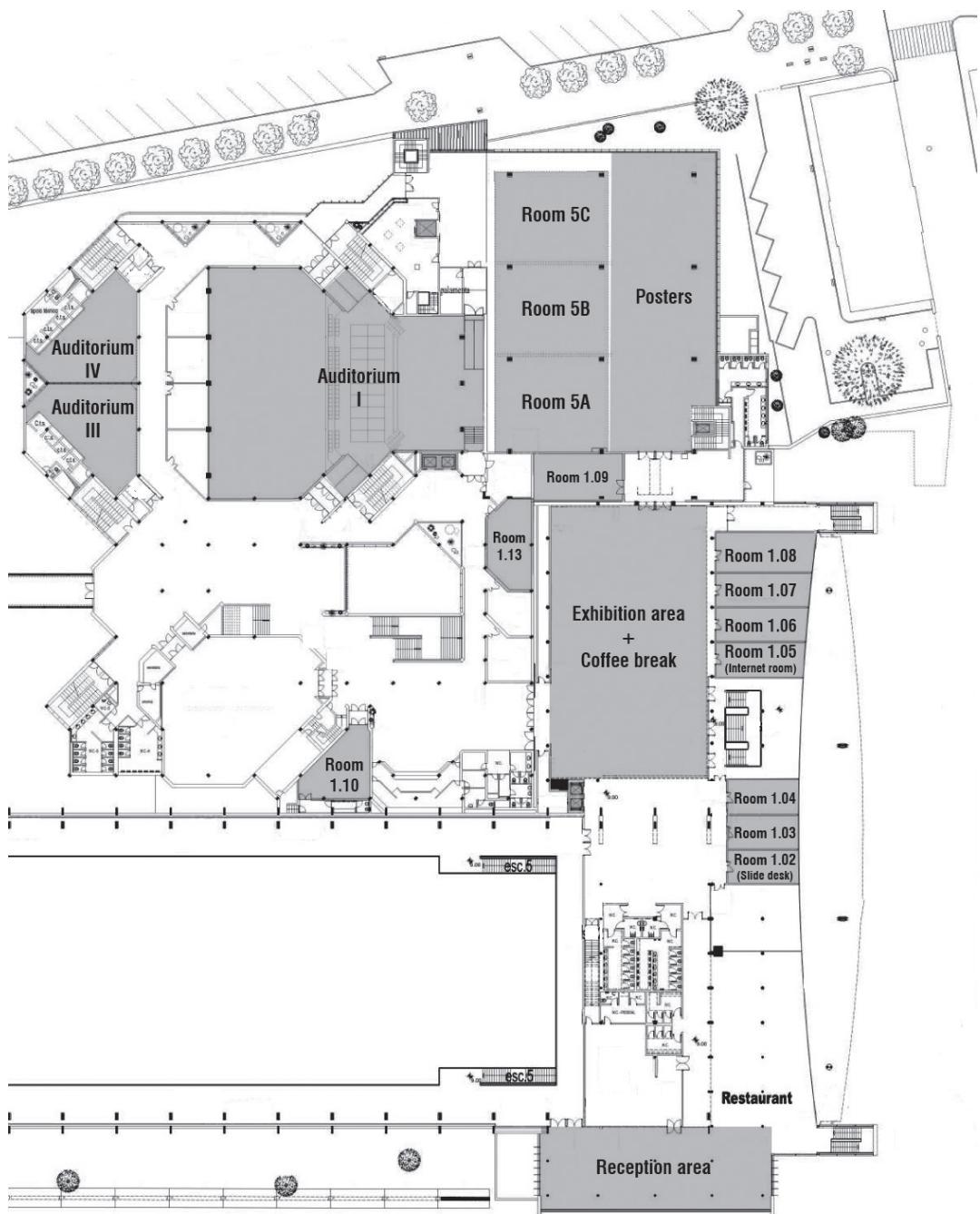
09:00h – 12:00h	Technical sessions	CAETS Forum	Workshop for young professionals
12:00h – 13:00h	Distinguished lecture 3		
13:00h – 14:00h	Lunch	Poster sessions	
14:00h – 18:00h	Technical sessions	CAETS Forum	
20:00h – 24:00h	Banquet *		

\* Buses depart from CCL at 19:00

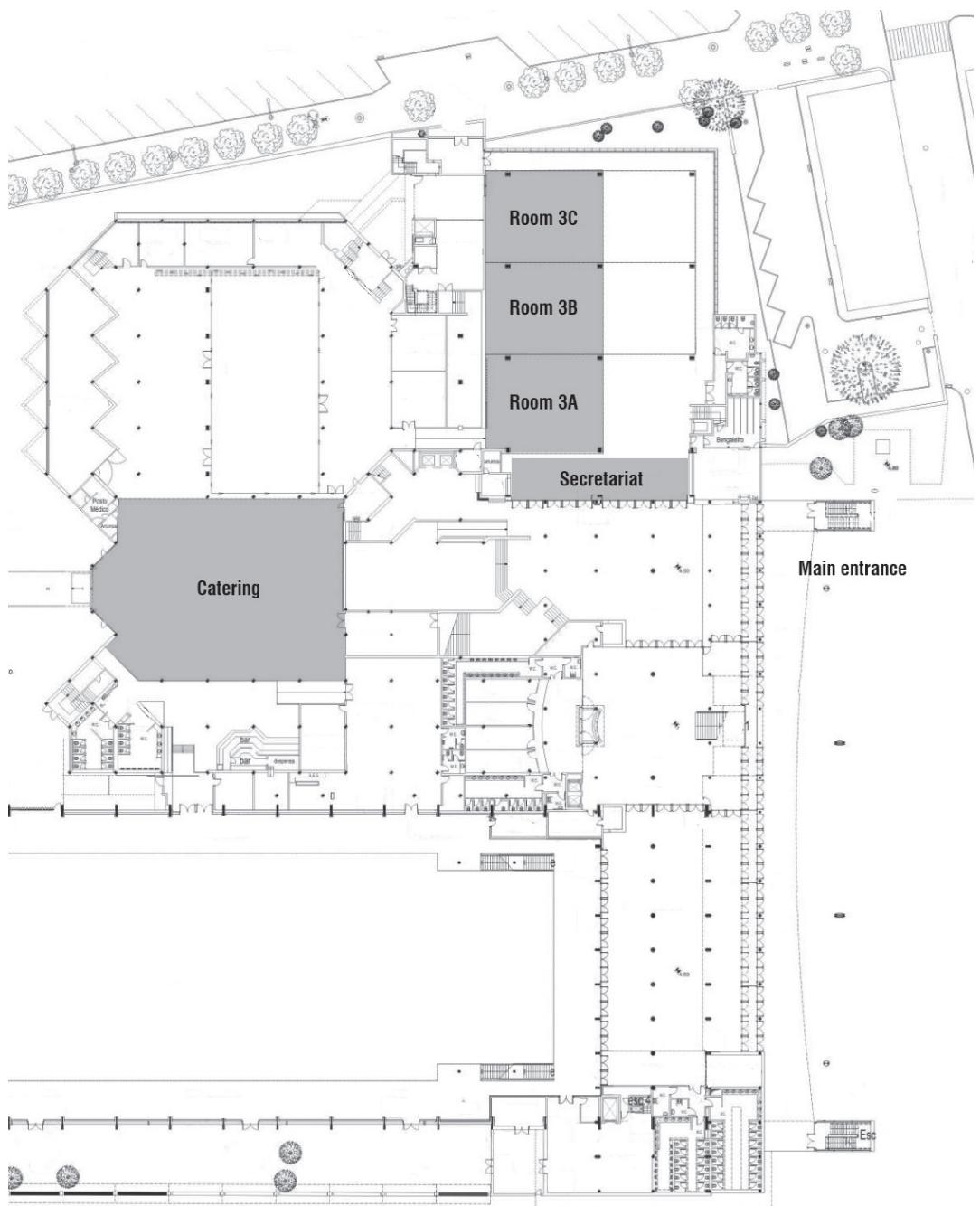
### **Wednesday, 16 th**

09:00h – 12:00h	Technical sessions	CAETS Forum	
12:00h – 13:00h	Distinguished lecture 4		
13:00h – 14:00h	Lunch		
14:00h – 17:00h	Technical sessions	FCTP meeting	Exhibition closure
17:00h – 18:00h	Distinguished lecture 5		
18:00h – 18:30h	Closing ceremony		
18:30h – 19:30h	Farewell reception		
19:30h – 20:30h	I-INCE Board meeting		

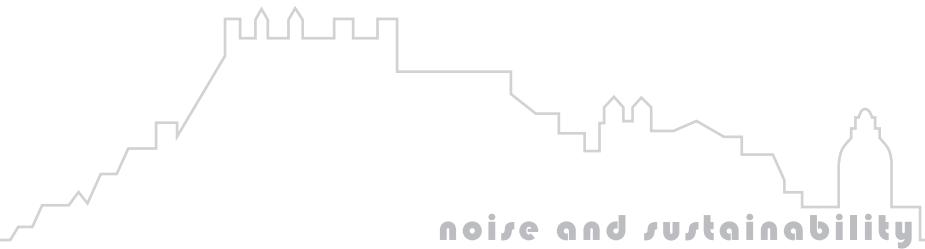
1<sup>st</sup> floor



## Ground floor



## notes



## Detailed program

## notes

**Sunday, 13 June**

Auditorium 1	
14:00	
	Registration
16:40	
17:00	Opening Ceremony
17:30	Distinguished Lecture - General view of road traffic noise problem

**Distinguished lecture**

**Auditorium 1**

**Session chair** Marion Burgess

17:30 id 1026

**General view of road traffic noise problem**

*Hideki Tachibana*

## notes

## Monday, 14 June

		Active noise and vibration control	Auditorium 1
	Occupational noise	Community response and exposure criteria in environmental situations	Auditorium 3
		Vibro-acoustic performance of structures and vehicles	Auditorium 4
		Asphalt rubber pavements - noise and sustainability	3A
		Noise from information technology equipment	3B
		Floor impact noise evaluation and control	3C
		Psychoacoustics and sound quality	5A
		Acoustical holography, imaging and beam forming	5B
		Airport noise (special session X-noise)	5C
		New directions in noise and health research	1.06
		Noise control materials	1.07
		Low frequency and airport ground noise	1.08
		Vibration Isolation and Damping	1.13
12:00		Distinguished lecture - Valuing noise nuisance	
13:00		Lunch	

Coffee break 10:30 to 11:30

**Active noise and vibration control****Auditorium 1****Session chairs****Joachim Scheuren****Jing Tian**

- 09:00** id 4 New filtered-x recursive least square algorithm for active noise control  
*F. Albu, C. Paleologu*
- 09:20** id 20 Robustness of a feedback active noise control  
*Nikolay G. Kanev, Mikhail A. Mironov, Alexey V. Gladilin* invited
- 09:40** id 52 Active minimization of harmonic sound pressure in a vibro-acoustic finite element model of a rectangular enclosure  
*Samira Mohamady, Allahyar Montazeri, Raja Kamil Raja Ahmad* invited
- 10:00** id 159 Comparison of passive and active methods for sound radiation minimalisation from the clamped plate  
*Michał M. Kozupa* invited
- 10:20** id 176 Robust virtual sensors for vibro-acoustic applications using structural sensing  
*Dunant Halim, Li Cheng, Zhong Q. Su*
- 10:40** id 188 Active control of flow-induced acoustic resonance through surface perturbation  
*Zhenbo Lu, Li Cheng, Dunant Halim*
- 11:00** id 206 Basic study on active acoustic shielding: phase 2 noise reducing performance for a small open window  
*Masaharu Nishimura, Tatsuya Murao, Nobutaka Wada*
- 11:20** id 215 Active noise and vibration control of a stripped car engine using different piezoelectric actuators  
*T. Luft, S. Ringwelski, U. Gabbert, W. Henze, H. Tschöke*
- 11:40** id 222 Adaptive feedforward control of smart CFRP-panels excited by a turbulent boundary layer  
*Malte Misol, Stephan Algermissen, Oliver Unruh*

**Distinguished lecture****Session chair****Bernard Berry**

- 12:00** id 610 **Valuing noise nuisance**  
*Abigail L. Bristow*

## Community response and exposure criteria in environmental situations

**Auditorium 3**

### Session chairs

Truls Gjestland

Larry Finegold

- |              |  |         |
|--------------|--|---------|
| <b>09:00</b> | id 154 Community response to airport noise: EU, ICAO and who views on exposure criteria<br><i>Vallet Michel</i>                              | invited |
| <b>09:20</b> | id 178 How to gain political and public interest for noise<br><i>Wouter Witteveen, Henk Wolfert</i>  | invited |
| <b>09:40</b> | id 377 New audio-visual approach for environmental noise assessment<br><i>L. Maffei, S. Iachini, M. Di Gabriele, S. Basturk, G. Ruggiero</i> |         |
| <b>10:00</b> | id 444 Aircraft noise annoyance what is the “correct” dose-response function<br><i>T. Gjestland</i>  | invited |
| <b>10:20</b> | id 817 Noise near NATO airbase<br><i>Dik Welkers</i>   | invited |

## Occupational noise

### Session chairs

Pedro Arezes

Samir Gerges

- |              |  |         |
|--------------|--|---------|
| <b>10:40</b> | id 48 Noise exposure assessment: some arguments regarding the simplification of ISO 9612 methods<br><i>Marc Asselineau, Aline Gaulupeau</i>  |         |
| <b>11:00</b> | id 60 Can threshold shift measurements at a single frequency reliably capture the main physiological responses of the hearing to occupational noise exposures?<br><i>Helmut Strasser, Hartmut Irle</i> | invited |
| <b>11:20</b> | id 83 Impact of different measurement strategies on occupational noise exposure results in industrial environments<br><i>Olga A. Mateus, Pedro M. Arezes, Carlos A. Bernardo</i>                       | invited |
| <b>11:40</b> | id 137 Early noise exposure and subsequent age related hearing loss: a review<br><i>Larry E. Humes</i>   | invited |

## Vibro-acoustic performance of structures and vehicles

**Auditorium 4**

### Session chairs

Paco Simon

Barry Gibbs

- |              |   |         |
|--------------|---|---------|
| <b>09:00</b> | id 6 Noise prediction for composite hull vessels<br><i>Leonid Boroditsky, Ray Fischer</i>   |         |
| <b>09:20</b> | id 109 Influence of gap thickness on the vibroacoustic response of satellite solar panels<br><i>J. López-Díez, F. Simón, M. Chimeno, J. J. Wijker</i>   | invited |
| <b>09:40</b> | id 187 Power transmission coefficients based on wavenumber processing of experimental modal analysis data for bolted honeycomb sandwich panels<br><i>Stephen A. Hambric, Andrew R. Barnard, Stephen C. Conlon</i> |         |
| <b>10:00</b> | id 238 A sandwich finite element for modeling of vehicle's windscreens<br><i>K. Bouayed, M-A. Hamdi, A. Omrani</i>  |         |
| <b>10:20</b> | id 258 Vibration reduction of an a/c compressor on an intercity bus<br><i>Yıldırım, O., Kurtdere, A., Yereser, G.</i>   |         |

- 10:40** id 288 Aircraft vibroacoustic perception threshold in a laboratory situation compared to ISO 2631/1997 standard  
*Ricardo L. Schaefer, Raquel F. Bitencourt, Júlio Alexandre M. S. Teixeira, Samir N. Y. Gerges* invited
- 11:00** id 425 Acoustic response of large size space antenna reflectors in the middle frequency range  
*A. Yarza, J. López-Díez, M. Chimeno, P. Simón, C. Terres, J. Santiago-Prowald*
- 11:20** id 463 Experimental analysis of bottom-seismic and hydroacoustic signals generated by river boats  
*Yury Zaslavsky, Vladislav Zaslavsky*
- 11:40** id 555 A study of sound source characteristics in active noise control and fault diagnosis  
*D. Zhen, Y. Fan, F. Gu, A. Ball*

**Asphalt rubber pavements - noise and sustainability****3 A**

Session chairs	Paul Donavan	Ulf Sandberg
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- 09:00** id 811 Introduction to asphalt-rubber pavement noise reducing characteristics  
*George B. Way, Douglas D. Carlson, Jorge B. Sousa, Kamil E. Kaloush, Krishna P. Bilgiri* invited
- 09:20** id 834 Summary of the AR2009 Conference with Special Focus on Noise and Sustainability  
*Jorge Sousa, George B. Way, Rongji Cao* invited
- 09:40** id 808 Laboratory evaluation of noise – dampening properties of asphalt mixtures  
*Krishna P. Bilgiri, Kamil E. Kaloush* invited
- 10:00** id 810 Applications of asphalt rubber pavements in american southwest states  
*Paul R. Donavan, Bruce Rymer* invited
- 10:20** id 1111 Comparison of tire-pavement noise characteristics of rubberized and conventional asphalt concrete mixes  
*Qing Lu, John Harvey, Erwin Kohler, Bruce Rymer, Linus Motumah*
- 10:40** id 939 Suggestions on how to avoid asphalt-rubber hot mix failures  
*George B. Way* invited
- 11:00** id 1108 Sustainability issues of asphalt rubber pavements  
*Pereira P., Oliveira J.* invited
- 11:20** id 267 Contribution of asphalt rubber mixtures to noise abatement – time effect  
*Elisabete Freitas* invited
- 11:40** id 1063 Acoustic characterization of asphalt rubber mixtures in Italy  
*E. Pasquini, F. Canestrari, G. Ferrotti, F. A. Santagata, F. Serpilli*

**Noise from information technology equipment****3 B**

Session chairs	Gaku Minorikawa	Klaus Genuit
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- 09:00** id 97 Method of vibration measurement using quarter size plenum for noise measurement  
*Gaku Minorikawa, Haruyuki Takahashi, Ikuo Kimizuka, Toshiaki Nakayama*
- 09:20** id 98 Study on high speed small PC cooling fan  
*Gaku Minorikawa, Akihiko Sonoda*
- 09:40** id 138 Development of printer impulsive noise metrics: considerations of measurement stability and repeatability  
*Katy Ferguson, Terry Baird* invited
- 10:00** id 261 Low noise requirements for office equipment with printing functions according to the Blue Angel environment-related label  
*Christian Fabris* invited

- 10:20** id 386 Development of noise measurement standard for inkjet large format printers  
*Ikuro Kimizuka, Naoki Watanabe, Takeshi Shishido*
- 10:40** id 477 Application of standardized psychoacoustic parameters for IT-noise assessment  
*Klaus Genuit*
- 11:00** id 500 EU “green” public procurement – acoustic noise – a key requirement for IT products  
*Hans Wendschlag*
- 11:20** id 508 German IT-equipment noise categorization concept: Measurements and final approach  
*Gregor Feneberg, Otto Martner*
- 11:40** id 852 Mechanical design for sound quality improvement of audio visual equipments  
*Tooru Yamauchi, Kenichi Seki, Gaku Minorikawa, Shinya Hasegawa*

## Floor impact noise evaluation and control

**3 C**

### Session chairs

**Jin Yong Jeon**

**Trevor Nightingale**

- 09:00** id 431 Analysis of impact sound reduction by floor coverings using a small sized acoustic chamber  
*F. G. Branco, L. Godinho, A. Pereira, R. Masgalos*
- 09:20** id 528 Analysis of vibration and impact-force characteristics for the standard heavy-weight impact source  
*Buhm Park, Junhong Park, Jin Yong Jeon*
- 09:40** id 532 Measurements of wave propagation characteristics of sandwich structures damped by viscoelastic core materials  
*Jeongwon Park, Jepil Lee, Buhm Park, Junhong Park, Seungyeop Yoo, Jin Yong Jeon* invited
- 10:00** id 715 Approach to predict the normalized impact sound pressure level of resilient supported stairs by means of EN 12354  
*Taskan, E., Scheck, J., Fichtel. C., Fischer, H. M.*
- 10:20** id 855 Effect of change in impact force on heavy-weight impact sound and impact characteristic of heavy/soft impact sources  
*Atsuo Hiramitsu* invited
- 10:40** id 857 Acoustical behaviour of bare floor in hollow brick and concrete (italian building technology)  
*Giovanni Semprini, Antonino Di Bella, Alessandro Schiavi, Arianna Astolfi, Luca Barbaresi, Leonardo Luison, Chiara Martina Pontarollo, Paolo Tarizzo*
- 11:00** id 923 Experimental analysis of some usual brazilian floating floor systems for impact noise insulation  
*Ferraz, R., Rodrigues, F. C., Vecchi, M. A. M.*
- 11:20** id 938 Parametric study of sound transmission through lightweight floors  
*Berndt Zeitler, Stefan Schoenwald, Trevor Nightingale* invited
- 11:40** id 1045 Heavy-weight impact sound isolation performance in in-situ condition  
*Jeong Ho Jeong, Yong Ho Ha*

## Psychoacoustics and sound quality

**5 A**

### Session chairs

**Sonoko Kuwano**

**Hugo Fastl**

- 09:00** id 369 Perceptive aspects of emergency signals  
*Hugo Fastl, Daniel Menzel, Matthias Müllner, Karl Wenzelewski, Holger Wigro* invited
- 09:20** id 66 Calculation of loudness level of time varying sound  
*Sonoko Kuwano, Seiichiro Namba, Tohru Kato* invited

<b>09:40</b>	id 492 Critical review of loudness standards <i>Roland Sottek</i>	invited
<b>10:00</b>	id 585 Development of a model to predict annoyance caused by aircraft noise <i>Shashikant More, Patricia Davies</i>	invited
<b>10:20</b>	id 821 Speech intelligibility as annoyance index <i>A. Preis, H. Hafke, T. Kaczmarek</i>	invited
<b>10:40</b>	id 246 Quality check of automotive window motors using the sound quality metrics <i>Wan-Ho Cho, Jeong-Guon Ih, Takeshi Toi</i>	invited
<b>11:00</b>	id 110 Preference of diesel powertrain noise: a cross-cultural study <i>Takeo Hashimoto, Shigeko Hatano</i>	invited
<b>11:20</b>	id 143 Effect of the respondents' hearing in high frequency region on the subjective impression of dental sounds <i>Yamada, Tomomi, Ebisu, Shigeyuki, Kuwano, Sonoko</i>	invited
<b>11:40</b>	id 686 Partial loudness as a tonal content measure <i>Hans Hansen, Reinhard Weber</i>	invited

**Acoustical holography, imaging and beam forming****5 B**

Session chairs	Weikang Jiang	Finn Jacobsen
<b>09:00</b>	id 18 Some theoretical and experimental study of microphone array techniques for urban railway transit <i>Weikang Jiang, Xiaojie Yan, Haibin Zhang</i>	invited
<b>09:20</b>	id 29 Pass-by Beamforming for airplane external noise characterization <i>Andrea Sassaroli, Paolo Castellini, Andrea Di Giuseppe, Enrico Primo Tomasini, Marco Aversano, Antonio Sollo</i>	invited
<b>09:40</b>	id 80 Decomposition of noise sources radiation using Transfer Path Acoustics Holography <i>Hao Peng, Sifa Zheng, Diange Yang, Xiaomin Lian</i>	invited
<b>10:00</b>	id 141 Application of weighted norm extrapolation ion in patch near-filed acoustic holography <i>Liang Xu, Xin Zhao Chen, Chuan Xing Bi</i>	invited
<b>10:20</b>	id 192 Wind speed measurement by the coherent processing of noise <i>Mikhail I. Charnotskii, Oleg A. Godin, Vladimir G. Irisov</i>	
<b>10:40</b>	id 583 Separation of radiated sound field components from waves scattered by a source under non-anechoic conditions <i>Efren Fernandez Grande, Finn Jacobsen</i>	invited
<b>11:00</b>	id 732 Beamforming with a circular microphone array for localization of environmental sources of noise <i>Elisabet Tiana-Roig, Finn Jacobsen, Efren Fernandez Grande</i>	invited
<b>11:20</b>	id 831 Defect identification using TNAH: an exploration <i>Sophie Verpeaux, Joël C.-Lauzon, Sara Montplaisir-Gonçalves, Annie Ross</i>	

**Airport noise (special session X-noise)****5 C**

Session chairs	Dominique Collin	Luís Braga Campos
<b>09:00</b>	id 518 A guideline for the project and the management of airport noise monitoring systems <i>S. Curcuruto, M. Bassanino, A. Balestreri, M. Mussin</i>	
<b>09:20</b>	id 611 COSMA — community oriented solutions to minimise aircraft noise annoyance <i>Michael Bauer, Dominique Collin, Umberto lemma, Karl Janssens, Ferenc Märki, Uwe Müller</i>	

- 09:40** id 627 TEENI: Turboshaft Engine Exhaust Noise Identification – a brief overview  
*E. Bouty, K. Knobloch, D. Blacodon*
- 10:00** id 739 European aircraft noise research network (X3-NOISE)  
*Dominique Collin* invited
- 10:20** id 956 Common noise assessment methods in EU: CNOSSOS-EU (part IV: aircraft noise prediction for the purpose of strategic noise mapping)  
*Stylianos Kephalopoulos, Balazs Gergely, Fabienne Anfosso-Lédée, Marco Paviotti, Paul de Vos*
- 10:40** id 981 The EU FP7 research project FLOCON – objectives and first results  
*Lars Enghardt*
- 11:00** id 1048 OPENAIR, optimisation for low environmental noise impact aircraft  
*Eugène J. Kors*
- 11:20** id 1065 Environmentally responsible air transport (ERAT)  
*ERAT Consortium*
- 11:40** id 1100 Acoustic signal distortion by atmospheric turbulence  
*F. S. R. P. Cunha, L. M. B. C. Campos*

## New directions in noise and health research

**1.06**

### Session chairs

**Stephen Stansfeld**

**Irene van Kamp**

- 09:00** id 274 The societal meaning of sound and noise: a new perspective  
*Jeroen Devilee, Eveline Maris, Irene van Kamp* invited
- 09:20** id 371 Aircraft noise exposure and blood pressure among people living near Ciampino airport in Rome  
*Ancona C., Forastiere F., Mataloni F., Badaloni C., Fabozzi T., Perucci C. A.*
- 09:40** id 409 Noise and health: why we need more research  
*Andrew P. Smith*
- 10:00** id 430 The european network on noise and health (ENNAH)  
*Stansfeld, S. A., Clark, C.*
- 10:20** id 450 Correlation between traffic-generated noise and air pollution in two mid-size european cities: trinational trafic, air, bruit et santé project – TRI-TABS  
*Maria Foraster, Alexandre Deltell, Xavier Basagaña, Harish C. Phuleria, Emmanuel Schaffner, Rémy Slama, Lee-Jane Sally Liu, Nino Künzli*
- 10:40** id 537 ENNAH WP4 – moderating effects by air pollution on noise induced cardiovascular disease  
*Charlotta Eriksson, Jenny Selander, Mats Nilsson, Göran Pershagen* invited
- 11:00** id 650 Urban traffic noise and annoyance: the influence of quiet facades  
*Yvonne de Kluizenaar, Erik M. Salomons, Sabine A. Janssen, Frank J. van Lenthe, Henk Vos, Han Zhou, Henk M. E. Miedema, Johan P. Mackenbach*
- 11:20** id 735 Review of the evidence on noise exposure and non-auditory health effects in the european network for noise and health (ENNAH)  
*A. Hansell, S. Floud, H. Laszlo, L. Jarup*
- 11:40** id 772 Assessment of health effects related to noise exposure in adult population in urban center Skopje  
*Gordana Ristovska, Dragan Gjorgjev*

**Noise control materials****1.07****Session chairs** **Masahiro Toyoda****Kimihiko Sakagami**

- 09:00** id 89 Multiple-leaf sound absorbers with microperforated panels: an overview  
*Kimihiko Sakagami, Motoki Yairi, Masayuki Morimoto* invited
- 09:20** id 320 Viscoelastic metamaterials with controllable properties  
*Simon A. Pope, Steve Daley*
- 09:40** id 335 Acoustic performance assessment of panels manufactured from vegetable fibers  
*Leopoldo Pacheco Bastos, Gustavo da Silva Vieira de Melo*
- 10:00** id 350 Rainfall noise from ethylene/tetrafluoroethylene aircushion-membrane structures  
*Masahiro Toyoda, Daiji Takahashi* invited
- 10:20** id 375 The use of stratification to improve the absorption of porous materials  
*A. Khan, K. V. Horoshenkov* invited
- 10:40** id 534 Reduction of sound radiation by using force radiation modes: effects of attached mass on force radiation modes  
*Zenzo Yamaguchi, Wataru Nakahira, Kimihiko Sakagami, Masayuki Morimoto, J. Stuart Bolton, Ichiro Yamagiwa* invited
- 11:00** id 779 Optimization of structural factors for Helmholtz resonator to improve sound insulation of lightweight double leaf partition  
*Satoshi Sugie, Junichi Yoshimura, Teruo Iwase* invited
- 11:20** id 979 Use of CFD to calculate the performance of microperforated materials  
*J. Stuart Bolton, Nicholas Kim* invited
- 11:40** id 988 The use of micro-perforated materials as duct liners  
*Hyunjun Shin, J. Stuart Bolton*

**Low frequency and airport ground noise****1.08****Session chairs** **Martin van den Berg****Joel Paulo**

- 09:00** id 71 Dust removal using high intensity low frequency sound  
*Gary Seiffert, Barry Gibbs*
- 09:20** id 120 Low frequency noise in the rijmond  
*J. Jabben, M. Weber, E. Verheijen*
- 09:40** id 191 A barrier for low frequency noise from starting aircraft: comparison between numerical and scale model results  
*Casper Bosschaart, Arno Eisses, Frits van der Eerden*
- 10:00** id 197 Need for guidance on low frequency noise  
*P. A. Sloven*

- 10:20** id 455 Low level intrusive noise and low frequency noise  
*Martin van den Berg*
- 10:40** id 697 Development of a rating procedure for low frequency noise: results of measurements near runways  
*Edwin Buikema, Martijn Vercammen, Fokke van der Ploeg, Jan Granneman, Joos Vos*
- 11:00** id 813 Annoyance caused by low frequency sounds: spectral and temporal effects  
*Joos Vos, Mark M. J. Houben, Fokke van der Ploeg, Edwin Buikema*
- 11:20** id 818 Another kind of noise: groundnoise  
*Dik Welkers*
- 11:40** id 865 A study on the contribution of head vibrations to the threshold levels for “vibration perceived in the head” of subjects exposed to low-frequency noise  
*Yukio Takahashi*

## Vibration isolation and damping

**1.13**

### Session chairs

**Miguel Matos Neves**

**Pedro Martins da Silva**

- 09:00** id 50 Topology optimization of unconstrained viscoelastic damping treatment for structural vibration reduction of a beam  
*Marcio Furukava, Olavo M. Silva, Samir N. Y. Gerges, Miguel M. Neves, J. L. Bento Coelho*
- 09:20** id 262 A new approach for double-notch frequency hydraulic mounts  
*Tikani, R., Vahdati, N., Ziae Rad, S., Esfahanian, M.*
- 09:40** id 324 Optimization of the rivet distribution in an aircraft panel for reduced flow induced vibration  
*Duarte Sousa, Alexandra A. Gomes, Fernando J. P. Lau* invited
- 10:00** id 570 Quantifying quantisation errors for damping measurements using confidence intervals  
*David K. Anthony*
- 10:20** id 598 Vibration control of 4 stroke diesel generator set using fine frequency tunable dynamic absorber  
*Seok Hyeon Jeong, Won Hyun Kim, Soo Mok Lee*
- 10:40** id 746 Transient response of a plate with partial constrained layer damping  
*Boubaker Khalfa, Annie Ross*
- 11:00** id 794 Concrete pier foundation and building design for electron microscope installations with vibration disturbances from train, truck, and bus traffic  
*Chad N. Himmel*
- 11:20** id 953 Integrated design of lightweight robot manipulators  
*Joaquim Mendes, Jorge Martins, José Sá da Costa* invited
- 11:40** id 1049 The vibration of a high-rise building's columns due to rhythmic human activity  
*Nicholas Sylvestre-Williams, Bob Rimrott, Jihyun Cho*

## notes

## Monday, 14 June

18:00	17:40	17:20	17:00	16:40	16:20	16:00	15:40	15:20	15:00	14:40	14:20	14:00		
Metrics for environmental noise													Auditorium 1	
Physiological Health Effects from Environmental Noise Exposure													Auditorium 3	
Product sound auralization													Auditorium 4	
													3A	
													3B	
													3C	
													5A	
													5B	
													5C	
													1.07	
													1.08	
													1.13	

Coffee break 16:00 to 17:00

**Active noise and vibration control****Auditorium 1****Session chairs****Joachim Scheuren****Jing Tian**

- 14:00** id 247 Prevention of active noise control system for a ventilation opening against malfunction caused by living sound: discrimination between automotive noise and living sound by frequency characteristics  
*Ken Anai, Takuro Shibata, Yasuhiro Hiraguri, Kazutoshi Fujimoto*
- 14:20** id 286 Spatially shaped shunted piezoelectric transducers for vibration control of beams  
*C. M. A. Vasques, J. Dias Rodrigues*
- 14:40** id 301 Comparative analysis of magnetostrictive vibrations of various power transformer  
*T. Boczar, S. Borucki, D. Zmarzly*
- 15:00** id 367 Energy flow in active systems  
*Sebastian Buckert, David Bartylla, Joachim Bös, Holger Hanselka*
- 15:20** id 383 Evaluation of an active sound quality control system in a virtual car driving simulator  
*Marco Gallo, Jan Antonis, Herman Van der Auweraer, Karl Janssens, Leopoldo P. R. de Oliveira*
- 15:40** id 536 Analysis of an adaptive technique using the reflected field of an active-noise-cancellation system as control input  
*C. Kleinhenrich, T. Weigler, D. Krahe*
- 16:00** id 678 Broadband active noise control in a cabin crew rest compartment  
*O. Pabst, D. Sachau*
- 16:20** id 701 Multichannel filtered-x LMS for active noise control on multicore systems  
*Alberto Gonzalez, Miguel Ferrer, Maria de Diego, Carles Roig*
- 16:40** id 704 Study of capabilities of moment actuators in ASAC  
*Petr Švec, Ondřej Jiríček, Vojtěch Jandák, Marek Brothánek*
- 17:00** id 828 Method of active control of transformer noise and its example  
*Ki-Won Kima, Ji-Ho Chang, Yang-Hann Kim*
- 17:20** id 858 Marine diesel vibration isolation using an RLS based harmonic control algorithm with frequency tracking  
*Ilias Zazas, Steve Daley, Simon Pope*
- 17:40** id 859 Experimental active noise control of duct system using Co-FXLMS algorithm  
*In Hyung Yang, Jae-Eun Jeong, Jae-Eung Oh*
- 18:00** id 867 Single channel system for adaptive power minimization  
*S. Boehme, D. Sachau*

**Occupational noise (cont.)****Auditorium 3****Session chairs****Pedro Arezes****Samir Gerges**

- 14:00** id 289 Exposure of professional divers to noise  
*Reimer Paulsen*
- 14:20** id 299 Hearing loss of classical musicians and risk factors  
*Heli Koskinen, Esko Toppila, Ilmari Pykkö*
- 14:40** id 448 Voice picking in warehouses: impact on the noise exposure of operatives and solutions to prevent excessive noise exposure  
*N. Trompette, J. Chatillon, P. Chevret, V. Zimpfer, K. Buck*
- 15:00** id 545 Speech perception in noise with active and passive hearing protectors: acoustical analysis  
*Arnelies Bockstaal, Dick Botteldooren, Bert De Coensel, Bart Vinck*
- 15:20** id 666 Long-term measurements of sound levels in child day-care centers  
*Fredric Lindström, Lage Burström, Markus Borgh, Katrin Nielsen, Kerstin Persson Waye*
- 15:40** id 679 Hearing ability and self-reported hearing disorders in orchestral musicians  
*Søren P. Lund, Roger Persson, Jesper Kristiansen, Per M. Nielsen, Anders C. Gade*

- 16:00** id 680 Screening for hearing impairment in musicians  
*Søren P. Lund, Roger Persson, Jesper Kristiansen, Per M. Nielsen, Anders C. Gade*
- 16:20** id 826 Evaluation of hearing ability and risk of hearing impairment in professional orchestral musicians  
*M. Pawłaczyk-Luszczynska, A. Dudarewicz, M. Zamojska, M. Śliwińska-Kowalska*
- 16:40** id 943 Sound levels of gunfire noise during military exercises and the effectiveness of hearing protectors  
*Jan Zera, Rafal Mlynki, Emil Kozlowski, Ireneusz Kantor*

invited

## Metrics for environmental noise

### Session chairs

**Brigitte Schulte-Fortkamp**
**Paul Schomer**

- 17:00** id 323 A quiet area accessibility metric for the Southampton urban agglomeration  
*J. Battaner-Moro, C. Barlow, P. Wright*
- 17:20** id 765 Evaluation of acoustic quality in urban open spaces  
*Hui Lin, Kin-che Lam, A. L. Brown*
- 17:40** id 958 Improvements in source identification from unattended sound level measurements using threshold-triggered audio recording  
*Richard A. Wright, Guillaume Goulamhoussen*
- 18:00** id 993 Suitability of a consumer digital recorder for use in acoustical measurements  
*Federico Miyara, Ernesto Accolti, Vivian Pasch, Susana Cabanellas, Marta Yanitelli, Pablo Miechi, Fernando A. Marengo Rodriguez, Ezequiel Mignini*

## Vibro-acoustic performance of structures and vehicles (cont.)

**Auditorium 4**

### Session chairs

**Paco Simon**
**Barry Gibbs**

- 14:00** id 620 Uncertainty in the measurement of coupling loss factors using the power injection method  
*M. José Fernández, Francisco Simón, Marcos Chimeno*
- 14:20** id 624 Exterior noise emitted by heavy trucks: analysis methods & reduction technologies  
*Miccoli, G., Tinti, F. C., Bertolini, C.*
- 14:40** id 643 Using physiological measurements to determine an individual's evaluation of vehicle sound  
*Louise Humphreys, Sebastiano Giudice, Paul Jennings, Rebecca Cain*
- 15:00** id 651 Perceptual dimensions for electric vehicle sound quality  
*Sebastiano Giudice, Paul Jennings, Rebecca Cain, Louise Humphreys, Wookeun Song*
- 15:20** id 997 Vibro-acoustic behaviour of spacecraft plates in reverberating chambers  
*F. Simon, J. Santiago-Prowald, M. J. Fernandez, M. Chimeno-Manguan, J. López-Diez, J. L. Rioboo, A. Moreno, C. de la Colina Tejeda*

invited

invited

## Physiological health effects from environmental noise exposure

### Session chairs

**Irene van Kamp**
**Lex Brown**

- 15:40** id 127 Preparation of guidance for health risk assessment of environmental noise  
*Lin Fritschi, A. L. Brown, Rokho Kim, S. Kephalaopoulos, D. Schwela*
- 16:00** id 210 Effects of aircraft noise stress on rats in relation to behaviors and serum neurotransmitter and morphological alteration in temporal lobe  
*Di Guoqing, Zhou Bing*
- 16:20** id 390 Elaboration of a methodology for the definition of an indicator of health risk induced by noise in urban areas  
*M. Baulac, D. Bourgois, S. Marry, J. Defrance, C. Goeury*

- 16:40** id 394 Noise sensitivity in relation to baseline arousal, physiological response and psychological features to noise exposure during task performance  
*Kim White, Winni F. Hofman, Irene van Kamp* invited
- 17:00** id 436 The long-term effects of aircraft noise exposure on children's cognition: findings from the UK ranch follow-up study  
*Clark, C., Stansfeld, S. A., Head, J.* invited
- 17:20** id 569 Noise sensitivity in cardiovascular noise studies  
*Babisch, W.* invited
- 17:40** id 573 Saliva cortisol – a marker for stress in the research on cardiovascular effects of noise  
*G. Bluhm, J. Selander, G. Pershagen, T. Theorell, Hyena Consortium* invited
- 18:00** id 646 Occupational exposure to noise by physical education teachers  
*Rui Pedro Pinto Neves da Conceição, Inês Maria Barbosa Campos Menéres Ferreira, Nuno Eduardo Dias Gueiral, Maria de Fátima Gomes Cardoso e Coelho, Elisabete Maria da Silva Marques Nogueira, Rui Manuel Nunes Corredeira, Maria Adilia Silva*

## Asphalt rubber pavements - noise and sustainability (cont.)

3 A

Session chairs	Paul Donavan	Ulf Sandberg	
<b>14:00</b>	id 1084 Several approaches with asphalt rubber pavements in Spain – noise and sustainability <i>Miguel A. Morcillo, Mª José Hernández, José A. González, Antonio Hidalgo, Carlos García</i>		invited
<b>14:20</b>	id 1011 Asphalt rubber pavements in Sweden – noise and rolling resistance properties <i>Ulf Sandberg</i>		invited
<b>14:40</b>	id 454 The PERSUADE project: developing the concept of poroelastic road surface into a powerful tool for abating traffic noise <i>Luc Goubert, Ulf Sandberg</i>		
<b>15:00</b>	id 19 Noise reduction effect of porous elastic road surface measured by CPX method <i>Seishi Meiarashi</i>		

## Sound power measurements and analysis

Session chairs	Luís Conde Santos	Michael Vorländer	
<b>15:20</b>	id 472 Some actual problems and solutions standardizing sound power measurement <i>Gerhard Hübner</i>		invited
<b>15:40</b>	id 553 Sound power measurements according ISO 3744 – some unsolved problems <i>Patrick Kurtz</i>		invited
<b>16:00</b>	id 640 Uncertainty determination of sound emission measures by round robins <i>Volker Wittstock</i>		invited
<b>16:20</b>	id 901 Comparison of two sound intensity in situ measurement techniques to calculate the sound power level of a noise source <i>Joaquín Egea, Eduardo Latorre, Carlos Sánchez, C. César Rodrigues</i>		invited
<b>16:40</b>	id 148 Way of non-stationary signal analysis generated by machinery for feature extraction and their processing <i>Walter Bartelmus, Radosław Zimroz</i>		

## Product sound auralization

### Session chairs

**Michael Vorländer**

**Luís Conde Santos**

- 17:00** id 384 Synthesis of helicopter flyover noise using a source-transfer-receiver approach  
*Karl Janssens, Keishi Nishida, Danilo Sabbatini, Herman Van der Auweraer, Fausto Cenedese*
- 17:20** id 542 Vector quantization of frequency response functions  
*Timo Lohmann, Michael Vorländer*
- 17:40** id 916 Simulation and auralization of basic one-dimensional structure-borne sound sources using different modeling techniques  
*Pascal Dietrich, Christoph Höller, Matthias Lievens*
- 18:00** id 925 Comparison of acoustic single-value parameters for the design process of electrical machines  
*M. van der Giet, M. Müller-Trapet, P. Dietrich, M. Pollow, J. Blum, K. Hameyer, M. Vorländer*

## Community noise around airports

**3 B**

### Session chairs

**Ichiro Yamada**

**Jules Slama**

- 14:00** id 155 Noise levels around Lyon Saint-Exupéry airport, between 2002 and 2008  
*Vallet Michel, Bruyere Jean-Claude*
- 14:20** id 170 ZFI, an index for the effects of aircraft noise on the population: experiences  
*B. Schäffer, G. Thomann, P. Huber, M. Brink, S. Plüss, R. Hofmann*
- 14:40** id 184 Next generation aircraft noise models – need and requirements  
*Idar Ludvig Nilsen Granlien, Rolf Tore Randeberg, Herold Olsen* invited
- 15:00** id 204 Describing the uncertainty associated with low aircraft noise level data derived from noise models: implications for noise effects studies  
*Vincent E. Mestre, P. E.* invited
- 15:20** id 424 Community response to aircraft and combined noises in HANOI  
*T. L. Nguyen, T. Yano, H. Q. Nguyen, T. L. Hoang, T. Nishimura, T. Morihara, Y. Hashimoto, T. Sato* invited
- 15:40** id 501 Measures to reduce awacs noise impact  
*D. H. T. Bergmans, R. H. Hogehuis, H. W. Veerbeek*
- 16:00** id 531 Noise measures for airport capacity expansion at Narita international airport  
*Taku Sambe, Miroku Tani, Saburo Ogata* invited
- 16:20** id 833 Comparison of noise calculation method between AERC Model and ECAC Doc.29  
*Hisashi Yoshioka, Masayuki Sugawara, Kiyoshi Iwasaki, Ichiro Yamada* invited
- 16:40** id 872 Survey of thrust reversal noise after landing for further noise measures at Narita Airport  
*Yasushi Kawase, Naoki Shimohara, Saburo Ogata, Akito Kamiyoshi*
- 17:00** id 1148 Tools support for application of balanced approach in brazilian airports  
*Carvalho, L. A., Slama, J. G., Gama, A.P.*
- 17:20** id 1149 Airport noise impact in urban areas – An approach to mitigate conflicts between airports and the cities held in Brazil by INFRAERO  
*Tânia Cristina de Menezes Caldas, Paulo Sergio Ramos Pinto, Jules Slama*
- 17:40** id 1151 Balanced approach and urban integration of airports  
*Tarcilene A. H., Slama, J. G.*

**Floor impact noise evaluation and control (cont.)****3 C****Session chairs****Mats E. Nilsson****Marion Burgess**

- 14:00** id 1090 Impact sound reduction of concrete layers containing cork granules  
*Anabela Moreira, Julieta Antónia, António Tadeu*
- 14:20** id 1106 Contribution for the evaluation of the calculation method figured on EN 12354-2:2000 for the situations in which the emission room is subjacent to the reception room  
*Carlos A. Fafaiol, Luis P. Santos Lopes, Odeté Domingues, Sun-Woo Kim*

**Environmental noise (policy, standards, problemens and approaches)****Session chairs****Mats E. Nilsson****Marion Burgess**

- 14:40** id 116 Appropriate descriptors for use in environmental noise policy  
*Marion Burgess* invited
- 15:00** id 937 Common noise assessment methods in EU: CNOSSOS-EU (part I: the roadmap)  
*Stylianos Kefalopoulos, Balazs Gergely, Fabienne Anfosso-Lédée, Marco Paviotti*
- 15:20** id 272 One's personal noise footprint: what's your share in environmental noise production?  
*Edwin Verheijen, Elly Waterman*
- 15:40** id 139 An indicator for area specific noise impact: Gden  
*M. Weber, J. Jabben*
- 16:00** id 1099 Low frequency noise & vibrations experiences a residential torture without social liability? An account of solving difficulties of an exposed family  
*Ruud S. Louw, Elizabeth Louw van Popering*
- 16:20** id 1031 Effect of noise and low frequency noise generated by wind power plant (wind farm)  
*Park Young-Min, Lee Nae-Hyun, Choung Tae-Ryang* invited
- 16:40** id 618 A pragmatic approach to deal with amplified music from pubs/bars/restaurants in Hong Kong  
*K. W. Cheng, C. L. Wong, C. K. Lee*
- 17:00** id 318 Sleep disturbance due to everyday noise: a review of the last 20 years  
*S. Omlin, M. Brink, G. Bauer*
- 17:20** id 208 A partnership approach to reduce construction din  
*Richard Kwan, M. K. Cheung, C. L. Wong, Wister Wong*
- 17:40** id 1042 Predicting the impact of environmental noise due to transformer's operation  
*Belderrain, Maria Luiza, Montemurro, Wanderley, Fuchs, Gilberto*
- 18:00** id 945 Environmental noise monitoring with acoustic vector sensors  
*Hans-Elias de Bree, Jelmer Wind, Emiel Tijs*

**Psychoacoustics and sound quality (cont.)****5 A****Session chairs****Sonoko Kuwano****Hugo Fastl**

- 14:00** id 682 Psychoacoustic evaluations of mixed complex tones  
*Stephan Töpken, Jesko Verhey, Reinhard Weber* invited
- 14:20** id 164 The effect of dynamic range compression on the psychoacoustic quality and loudness of commercial music  
*William Campbell, Rob Toulson, Justin Paterson*
- 14:40** id 494 What is the influence of vibrations on the diesel character rating of a vehicle?  
*A. Frère, R. Weber, C. Péteul-Brouillet, G. Guyader, N. Misdariis, P. Susini*
- 15:00** id 520 Influence of the acoustic environment on the loudness of one's own voice  
*David Pelegrin Garcia, Oier Fuentes Mendizábal, Jonas Brunskog, Cheol-Ho Jeong*

- 15:20** id 559 Acoustic optimisation at workplaces based on sound quality: the case of stationary noise signals  
*Carletti, E., Pedrielli, F., Casazza, C.*
- 15:40** id 111 Sound quality tuning of a printer noise  
*Shigeo Hatano, Takeo Hashimoto*
- 16:00** id 599 Sense of harmony between product sound quality and color sensation: a case study of vacuum cleaner  
*Hideyoshi Yanagisawa, Ryo Yoshinaga, Tamotsu Murakami, Koichi Ohtomi, Rika Hosaka*
- 16:20** id 607 Noise qualification index for refrigerator aligned with consumers  
*M. J. Kang, J. D. Kim, J. S. Han, H. S. Kim, M. R. Lee*
- 16:40** id 676 Effects of gender and age on physiological and subjective responses to vehicle pass-by noises  
*G. Notbohm, R. Schmook, S. Schwarze*
- 17:00** id 461 A perceptive and cognitive typology of vehicle pass-by noises  
*Morel, J., Marquis-Favre, C., Dubois, D., Pierrette, M.*
- 17:20** id 378 Evaluation of acoustic discomfort aboard metros based on immersive virtual reality approach  
*L. Maffei, M. Masullo, N. Alexeeva, F. Ruotolo, V. P. Senese*
- 17:40** id 723 Subjective evaluations on the siren of Japanese patrol (police) car  
*Hirotake Nakashima, Yohsuke Matsui*
- 18:00** id 748 Evaluation of audio features with absolute magnitude estimation  
*Magdalena Plewa, Piotr Kleczkowski*

## Acoustical holography, imaging and beam forming (cont.)

**5 B**

### Session chairs

Weikang Jiang

Finn Jacobsen

- 14:00** id 860 Impulsive sound source localization using delay and sum beamforming method in time domain  
*Dae-hoon Seo, Yang-Hann Kim*
- 14:20** id 946 Scan & Paint: a novel sound visualization technique  
*Emiel Tjjs, Hans-Elias de Bree, Steven Steltzenpool, Julija Smyrnova, Jian Kang*
- 14:40** id 987 Signal processing for transient acoustic fields  
*Jean-Francois Blais, Annie Ross* invited
- 15:00** id 1012 Improving equivalent source distribution results in noise source localization in the space using beamforming combined with the SRTF from spherical array  
*Lucille Lamotte, Alain Schmitt, Filip Deblauwe*
- 15:20** id 1035 Sound visualization methods: various beamformings and holographies  
*Dae-Hoon Seo, Koo-Hwan Kim, Yang-Hann Kim* invited
- 15:40** id 1114 Automatic detection of the sensor coordinates within microphone arrays  
*Dirk Döbler, Ralf Schröder, Gunnar Heilmann*

## Computational techniques in room and building acoustics

### Session chairs

Peter Svensson

Carl Hopkins

- 16:00** id 26 Prediction of maximum sound pressure and vibration levels in heavyweight building structures using transient statistical energy analysis  
*M. Robinson, C. Hopkins*
- 16:20** id 168 Sound field rendering with digital boundary condition  
*Takao Tsuchiya, Masahiro Otsuka*
- 16:40** id 174 Blind source separation and specification of location considering time lag information  
*Fumio Sasaki, Masanori Suzuki, Kaori Iiyama, Osamu Tanaka, Masahito Yasuoka*
- 17:00** id 243 Transmission of sonic booms into building structures with room openings at low frequency  
*Marcel C. Remillieux, Joseph M. Corcoran, Ricardo A. Burdisso*

- 17:20** id 515 Using finite elements to model porous materials in buildings  
*P. Jean, C. Guigou-Carter, R. Foret*
- 17:40** id 617 Automated EN 12354 calculations of entire buildings: sonarchitect ISO  
*Manuel A. Sobreira Seoane, Alfonso Rodríguez Molares, Julio Martín-Herrero, Castor Rodríguez-Fernández* invited
- 18:00** id 1121 Virtusound – a real time auralization system  
*D. Alarcão, D. Santos, J. L. Bento Coelho*

**Airport noise (special session X-noise) (cont.)****5 C**

Session chairs	Dominique Collin	Luís Braga Campos
<b>14:00</b>	id 1101 The effect of wind on noise propagation <i>P. G. T. A. Serrão, L. M. B. C. Campos</i>	
<b>14:20</b>	id 1102 Shielding of engine noise by aircraft structure <i>Fernando J. P. Lau, L. M. B. C. Campos</i>	
<b>14:40</b>	id 1103 Building effects on airport noise <i>L. M. B. C. Campos, A. R. A. Fonseca, F. S. Cunha</i>	
<b>15:00</b>	id 1104 Ground effects on helicopter noise <i>J. M. G. S. Oliveira, L. M. B. C. Campos</i>	
<b>15:20</b>	id 1105 Outdoor to indoor noise transmission of aircraft noise <i>P. G. T. A. Serrão, L. M. B. C. Campos</i>	

**Acoustic longevity of pavements****5 C**

Session chairs	Hans Bendtsen	Luc Goubert
<b>15:40</b>	id 414 Acoustic durability of low noise road surfaces <i>Henk Dijkink, Ronald van Loon</i>	
<b>16:00</b>	id 1017 The dramatic failure in acoustic performance of open-graded friction course pavements in Washington State, USA <i>Tim Sexton, Tom Baker, Mark Russell, Jeff Uhlmeyer</i>	invited
<b>16:20</b>	id 854 Surface dressings optimized for low tyre/road noise <i>B. Andersen, H. Bendtsen</i>	invited
<b>16:40</b>	id 634 Noise reducing exposed aggregate surface for northern entrance of the city of Apeldoorn <i>George Jurriaans, Wim van Keulen, Sander Lubberhuizen, Twan van Bokhoven</i>	invited
<b>17:00</b>	id 809 Performance and acoustic longevity of concrete pavements of different surface properties <i>Paul R. Donavan, Bruce Rymer</i>	invited
<b>17:20</b>	id 995 Evaluation of acoustic longevity of diamond ground surfaces <i>Scofield L.</i>	invited
<b>17:40</b>	id 91 Acoustic aging of road pavements <i>Hans Bendtsen, Erwin Kohler, Qing Lu, Bruce Rymer</i>	invited
<b>18:00</b>	id 1135 Effective cleaning of low-noise pavements <i>Roger Nilsson, Pereric Westergren, Xiaohu Lu</i>	

**New directions in noise and health research****1.06**

Session chairs	Temel Belek	Joseph Lai
<b>14:00</b>	id 849 Using noise maps and geographic information systems to assess individual traffic noise exposure <i>Charlotta Eriksson, Dag Stenkivist, Tom Bellander, Göran Pershagen, Mats E. Nilsson</i>	invited
<b>14:20</b>	id 1156 Acoustic analysis of esophageal speech Internoise 2010 <i>Marzena Mieszkowska, Leszek Radziszewski, Stanisław Bien, Sławomir Okla</i>	

## Aircraft noise modelling and control + Aircraft noise characterization

### Session chairs

**Temel Belek**

**Joseph Lai**

- 14:40** id 173 Effect of atmospheric absorption on aircraft noise propagation during takeoff and landing around airports in the various world regions  
*Y. Okada, K. Yoshihisa, T. Iwase*
- 15:00** id 365 Flow-induced noise in aircraft cylindrical cabins: analytical model validation  
*Joana da Rocha, Afzal Suleman, Fernando Lau*
- 15:20** id 803 Isolator modeling in SEA  
*Tongan Wang, John Maxon*
- 15:40** id 1086 Comparison of aircraft noise calculation models  
*M. Bespalov, E. Oseledets, T. Uspenskaya*
- 16:00** id 1152 Derivation of substitute flight routes from FANAMOS radar scanning  
*Frank-Christian Zacharias*
- 16:20** id 231 Aircraft noise monitoring: noise level shape and spectrum pattern recognition applied to aircraft noise detection  
*C. Rosin, B. Barbo*
- 16:40** id 240 Impact of airframe configurations and thrust settings of aircraft on noise emissions under special consideration of different takeoff profiles  
*Steffen Weidner*
- 17:00** id 842 Special situations in evaluating aircraft noise and alternative metrics  
*Keith Adams*

## Aircraft interior noise and related technology + Aeroacoustics and fan noise

### Session chairs

**Temel Belek**

**Joseph Lai**

- 17:20** id 382 Comparison of turbulent boundary layer auto-spectral models with flight tests results  
*Oliver Collyer*
- 17:40** id 112 Turbulence and noise characteristics of a radial fan  
*Hande Bezci, I. Bedii Ozdemir* invited
- 18:00** id 134 An experimental and analytical study of unsteady flames anchored on a multiperforated burner  
*Leitão, I. V., Fernandes, E. C.*

## Underwater acoustics

**1.07**

### Session chairs

**Eugeniusz Kozaczka**

**Joe Cuschieri**

- 14:00** id 158 Non-stationary acoustic response of a submerged cylindrical shell  
*Serguei Iakovlev, Jean-Francois Sigrist, Cedric Leblond, Kyle Williston, Robynne Murray, Martin Mitchell*
- 14:20** id 248 Development of acoustic target strength analysis software for submarine design  
*Hwa-Muk Kim, Suk-Yoon Hong, Ju-Bum Han, Jae-Jin Jeon, Woo-Jin Jung*
- 14:40** id 392 Numerical predictions of hydrofoil sheet cavitation noise using CFD analysis  
*Jong-Do Kim, Suk-Yoon Hong, Shin-Hyung Rhee, Hee-Bum Lee, Jee-Hun Song*
- 15:00** id 516 Analysis of wave propagation in the vicinity of a wedge coastal region using the method of fundamental solution  
*A. Pereira, E. G. A. Costa, L. Godinho, J. A. F. Santiago*
- 15:20** id 509 Design and testing of a novel alberich anechoic acoustic tile  
*Bajram Zeqiri, Pierre Gélat, Malcolm Norris, Stephen Robinson, Graham Beamish, Gary Hayman*

- 15:40** id 608 Structural acoustic control of a submerged circular plate with piezoelectric actuators  
*Jerzy W. Wiciak* invited
- 16:00** id 758 Acoustic radiation analysis and experimental verification of broadband dense plane array  
*Liu Wang-sheng, Li Ya-an, Yu Hong-pei*
- 16:20** id 792 Passive sonar signal detection using independent component analysis as preprocessing  
*Natanael Nunes de Moura, José M. de Seixas*
- 16:40** id 913 Underwater acoustic signal characterization in the presence of noise  
*Michael Taroudakis, Costas Smaragdakis* invited
- 17:00** id 954 Determination of the seabed properties basing on the results of measurement by means of parametric echosounder  
*Eugeniusz Kozaczka, Grazyna Grelowska* invited
- 17:20** id 1047 Model research of sea bottom sediments  
*Grazyna Grelowska, Wojciech Szymczak* invited
- 17:40** id 1131 An acoustic inversion technique using a single autonomous hydrophone: experimental results  
*Cristiano Soares, Friedrich Zabel, Celestino Martins* invited
- 18:00** id 1155 Numerical and experimental analysis of response of a floating platform to underwater explosion  
*Toprak T., Mugan A., Bozdag E., Sunbuloglu E.*

**Acoustic comfort in buildings****1.08**

Session chairs	Elvira Viveiros	Albano Sousa
<b>14:00</b>	id 63 Noise performance and acoustical comfort in residential buildings: a small evaluation in Brazil and Portugal <i>Maria de Fatima F. Neto, Stelamaris Rolla Bertoli</i>	
<b>14:20</b>	id 136 Reducing the structure-borne noise of elevator shafts <i>H. Van Duerm, R. Lanoye, B. Veelhaver, M. Vanstraelen</i>	
<b>14:40</b>	id 253 The influence of speech intelligibility on performance and acoustic comfort in offices <i>Andreas Liebl, Horst Drotleff, Roman Wack, Michael Leistner</i>	
<b>15:00</b>	id 322 Development by a finite element model, experimentally calibrated, of a virtual laboratory for the prediction of acoustic behavior of multilayer walls <i>Carola Aratari, Filippo Berti, Ciro Fernandes, Flavio Cremonesi, Christian Barbat, Mariagiovanna Lenti</i>	
<b>15:20</b>	id 482 The acoustical design of Muscat and Salalah international airports, Oman <i>Carsten Lemvigh Fog</i>	
<b>15:40</b>	id 557 Acoustic evaluation of auditoriums – case study at the University of Aveiro <i>Leonardo R. Bastos, Diogo R. Mateus, Romeu S. Vicente</i>	
<b>16:00</b>	id 750 Porous material parameters influencing the acoustic performances of building construction systems <i>R. Foret, C. Guigou-Carter, J.-B. Chene</i>	
<b>16:20</b>	id 684 How can large reverberant rooms be used for group conversation? <i>Richard M. Ballinger, Lisbeth Aaker Rasmussen</i>	
<b>16:40</b>	id 574 Acoustic behavior provided by masonry high density brick walls <i>D. Mateus, A. Pereira</i>	
<b>17:00</b>	id 868 Contribution of wall coating to the acoustic performance of masonry walls <i>Adriana F. Friedrich, Dinara X. da Paixão, Erasmo F. Vergara</i>	
<b>17:20</b>	id 881 Effect of sound environment on intellectual productivity in workplace <i>Tetsuya Sakuma, Yumi Kaminao</i>	
<b>17:40</b>	id 921 Subjective and objective evaluation of acoustic climate in dwellings – previous experiences in Poland <i>Anna Izewska</i>	
<b>18:00</b>	id 1125 Proposal of acoustics classification scheme for buildings in Spain <i>Espinel Valdivieso, Ana, Igualador Pascual, Fernando, Frías Pierrard, Juan</i>	

## Classroom acoustics

**1.13**

### Session chairs

Bridget Shield

Luigi Maffei

- |              |   |         |
|--------------|---|---------|
| <b>14:00</b> | id 113 Effects of classroom acoustics on performance and well being in elementary school children: A field study<br><i>M. Klatte, J. Hellbrück</i>  |         |
| <b>14:20</b> | id 429 Is amplification necessary in a classroom?<br><i>Valdis Ingibjörg Jónsdóttir</i>   | invited |
| <b>14:40</b> | id 449 Optimum absorption and vocal output in classrooms calculated with U50<br><i>Lau Nijs, Monika Rychtáriková</i>  |         |
| <b>15:00</b> | id 453 The importance of the built environment for learning — a research evidence overview<br><i>Wall, K., Dockrell, J., Peacey, N.</i>   |         |
| <b>15:20</b> | id 524 Effects of shared noise control activities in two primary schools<br><i>G. Iannace, G. Ciaburro, L. Maffei</i>   | invited |
| <b>15:40</b> | id 579 Sound propagation in lecture halls: comparisons between predictions and experimental results<br><i>A. Pereira, A. Barbosa, D. Mateus</i>   |         |
| <b>16:00</b> | id 631 Room acoustic measures for classrooms<br><i>Erling Nilsson</i>   |         |
| <b>16:20</b> | id 657 Being in a pre-school sound environment – annoyance and subjective symptoms among personnel and children<br><i>Kerstin Persson Waye, Agneta Agge, Jenny Hillström, Fredric Lindström</i> |         |
| <b>16:40</b> | id 705 How absorption and scattering affect reverberation time: studies on a scale model of a classroom<br><i>Nicola Prodi, Chiara Visentini, Andrea Farnetani</i>                              | invited |
| <b>17:00</b> | id 738 Measurement of vocal doses in virtual classrooms<br><i>Pasquale Bottalico, David Pelegin Garcia, Arianna Astolfi, Jonas Brunskog</i>   | invited |
| <b>17:20</b> | id 870 Acoustic requirements for special schools<br><i>Adrian James, David Canning</i>  | invited |
| <b>17:40</b> | id 972 Acoustic Modifications for supporting learning and attention<br><i>Julie Dockrell, Bridget Shield</i>  |         |
| <b>18:00</b> | id 1138 The refurbishment of the portuguese public secondary school network: an acoustical perspective<br><i>Octávio Inácio</i>   | invited |

## notes



**Concert halls, theaters and opera houses****Auditorium 1****Session chairs** Higini Arau**Hidaka Takayuki**

- |              |  |         |
|--------------|--|---------|
| <b>09:00</b> | id 47 Is gade's "support" parameter stearly a sure method to forecast stage acoustics?<br><i>Higini Arau Puchades</i>  | invited |
| <b>09:20</b> | id 77 In search of a new paradigm – Our 'Parameters' tend to bias the ways we listen and constrain the ways we think about concert hall acoustics<br><i>R. Lawrence Kirkegaard</i> | invited |
| <b>09:40</b> | id 135 New auditoria in the United Kingdom and Ireland – acoustic design<br><i>Harris R.</i>   | invited |
| <b>10:00</b> | id 165 Acoustic restoration of spoleto teatro nuovo – some achieved results<br><i>Alessandro Cocchi, Marco Cesare Consumi, Ryota Shimokura</i>                                     | invited |
| <b>10:20</b> | id 166 Some particular aspects in the acoustical design of ancient theatres<br><i>Alessandro Cocchi</i>  | invited |
| <b>10:40</b> | id 199 The role of lateral seismic restraint bearings in the isolation of large auditoria<br><i>Pablo A. Daroux, George Paul Wilson</i>  | invited |
| <b>11:00</b> | id 209 Acoustical design of new danish radio concert hall<br><i>Yasuhisa Toyota, Motoo Komoda, Ayako Hakozaiki</i>   | invited |
| <b>11:20</b> | id 217 How wrong may the Sabine formula be? On the influence of the ceiling profile on the reverberation time<br><i>Uwe M. Stephenson</i>  | invited |
| <b>11:40</b> | id 294 A new concert studio for the BBC philharmonic orchestra<br><i>Mark Howarth</i>  | invited |

**Distinguished lecture****Session chair** Luis Bento Coelho

- |              |  |
|--------------|--|
| <b>12:00</b> | id 864 <b>The tuning of noise pollution with respect to the expertise of people's mind</b><br><i>Brigitte Schulte-Fortkamp</i> |
|--------------|--|

## Psychoacoustics and sound quality

**Auditorium 3**

### Session chairs

**Sonoko Kuwano**

**Samir Gerges**

- |              |  |                |
|--------------|--|----------------|
| <b>09:00</b> | id 51 Tools for studying noise effects based on spectral and temporal content<br><i>Ernesto Accolti, Federico Miyara</i> | <b>invited</b> |
| <b>09:20</b> | id 1154 Sound quality in washing machines<br><i>Orhan B. E., Belek H. T.</i>   |                |

## Active noise and vibration control

### Session chairs

**Tsuyoshi Usagawa**

**Jean Tourret**

- |              |  |                |
|--------------|--|----------------|
| <b>09:40</b> | id 879 Disturbance attenuation of uncertain switched system by output feedback: application to vehicles<br><i>J. Raouf, H. Michalska</i>   |                |
| <b>10:00</b> | id 887 Practical active and semi-active strategies for the control of room acoustics in the low frequency range<br><i>H. Lissek, R. Boulandet, A.-S. Moreau</i>                    | <b>invited</b> |
| <b>10:20</b> | id 911 Active control of sound radiation from a rectangular plate subjected to a line moment and a plane wave<br><i>Kiran Sahu, Seppo Uosukainen, Hannu Nykänen, Jukka Tuhkuri</i> |                |
| <b>10:40</b> | id 934 Rapidly converging multichannel controllers for broadband noise and vibrations<br><i>A. P. Berkhoff</i>   | <b>invited</b> |
| <b>11:00</b> | id 950 On the design of hybrid active-passive piezoelectric vibration damping<br><i>J. L. Svensson, E. Rustinghi, B. R. Mace</i>   | <b>invited</b> |
| <b>11:20</b> | id 1010 Active noise profiling system development and algorithm implementation in a passenger car<br><i>Guangrong Zou, Marko Antila, Jari Kataja</i>                               | <b>invited</b> |
| <b>11:40</b> | id 1071 Study on practical use of active noise reflection unit (ANRU)<br><i>Shiro Ise, Keisuke Imoto, Takahiro Nakashima</i>   |                |

## Action plans of urban areas: strategies and experiences

**Auditorium 4**

### Session chairs

**Sérgio Luzzi**

**Gaetano Licita**

- |              |   |                |
|--------------|---|----------------|
| <b>09:00</b> | id 72 A full-scale intervention example of the “quiet side-concept” in a residential area exposed to road traffic noise: effects on the perceived sound environment and general noise annoyance<br><i>A. Gidlöf-Gunnarsson, E. Öhrström, T. Kihlman</i> |                |
| <b>09:20</b> | id 106 Action planning in Hamburg – a communicative approach for large agglomerations<br><i>Margit Bonacker, Matthias Hintzsche, Christian Popp</i>   | <b>invited</b> |
| <b>09:40</b> | id 254 Action plans; potential conflict of interest?<br><i>N. Faber</i>   | <b>invited</b> |
| <b>10:00</b> | id 427 Quiet areas: turning missed opportunities into enhancing soundscapes?<br><i>M. Weber, S. Luzzi</i>   |                |
| <b>10:20</b> | id 437 Harmonization of action plans and noise reduction plans: the HUSH project<br><i>Sérgio Luzzi, Raffaella Bellomini, Francesco Borchi</i>  | <b>invited</b> |
| <b>10:40</b> | id 446 Noise action plan of Bilbao: identification and evaluation of quiet areas<br><i>García Igone, Aspuru Itziar, Eguiguren Jose Luis</i>   |                |

- 11:00** id 548 What can be learnt from dutch noise act approach on quiet areas?  
*Henk Wolfert*
- 11:20** id 713 Strategic noise mapping, population exposure estimates and “acoustical planning” mitigation analysis in a European capital city  
*Enda Murphy, Eoin A. King*
- 11:40** id 799 Evaluating the impact on noise levels arising from a ban on private cars in Dublin city centre  
*Eoin A. King, Brian McManus, Paul McDonald, Henry Rice*

**Numerical techniques (FEM, BEM, IFEM, SEA)****3 A****Session chairs****Julieta António****Der Liang Young**

- 09:00** id 8 Graph cuts to reduce energy transmission in the SEA model of a building  
*O. Guasch, À. Aragonès, M. Janer*
- 09:20** id 11 Prediction of far field sound pressure of a diesel-generator using the inverse boundary element method  
*D. W. Herrin, J. Liu, D. J. Kato, A. F. Seybert*
- 09:40** id 14 Enhanced ACLD treatment using stand off – Layer: FEM based design and experimental vibration analysis  
*Sanjiv Kumar, Rajiv Kumar, Rakesh Sehgal*
- 10:00** id 16 Analytical and FEM based vibration analysis of PCLD treated beams with different boundary conditions: a Comparative study  
*Sanjiv Kumar, Rajiv Kumar, Rakesh Sehgal*
- 10:20** id 128 A wavelet-galerkin framework for the modeling of inner acoustic problems  
*S. Zhang, L. Cheng, N. Chen*
- 10:40** id 145 An experimental and analytical study for the added mass effect on a rectangular tank  
*Kuk-Su Kim, Nho-Seoung Kim, Hyun-Dong Cho, Young-Mo Kong*
- 11:00** id 152 Solving the intensity potential problem by using the boundary element method  
*Patrik B. U. Andersson*
- 11:20** id 251 A study on brake squeal noise index estimation  
*Ji Hoon Han, Sang Don Joo, Kyung Hwan Park*
- 11:40** id 411 Sound field radiated by a spherical loudspeaker array using a flexible membrane model  
*Lucas F. Cósar, Alexander M. Pasqual, José R. de F. Arruda*

**Measurements in room and building acoustics****3 B****Session chairs****Jean-Baptiste Chene****Maria Machimbarrena**

- 09:00** id 31 Occupied measurement of room impulse response – feasibility and limitations  
*Massimo Serafini, Francis F. Li, Trevor J. Cox*
- 09:20** id 32 Room impulse response measurement in the presence of non-trivial noise  
*Francis F. Li, Massimo Serafini*
- 09:40** id 41 The effectiveness of manual scanning measurements to determine the spatial average sound pressure level in rooms  
*C. Hopkins* invited
- 10:00** id 125 Room acoustic measurements in non Sabinian enclosures for music: echometry, modal analysis, sound decay analysis  
*Lorenzo Rizzi, Francesco Nastasi* invited

- 10:20** id 162 Measurement of sound diffusion coefficients of a sinusoidal surface in a reverberant workshop  
*J. Ducourneau, A. Faiz, J. Chatillon*
- 10:40** id 196 Measuring sound insulation of building façades: interference effects, and reproducibility  
*U. Berardi, E. Cirillo, F. Martellotta*
- 11:00** id 242 Assessment of acoustic properties of churches  
*Janko Vodopija, Sinisa Fajt, Miljenko Krhen*
- 11:20** id 421 Measuring long impulse responses with pseudorandom sequences and sweep signals  
*Antoni Torras-Rosell, Finn Jacobsen*
- 11:40** id 580 Acoustic measurements in the ear of dionysius at syracuse (Italy)  
*G. Iannace, L. Marletta, F. Sicurella, E. Ianniello*

## Soundscape and its applications

**3 C**

### Session chairs

**Paul Schomer**

**Bernard Berry**

- 09:00** id 142 Soundscapical correctness reexamined  
*Koji Nagahata*
- 09:20** id 391 Sound perception parameters in urban public spaces  
*S. Marry, M. Baulac*
- 09:40** id 465 Soundscapes in paintings  
*M. Bockhoff*
- 10:00** id 480 Recreational and festive soundscape in Gandia (Spain)  
*José Romero, Laura Sánchez, Jaume Segura, Salva Cerdá, Alicia Giménez, Enrique A. Navarro*
- 10:20** id 497 A study of the history of traffic noise in a large city: modern Tokyo compared to Edo – the predecessor to Tokyo  
*Takako Otsuka, Ulf Sandberg*
- 10:40** id 504 The soundscape approach for early stage urban planning: a case study  
*Bert De Coensel, Annelies Bockstaal, Luc Dekoninck, Dick Botteldooren, Brigitte Schulte-Fortkamp, Jian Kang, Mats E. Nilsson*
- invited
- 11:00** id 578 Classification of architectural spaces from the viewpoint of acoustic comfort  
*Papatya N. Dokmeci, Jian Kang*
- 11:20** id 593 On efforts to standardize a graphical description of the soundscape concept  
*Paul Schomer, A. L. Brown, Bert De Coensel, Klaus Genuit, Truls Gjestland, Jin Yong Jeon, Jian Kang, Peter Newman, Brigitte Schulte-Fortkamp, G. R. Watts*
- 11:40** id 605 Perception on soundscape with rail road in Korea  
*Pyoung Jik Lee, Joo Young Hong, Jin Yong Jeon, Hyo In Koh*

## General acoustics and vibration

**5 A**

### Session chairs

**Gilles Daigle**

**Dick Botteldooren**

- 09:00** id 42 Vibrations of a beam with a time-varying mass  
*Abramyan A. K., Vakulenko S. A.*
- 09:20** id 102 Noise levels in newly built ships  
*Ibrahim H. Çağlayan*
- 09:40** id 244 Practical considerations regarding vibration in hospitals  
*Ryan Bessey*

- 10:00** id 353 A study of a method for estimation of the engine speed from exhaust noise  
*Masaharu Ohya, Yasutaka Nakajima, Kiyokatsu Iwahashi*
- 10:20** id 432 Noise control studies on a residential kitchen hood  
*Sinem Öztürk, Haluk Erol*
- 10:40** id 527 Dynamic modeling of piezoelectric exciter for touch screen on mobile phone  
*Young-min Park, Kwang-joon Kim*
- 11:00** id 529 Self actuation and vibration sensing using piezo patches and its application to structural health monitoring  
*Seongbin Jeong, Seungjoon Kim, Jepil Lee, Junhong Park*
- 11:20** id 563 Experimental method for estimating the fuzzy parameters of fuzzy substructures  
*Lars Friis*
- 11:40** id 572 An appraisal of the Nyquist method for measuring modal frequency and damping  
*Francisco Simón, David K. Anthony*

**Noise mapping. Precision and uncertainty****5 B**

Session chairs	Miguel Arana	Hans Jonasson
<b>09:00</b>	id 235 The influence of the low flow roads noise in agglomerations on the population noise exposure and annoyance – case study <i>Predrag Vukadin, Ivan Tudor, Ivan Publicic</i>	
<b>09:20</b>	id 334 Rameters for street noise mapping in Lima <i>George Tache, Daniel Comeaga, Bogdan Lazarovici</i>	
<b>09:40</b>	id 337 Optimization of the calculation parameters for street noise mapping in Lima <i>George Tache, Daniel Comeaga, Bogdan Lazarovici</i>	
<b>10:00</b>	id 415 Sensitivity analysis of noise mapping <i>Hans G. Jonasson</i>	
<b>10:20</b>	id 473 An acoustical model based monitoring network <i>Peter Wessels, Tom Basten, Frits van der Eerden</i>	
<b>10:40</b>	id 584 Noise mapping of Riyadh city using measured noise and GPS data <i>Foda, M., El Madany, M., Alsaif, K., Aguib, A.</i>	
<b>11:00</b>	id 591 Laboratory study of the effects of green roof systems on noise reduction at street levels for diffracted sound <i>Hongseok Yang, Minsung Choi, Jian Kang</i>	
<b>11:20</b>	id 625 The process of creating updatable noise maps based on TrasguNET prediction software: accuracy of the results validated by the “Good Practice Guide” criteria <i>Jose Elias Arias Puga, Julio González Suarez, Roi Arias Salve, Dolores García Escrivano</i>	
<b>11:40</b>	id 645 Noise prediction for industrial facilities <i>Wolfgang Probst, Heinrich A. Metzen, Ingo Rabe</i>	

**Transportation noise (air, road, rail, marine vehicles)****5 C**

Session chairs	Josef Novak	Rajendra Singh
<b>09:00</b>	id 2 Urban transport and noise impact: a preventive applied research to control noise impact of new road to be build in Catania province <i>Francesco Patania, Antonio Gagliano, Francesco Nocera, Aldo Galesi</i>	

- 09:20** id 58 Resolving idle vibration and noise annoyance in a coach  
*Ming Uen Jen, Ming-Hung Lu*
- 09:40** id 146 An investigation on the method to predict noise level of conventional railway at high-rise buildings  
*Satoshi Ishikawa, Ryo Shiraga, Kenichi Yaginuma, Takashi Mathubara, Masaaki Hiroe, Kiyoshi Nagakura*
- 10:00** id 175 Modelling and measurement of noise at roundabouts  
*Gilles Pigasse, Hans Bendtsen*
- 10:20** id 213 Sound quality development for passenger vehicle  
*Koo Tae Kang, Ühn Seob Byun*
- 10:40** id 263 Automatic recognition of sources in case of multiple noise exposure  
*Christian Freneat, Guillaume Filippi, Christine Aujard, Boris Defreville*
- 11:00** id 283 Viscoelastic damping technologies for vibroacoustic control of railway wheels: influence of the rotation speed  
*C. M. A. Vasques, J. Dias Rodrigues*
- 11:20** id 326 Experimental investigation of turbulent boundary layer excitation acting on the sonar dome  
*F. Magionesi, E. Ciappi*
- 11:40** id 329 Noise level measurement procedure under motorcycle helmets  
*José Luis González Cespón, Manuel A. Sobreira Seoane, Jose Antonio Vilan Vilan*

## Noise annoyance

**1.06**

### Session chairs

**Christian Simmons**

**Carlos Fafaiol**

- 09:00** id 90 Comparative field studies on the effects of railway and road traffic noise  
*E. Öhrström, A. Gidlöf-Gunnarsson, M. Ögren, T. Jerson*
- 09:20** id 333 The impact of acoustical, operational and non-auditory factors on short-term annoyance due to aircraft noise  
*Dirk Schreckenberg, Rudolf Schuemeyer*
- 09:40** id 447 Response to occupational noise of medium levels at four types of work places  
*Eja Pedersen, Kerstin Persson Waye, Johanna Bengtsson Ryberg*
- 10:00** id 457 Proposal for a simple model predicting the total annoyance due to industrial noises with low-frequency content mixed to industrial noises with a 100Hz main component  
*Morel, J., Marquis-Favre, C., Violon, S., and Alayrac, M.*
- 10:20** id 655 Risk factors of noise annoyance in teachers in schools with classrooms characterized by different reverberation times  
*Jesper Kristiansen, Søren P. Lund, Per M. Nielsen, Roger Persson, Hitomi Shibuya*
- 10:40** id 795 A questionnaire on the individual attitude towards the acoustical environment  
*Gert Notbohm*
- 11:00** id 930 The role of fear in aircraft noise annoyance  
*Sabine A. Janssen, Henk Vos, Danny Houthuijs, Irene van Kamp, Oscar R. P. Breugelmans, Henk M. E. Miedema*
- 11:20** id 113 Annoyance due to road traffic vehicles  
*Nasim Akhtar, Purnima Parida, S. Gangopadhyay*

## Psychological effects of noise

### Session chairs

**Valtteri Hongisto**

**Hugo Fastl**

- 11:40** id 85 Determining the effects of low-frequency noise on humans  
*Gurovich, Y., Leventhal, G., Robinson, D., Sharp, B.*

## Noise from renewable energy technologies + Building acoustics properties and comfort classes

1.07

### Session chairs Eja Pedersen

Antonio Pérez-López

- |              |  |         |
|--------------|--|---------|
| <b>09:00</b> | id 73 Rating of wind turbine noise using Lden<br><i>G. P. van den Berg</i>   | invited |
| <b>09:20</b> | id 659 Predicting annoyance by wind turbine noise<br><i>Sabine A. Janssen, Henk Vos, Arno R. Eisses, Eja Pedersen</i>  | invited |
| <b>09:40</b> | id 466 Improved noise audit technique for wind farms<br><i>Steven Titus, Payam Ashtiani</i>  |         |
| <b>10:00</b> | id 352 Improvement of wind noise reduction performance of microphone-enclosed type windscreen<br><i>Hiroyuki Imaizumi, Yasumori Takahashi</i>                      |         |
| <b>10:20</b> | id 351 Why is wind turbine noise poorly masked by road traffic noise?<br><i>Eja Pedersen, Frits van den Berg</i>   | invited |
| <b>10:40</b> | id 57 Revision of sound classification schemes in Sweden<br><i>Christian Simmons</i>   |         |
| <b>11:00</b> | id 69 Background noise affects subjective sound insulation – needs to update the target values?<br><i>Keränen, J., Hongisto, V.</i>                                |         |
| <b>11:20</b> | id 996 An experimental study on clients' understanding of sound insulation of windows by listening experience<br><i>Keiji Kawai, Keisuke Miura, Tetsuya Sakuma</i> |         |
| <b>11:40</b> | id 1037 Determination and applicability of the required sound insulation values for facades<br><i>Selma Kurra</i>  |         |

## Economics of noise for sustainability

1.08

### Session chairs Abigail L. Bristow

Elisabete Arsenio

- |              |  |         |
|--------------|--|---------|
| <b>09:00</b> | id 185 Optimal design of dissipative silencer for gas turbine noise reduction<br><i>S. Semin, V. Tupov</i>   |         |
| <b>09:20</b> | id 1163 Economic appraisal of noise – integrating dose-response relationships between noise exposure and health impacts in the UK<br><i>Roald Dickens, Sravya Rao</i>          |         |
| <b>09:40</b> | id 510 A study of relationships between quality of life and road traffic noise value in Kunming city, China<br><i>Xuan Zhao, Abigail L. Bristow, Alberto M. Zanni</i>          |         |
| <b>10:00</b> | id 512 Cost-benefit analysis of noise control measures: an application of the benefit transfer methodology<br><i>Zsuzsanna Marjainé Szerényi, Gábor Harangozó, Anna Széchy</i> |         |
| <b>10:20</b> | id 654 Economic analyses of a national façade insulation effort<br><i>Ronny Klæboe, Knut Veisten, Astrid H. Amundsen, Juned Akthar</i>   | invited |
| <b>10:40</b> | id 710 A market model to analyse tradable noise permit schemes for airports<br><i>Astrid Gühnemann, Richard Connors, John Nellthorp</i>  | invited |
| <b>11:00</b> | id 880 UK experience of implementing noise values in transport appraisal, 3 years on<br><i>John Nellthorp</i>  |         |
| <b>11:20</b> | id 918 Willingness-to-accept compensation for road and rail noise annoyance<br><i>Vojtech Máca, Jan Urban</i>  |         |

- 11:40** id 980 Living with high noise levels, is it sustainable?  
*Cecília Rocha, Álvaro Costa, António Carvalho*

invited

## Urban noise and its control

**1.13**

### Session chairs

J. L. Bento Coelho

Christian Popp

- 09:00** id 171 Method for predicting future developments of traffic noise in urban areas in Europe  
*Erik M. Salomons, Dick van den Hout, Sabine A. Janssen, Ulrike Kugler, Vojtech Maca*
- 09:20** id 278 Towards an extensive noise and air quality measurement network  
*T. Van Renterghem, D. Botteldooren, P. Thomas, A. Can, S. Dauwe, B. Dhoedt, M. Rademaker, B. De Baets, A. Touhami, F. Dominguez, J. Theunis, R. O'Donoghue*
- 09:40** id 476 Impact sound of water supply pump stations in neighboring communities  
*B. L. Oliveira, S. R. Bertoli*
- 10:00** id 539 Control of urban noise in denmark by use of noise action plans  
*Hugo Lyse Nielsen*
- 10:20** id 581 Prediction and management of emergent noise in the tomorrow's sustainable city  
*Jérôme Defrance, Romain Dumoulin*
- 10:40** id 948 Quiet area: what people think or say in the participation process  
*Margit Bonacker*
- 11:00** id 1123 Railway noise - noise reduction strategies  
*K. Giering, S. Augustin, W. Eberle*

invited

invited

## Urban sound propagation and evaluation

### Session chairs

J. L. Bento Coelho

Christian Popp

- 11:20** id 131 Efficient simulation of sound propagation including multiple diffractions in urban geometries by convex sub-division  
*Alexander Pohl, Uwe M. Stephenson*
- 11:40** id 848 Research of urban environment noise exposure evaluation  
*Ruixiang Song, Wentang Ren, Bin Zhang, Xiantong Li*

## notes

## Tuesday, 15 June

Special Participations	Concert halls, theaters and opera houses (cont.)				Auditorium 1
	Ultrasound				
Environmental vibration and its impacts on buildings and people	Action plans of urban areas: strategies and experiences (cont.)				Auditorium 3
Numerical techniques (FEM, BEM, IFEM, SEA)	Numerical techniques (FEM, BEM, IFEM, SEA)				Auditorium 4
Measurements in room and building acoustics	Measurements in room and building acoustics				3A
Noise in healthcare facilities	Noise in healthcare facilities				3B
Sonic crystal noise barriers	Sonic crystal noise barriers				3C
Measurements of surface properties	Measurements of surface properties				5A
Transportation noise (air, road, rail, marine vehicles)	Transportation noise (air, road, rail, marine vehicles)				5B
Recreational noise	Recreational noise				5C
Ducts and mufflers	Ducts and mufflers				1.06
Legislation and noise control policies	Legislation and noise control policies				1.07
Industrial noise and noise at work	Industrial noise and noise at work				1.08
					1.13

Coffee break 16:00 to 17:00

**Concert halls, theaters and opera houses (cont.)****Auditorium 1**

<b>Session chairs</b>	<b>Higini Arau</b>	<b>Hidaka Takayuki</b>	
<b>14:00</b>	id 413 Stage acoustics, further development of parameter LQ7-40 <i>Van Luxemburg, L. C. J., Wenmaekers, R. H. C., Hak, C. C. J. M., Kivits, M.</i>		invited
<b>14:20</b>	id 541 Room acoustical modelling differences and their consequences <i>Attila B. Nagy, András Kotschy, Anders Chr. Gade, Hallur Johannessen</i>		invited
<b>14:40</b>	id 564 Acoustic study of Granada Manuel de Falla auditorium <i>Vallejo Ortega, G., Sánchez Rivera, J. I.</i>		invited
<b>15:00</b>	id 566 Sound-field research of urban squares used for outdoor rock concerts <i>Pieter Thomas, Timothy Van Renterghem, Luc Dekoninck, Dick Botteeldooren</i>		invited
<b>15:20</b>	id 635 A study on the room acoustics parameters and the turkish melodic music <i>Z. Yüksel Can, S. Erdogan, G. K. Konuk, A. Ozcevik, C. Can</i>		invited
<b>15:40</b>	id 642 Spread of acoustical quality in concert halls as related to hall shape <i>Takayuki Hidaka, Leo L. Beranek</i>		invited
<b>16:00</b>	id 709 Preliminary acoustic measurements in the auditorium "Oscar Niemeyer" in Ravello <i>R. Dragonetti, C. Ianniello, R. Romano</i>		invited
<b>16:20</b>	id 714 Acoustics of the teatro regio in Turin before and after the refurbishment <i>Arianna Astolfi, Pasquale Bottalico, Daniele Guglielmino</i>		invited
<b>16:40</b>	id 788 Effect of room acoustics on musicians' performance <i>Kanako Ueno, Kosuke Kato, Keiji Kawai</i>		invited
<b>17:00</b>	id 873 Variable acoustics orchestra shell in a 1700 Italian opera house: planning, realization, results <i>Marco Cesare Consumi, Alessandro Cocchi, Ryota Shimokura</i>		invited

**17:20 Special participation of the portuguese musician Pedro Caldeira Cabral****Ultrasound****Auditorium 3**

<b>Session chairs</b>	<b>Bajram Zeqiri</b>	<b>Adriano Alippi</b>	
<b>14:00</b>	id 7 The propagation waves analysis in case of components used for high ultrasound energy generation and transmission <i>Odobescu Grigore Liviu</i>		
<b>14:20</b>	id 61 Ultrasonic transmission through perforated plates: periodic and random hole arrays <i>Héctor Estrada, Pilar Candela, Antonio Uri, Francisco Belmar, F. J. García de Abajo, Francisco Meseguer</i>		
<b>14:40</b>	id 129 Ultrasonic spectroscopy of several pure kneser liquids and their mixtures <i>Bogumił B. J. Linde, Ewa Skrodzka</i>		
<b>15:00</b>	id 220 Laboratory tests of the influence of ultrasonic noise on the human in the frequency range 10 kHz – 40 kHz <i>Bozena Smagowska</i>		
<b>15:20</b>	id 434 The numerical material microstructure dimension scales detection by ultrasonic characterization <i>Fairouz Bettayeb</i>		
<b>15:40</b>	id 438 Detection and measurement of cavitation in sonochemistry and medical ultrasound <i>Gareth J. Price</i>		invited
<b>16:00</b>	id 540 Characterisation of a two-frequency cavitation cell <i>Gianluca Memoli, Mark Hodnett, Pierre Gélat, Bajram Zeqiri, Mike Draper, Simon Denley</i>		invited
<b>16:20</b>	id 549 Considerations on the ultrasonic-assisted dispersion of carbon nanotubes <i>Gianluca Memoli, Achilleas Sesis, Gareth Hinds, Bajram Zeqiri</i>		
<b>16:40</b>	id 706 Acoustics and vibrations for process improvements: an innovative ultrasounds use in harsh environment <i>Baptiste Le Sueur, Pascal Vouagner, Thierry Mazoyer</i>		

- 17:00** id 931 Towards the understanding of a complex cavitation environment – electrochemistry, acoustics and imaging observations  
*Peter R. Birkin, Timothy G. Leighton, Douglas G. Offin, Christopher J. B. Vian* invited
- 17:20** id 1046 Surface modes in periodically perforated plates at ultrasonic frequencies  
*Héctor Estrada, Pilar Candelas, Antonio Uri, Francisco Belmar, F. J. García de Abajo, Francisco Meseguer*
- 17:40** id 1157 Identifying cavitation around dental ultrasonic instruments  
*Walmsley, A. D., Felver, B., King, D. C., Lea, S. C., Lumley, P. J., Price, G. J.* invited

## Action plans of urban areas: strategies and experiences (cont.)

**Auditorium 4**
**Session chairs**
**Sérgio Luzzi**
**Gaetano Licita**

- 14:00** id 878 Integration between noise reduction plan and strategic action plan in the city of Florence  
*Raffaella Bellomini, Francesco Borchi, Sergio Luzzi* invited
- 14:20** id 927 Municipal noise reduction plans – a case study  
*Márcia Melro, Luís Conde Santos*
- 14:40** id 990 Artificial soundscape approach to noise pollution in urban areas  
*G. Licita, M. Cobianchi, L. Brusci*
- 15:00** id 998 Quiet areas management in greater Lyon: from local consultation meeting to agglomeration policy  
*J. Vallet, B. Vincent, F. Fradet*
- 15:20** id 1134 Action planning and technical solutions for urban vibrations monitoring and reduction  
*Sergio Luzzi, Luca Alfinito, Andrey Vasilyev*

## Environmental vibration and its impacts on buildings and people

**Session chairs**
**Michel Villot**
**Fernando Schiappa**

- 15:40** id 172 A study on the environmental ground vibration accompanying demolition of a building foundation  
*Yousuke Yamada, Fumio Sasaki, Yasuo Yamasaki, Kaori Iiyama, Shin'ichiro Takano*
- 16:00** id 379 Validation of prediction methods for vibration and groundborne noise of railways  
*Roger Mueller, Armin Ziegler*
- 16:20** id 419 Modelling the influence of building types on the building response to railway vibration  
*M. Villot, P. Ropars, P. Jean, E. Bongini, F. Poisson*
- 16:40** id 420 Influence of track-work on building response to railway vibration  
*C. Guigou, M. Villot, P. Ropars, C. Petit, E. Bongini, F. Poisson* invited
- 17:00** id 688 Strategic vibration mapping for railway infrastructures  
*Gabriel Alarcón, J. Ignacio Palacios, Jaume Solé*
- 17:20** id 693 Effect of railway structures upon passby vibration transmission  
*Jaume Solé, Joan Cardona, J. Ignacio Palacios*
- 17:40** id 712 New methodologies for determining exposure in residential environments from overground railway vibration and evaluation of uncertainties in measurement and estimation  
*Gennaro Sica, James Woodcock, Eulalia Peris, Andrew Moorhouse, David Waddington*

## Numerical techniques (FEM, BEM, IFEM, SEA) (cont.)

**3 A**
**Session chairs**
**Julieta António**
**Jordi Jove**

- 14:00** id 479 Applications of multipole BEM in acoustic simulation at EADS  
*Isabelle Terrasse, Guillaume Sylvand, Fanny Darbas* invited
- 14:20** id 495 Finite-element study of directional microphones in a hearing aid  
*M. J. Herring Jensen*

- 14:40** id 503 A fast multipole BE analysis of a small room with sound absorbers using domain decomposition approach  
*Yosuke Yasuda, Kazushi Eda, Tetsuya Sakuma, Takuya Oshima* invited
- 15:00** id 554 Vibrations from tunnels in stratified anisotropic media  
*Holger Waubke, Georg Rieckh, Wolfgang Kreuzer* invited
- 15:20** id 568 Frames for acoustic BEM  
*Georg Rieckh, Peter Balazs, Wolfgang Kreuzer, Holger Waubke*
- 15:40** id 612 Various approaches to calculate sound transmission loss of thin baffled plates  
*Y. Aoki, R. Piscoya, W. Maysenhölder, M. Ochmann* invited
- 16:00** id 648 Using reciprocity in boundary element calculations  
*Peter M. Juhl, Vicente Cutanda Henríquez* invited
- 16:20** id 658 Study of the aerodynamic contribution to the high-speed train cabin internal noise by means of hybrid FE-SEA modeling  
*Jordi Jové, Fabienne Guerville, Alberto Vallespín* invited
- 16:40** id 766 A numerical method for steady-state vibration of pipe with harmonically pulsating flow  
*Seong Hyeon Lee, Weui Bong Jeong*
- 17:00** id 770 2.5-dimensional finite-difference time-domain analysis and its application to road traffic noise problems  
*Shinichi Sakamoto, Rino Otani* invited
- 17:20** id 784 Time-domain simulation of acoustic wave propagation by Chebyshev collocation  
*Chunqi Wang, Lixi Huang*
- 17:40** id 882 OpenBEM an open source boundary element method software in acoustics  
*Vicente Cutanda Henríquez, Peter Møller Juhl*

## Measurements in room and building acoustics (cont.)

**3 B**

Session chairs	Jean-Baptiste Chene	Heinz-Martin Fischer
<b>14:00</b>	id 685 Considerations on the impact sound pressure level of bare floor slabs in hollow brick and concrete <i>Alessandro Schiavi, Paolo Tarizzo, Arianna Astolfi</i>	
<b>14:20</b>	id 692 Spatial echogram analysis of a small auditorium with observations on the dispersion of early reflections <i>Xavier Falourd, Lukas Rohr, Mario Rossi, Hervé Lissek</i>	
<b>14:40</b>	id 699 Determining a scene geometry from its impulse response <i>David García-Garzón, Daniel Arteaga, John Usher, Toni Mateos</i>	
<b>15:00</b>	id 718 Acoustic behavior of dinning spaces (Canteens) <i>E. Reboredo, A. Velosa, J. L. Pinto, E. Alves</i>	
<b>15:20</b>	id 751 Rainfall noise measurements: assessment and perspective four years after the publication of EN ISO 140-18 <i>Jean Baptiste Chéné, Catherine Guigou-Carter, Mikkel Langager Larsen</i>	
<b>15:40</b>	id 894 Identifying acoustic bridges by using beamforming and sound intensity in situ measurement technique <i>Joaquín Egea, Carlos Sánchez, C. César Rodrigues, Eduardo Latorre</i>	
<b>16:00</b>	id 915 European round robin test for sound absorption measurements <i>Nils-Åke Andersson</i>	invited
<b>16:20</b>	id 928 Interlaboratory comparison on building acoustics <i>Jorge Fradique, Isabel Leal, Mário Mateus, Fátima Inglês, Ana Falcão</i>	
<b>16:40</b>	id 944 Uncertainties in prediction of acoustic response in orthodox church buildings <i>Dragana S. Sumarac Pavlovic, Miomir M. Mijic</i>	
<b>17:00</b>	id 1014 Analysis of the Polytechnic University of Valencia auditoriums, through a unitary measurement protocol application <i>Radu Lacatis, Arturo Barba Sevillano, Alicia Giménez, Salvador Cerdá Jordá</i>	

## Soundscape and its applications (cont.)

**3 C**

### Session chairs

**Brigitte Schulte-Fortkamp**

**Klaus Genuit**

- |              |        |  |         |
|--------------|--------|--|---------|
| <b>14:00</b> | id 606 | Classification of urban soundscape through social surveys<br><i>Jin Yong Jeon, Pyoung Jik Lee</i>  |         |
| <b>14:20</b> | id 687 | Soundscape and core affect regulation<br><i>Tjeerd C. Andringa</i>   |         |
| <b>14:40</b> | id 729 | Research to support indicator-based, adaptive planning & management of park soundscapes<br><i>Peter Newman, Steve Lawson, Kurt Fistrup, Paul Schomer</i>                 |         |
| <b>15:00</b> | id 760 | Whispering archways as intimate soundscapes<br><i>David Lubman</i>   |         |
| <b>15:20</b> | id 780 | On sound source identification and taxonomy in soundscape research<br><i>Ö. Axelsson, M. E. Nilsson</i>  | invited |
| <b>15:40</b> | id 989 | The ecological basis for architectural and environmental soundscapes<br><i>Gary W. Siebein, Lucky Tsaih, Sang Bum Park, Keely M. Siebein, Chris Jones, Reece Skelton</i> | invited |

## Noise in healthcare facilities

### Session chairs

**Kerstin Persson Waye**

**Diogo Alarcão**

- |              |        |   |         |
|--------------|--------|---|---------|
| <b>16:00</b> | id 296 | Analysis of relationships between the sound environment at the Intensive Care Unit (ICU) and early signs of ICU delirium<br><i>Johansson L., Bergbom I., Persson Waye K., Ryherd E., Lindahl B.</i>                     |         |
| <b>16:20</b> | id 589 | Acoustical challenges for a hospital chiller room addition<br><i>Zohreh Razavi</i>  |         |
| <b>16:40</b> | id 592 | The evolving perception of staff on the acoustic environment of Critical Care Units<br><i>Hui Xie, Jian Kang</i>  | invited |
| <b>17:00</b> | id 668 | Personnel response in intensive care units<br><i>Kerstin Persson Waye, Erica Ryherd, Timothy Hsu, Berit Lindahl, Ingegerd Bergbom</i>   | invited |
| <b>17:20</b> | id 975 | Monitoring of continuous noise and the carefully and abrupt manipulations of baby incubators<br><i>Sueli Mutsumi Tsukuda Ichisato, Karen Raiocovitch, Paulo Fernando Soares</i>   |         |
| <b>17:40</b> | id 991 | Comparing equivalent continuous noise measured simultaneously in the macro and micro environment in Maringá, Brazil<br><i>Sueli Mutsumi Tsukuda Ichisato, Francielle Renata Danielli Martins, Paulo Fernando Soares</i> |         |

## General acoustics and vibration (cont.)

**5 A**

### Session chairs

**Gilles Daigle**

**Dick Botteldooren**

- |              |        |   |         |
|--------------|--------|---|---------|
| <b>14:00</b> | id 768 | Vibration reduction of beams and plates using Acoustic Black Hole effect<br><i>Vasil B. Georgiev, Jacques Cuenca, Francois Gautier, Laurent Simon</i>   |         |
| <b>14:20</b> | id 835 | Analysis of the cause and reduction of refrigerant induced noise in refrigerator<br><i>Min Seong Kim, Weui Bong Jeong, Hyung Suk Han</i>  |         |
| <b>14:40</b> | id 853 | Modeling the flexural vibrations of planar assemblies of polygonal plates using the image source method<br><i>Jacques Cuenca, Francois Gautier, Laurent Simon</i>   |         |
| <b>15:00</b> | id 951 | On the eigenfrequencies of a combined system consisting of a simply supported beam and in-span helical spring-mass with mass of the helical spring considered<br><i>Serkcan Zeren, Metin Gürgöze, Orhan Çakar</i> | invited |

- 15:20** id 960 Ultrasonic pumping of liquids in the two directions of a vertical tube by a vibrating surface  
*Arturo Santillán, Vicente Cutanda Henríquez*
- 15:40** id 1159 Reticular noise method for acoustic insulation engineering  
*José Antonio Aniorte Pérez, Salvador Domingo Bets*

## Sonic crystal noise barriers

Session chairs	Keith Attenborough	Sónia Antunes
<b>16:00</b>	id 223 Determination of the thickness of sonic crystal acoustic barriers using evanescent modes <i>L. M. García-Raffi, V. Romero-García, J. V. Sánchez-Pérez</i>	
<b>16:20</b>	id 224 Sonic crystal acoustic barriers based on scatterers with added acoustical properties <i>V. Romero-García, E. Fuster-García, J. V. Sánchez-Pérez, L. M. García-Raffi</i>	
<b>16:40</b>	id 233 New arrangements of acoustic scatterers with high attenuation properties <i>J. V. Sánchez-Pérez, S. Castilleira, V. Romero-García, L. M. García-Raffi</i>	
<b>17:00</b>	id 522 On sonic crystals composed of resonating thin plates <i>Anton Krynnik, Olga Umnova</i>	
<b>17:20</b>	id 636 The performance of vertical and horizontal sonic crystal noise barriers above a ground surface <i>Alvin Yung Boon Chong, Keith Attenborough, Shahram Taherzadeh</i>	invited
<b>17:40</b>	id 734 On performance of sonic crystals in presence of ground plane <i>Anton Krynnik, Olga Umnova</i>	

## Noise mapping. Precision and uncertainty (cont.)

5 B

Session chairs	Miguel Arana	Hans Jonasson
<b>14:00</b>	id 695 Practical experience in noise mapping with a MEMS microphone based distributed noise measurement system <i>Richard Barham, Martin Chan, Matthew Cand</i>	
<b>14:20</b>	id 971 The influence of source-receiver distance into the assessment of traffic noise variability <i>Alfonso Rodríguez Molares, Manuel A. Sobreira Seoane</i>	
<b>14:40</b>	id 1113 Successive deletion of main sources in acoustic maps working in the time domain <i>Dirk Döbler, Ralf Schröder, Gunnar Heilmann</i>	
<b>15:00</b>	id 1143 Uncertainty in noise mapping versus precision in the digital terrain model <i>Arana, M., San Martín, R., Nagore, I., Pérez, D.</i>	invited

## Measurements of surface properties

Session chairs	Kristian Jambrosic	Massimo Garai
<b>15:20</b>	id 279 Loudspeaker influence on reflection measurements using the Adrienne method <i>R. Wehr, M. Haider, M. Conter, S. Gasparoni, S. Breuss</i>	invited
<b>15:40</b>	id 423 Measurement of sound absorption characteristics of porous asphalt pavement and evaluation of noise reduction effect <i>Teruo Iwase, Kenshi Suzuki, Tomoyuki Kobayashi, Koichi Yoshihisa, Yasuaki Okada</i>	invited
<b>16:00</b>	id 489 The two-microphone method in the impulse response domain <i>Paulo Medeiros Massarani</i>	invited
<b>16:20</b>	id 576 Characterization and improvement of scattering and absorption by architectural surfaces without the use of specialized facilities <i>Chris Bibby, Murray Hodgson</i>	

- 16:40** id 663 Issues on the reverberation room method for measuring the scattering coefficients: borthor setting and revolution of test sample  
*Hyojin Lee, Yuzo Tsuchiya, Tetsuya Sakuma*
- 17:00** id 674 Ensemble averaged absorption characteristics of materials using an in-situ technique: a basic application on helmholtz resonator  
*Rei Matsumoto, Toru Otsuru, Reiji Tomiku, Noriko Okamoto*
- 17:20** id 899 Ensemble averaged surface normal impedance measured in-situ: a trial application onto finite element sound field analysis  
*Toru Otsuru, Reiji Tomiku, Noriko Okamoto, Takeshi Okuzono, Kusno Asniawaty, Nazli Che Din, Chihiro Ueki*

invited

## Transportation noise (air, road, rail, marine vehicles) (cont.)

**5 C**

### Session chairs

**Josef Novak****Rajendra Singh**

- 14:00** id 332 Bus passenger's noise exposure assessment in itajuba, Brazil  
*Silva, L. F., Correia, F. N.*
- 14:20** id 359 Optimization of the tram transportation network of bucharest city through tram noise emission study  
*Daniel C. Comeaga, B. Lazarovici, G. Tache, C. Balta*
- 14:40** id 362 Railway network roughness mapping using the ARRoW system in the LECAV project  
*Wout Schwanen, Ard Kuijpers, Estelle Bongini*
- 15:00** id 387 Traffic engineering indicators analysis as explanatory variables of traffic noise  
*Frederico Rodrigues, Cristiano Resende, Carlos David Nassi, Suzana Kahn*
- 15:20** id 493 Noise from moored ships  
*J. Rob Witte*
- 15:40** id 530 An examination on required sound levels for the external acoustic sign for "quiet vehicles"  
*Katsuya Yamauchi, Masayuki Takada, Koji Nagahata, Shin-ichiro Iwamiya*
- 16:00** id 602 Introduction of vehicle noise control policy of Paiwan  
*Ping-Fei Hsieh, Li-Chung Chou, Hui-Hua Lin, Jove Pan, King-Fa Hong, Shao-Quan Zhuang, Yu-Ying Chen*
- 16:20** id 660 An investigation of frictional vibration between pad and calliper in the generation of disk brake squeal  
*Chris Talbot, John Fieldhouse, David Bryant*
- 16:40** id 719 Characterization of the noise emission by road vehicles on a stretch of the EN109 road in Vagos  
*J. Silva, A. Velosa, J. L. Pinto, E. Alves*
- 17:00** id 720 Simulation of vehicle noise in the virtual city  
*Robert Smyth, Henry Rice, Paul McDonald, Anton Gerdelan*
- 17:20** id 764 Differential exposure of the urban population to road traffic noise in Hong Kong  
*Kin-che Lam, Weichun Ma, Yi-tak Teresa Chung*
- 17:40** id 774 A ground-borne vibration assessment model for rail systems at-grade  
*J. Cardona, J. Romeu, R. Arcos, A. Balastegui*

## Psychological effects of noise (cont.)

**1.06**

### Session chairs

**Sonoko Kuwano****Samir Gerges**

- 14:00** id 287 An experiment on noise and cognition in a simulated open-plan office  
*Jahncke, H., Hygge, S., Halin, N., Green, A-M., Dimberg, K.*

invited

- 14:20** id 348 Effects of office noise on work performance and acoustic comfort laboratory experiment simulating three different office types  
*Valtteri Hongisto, Anni Haapakangas, Esko Keskinen, Mira Haka*

- 14:40** id 349 Difference of acoustic environment between private office rooms and open plan offices  
*Valtteri Hongisto, Anu Kaarlela-Tuomaala, Riikka Helenius, Esko Keskinen*

- 15:00** id 491 Subjective evaluation of single and combined environmental noise sources  
*Peter Keilhacker, Juergen Hellbrueck*

invited

- 15:20** id 496 Self-reported health and well-being and its relationship with residential traffic noise exposure  
*Mark Brink*
- 15:40** id 782 Subjective experiment on acoustical environment in a heavy truck  
*Sakae Yokoyama, Hiroo Yano, Hideki Tachibana*

## Recreational noise

Session chairs	Antonio Pérez-López	Jorge Fradique	
<b>16:00</b>	id 388 The management of recreational noise in Rome <i>G. Brambilla, G. Carati, E. Carlini, D. Donati, G. Ferri, M. Rizzo</i>		invited
<b>16:20</b>	id 435 Personal music players usage for metros' passengers <i>L. Maffei, M. Masullo, U. Palmieri</i>		
<b>16:40</b>	id 498 Tourist influence on nightlife noise <i>Recuero, M., Ausejo, M., Pavón, I., Asensio, C.</i>		invited
<b>17:00</b>	id 565 Recreation noise in acoustic mapping <i>J. Romeu, S. Jiménez, M. Genescà, A. Sánchez</i>		invited
<b>17:20</b>	id 656 An attempt to evaluate the recreational noise dose <i>Barrigón, J. M., Guzmán-Jorna, D., Méndez-Sierra, J. A., Gómez-Escobar, V., Vilchez-Gómez, R., Carmona del Río, J., Rey-Gozalo, G.</i>		invited
<b>17:40</b>	id 736 Noise impact of easter drum and bugle bands rehearsal <i>Maria Laura Postigo, Enrique Nava, José Manuel Guevara</i>		

## Ducts and mufflers

**1.07**

Session chairs	Manohar Lal Munjal	Ganghua Yu	
<b>14:00</b>	id 13 A multidimensional analytical study of sound attenuation in catalytic converters <i>Francisco D. Denia, Luis Baeza, Ray Kirby, Ahmet Selamet</i>		invited
<b>14:20</b>	id 40 The technique of active/inactive finite elements for the analysis and optimization of acoustical chambers <i>Renato Barbieri, Nilson Barbieri</i>		
<b>14:40</b>	id 67 Flow noise characteristics generated from straight duct with some holes <i>Kunihiiko Ishihara</i>		
<b>15:00</b>	id 78 Acoustic source characteristics of the exhaust and intake systems of a spark ignition engine <i>M. L. Munjal, R. N. Hota</i>		invited
<b>15:20</b>	id 99 Modeling of T-shaped acoustic resonators <i>Ganghua Yu, Li Cheng, Deyu Li, War Har</i>		
<b>15:40</b>	id 100 Acoustic performance of an industrial muffler <i>B. Venkatesham, M. L. Munjal</i>		invited
<b>16:00</b>	id 108 The vibration of branched pipes considering fluid-structure interaction <i>YanHua Li, Gongmin Liu</i>		
<b>16:20</b>	id 338 Helicoidal resonator <i>Wojciech Lapka</i>		
<b>16:40</b>	id 366 Acoustic attenuation in the gas flow piping systems taking into account the velocity of the gas flow <i>Masato, Nishiguchi, Itsuro, Hayashi</i>		
<b>17:00</b>	id 195 Development of absorptive silencers to forced-draft fans <i>V. Tupov</i>		
<b>17:20</b>	id 790 Propagation of sound in ducts with elliptical cross-section and lined walls <i>J. M. G. S. Oliveira, P. J. S. Gil</i>		
<b>17:40</b>	id 1085 Approximate expressions for the reflection coefficient at the open end of cylindrical ducts terminated by flanges of finite size <i>A. R. da Silva, P. Mareze, A. Lenzi</i>		

## Legislation and noise control policies

1.08

### Session chairs

**Michiko So Finegold**

**Larry Finegold**

- |       |         |   |         |
|-------|---------|---|---------|
| 14:00 | id 79   | Using health effects of noise in economic valuation policies<br><i>Bernard F. Berry, Ian H. Flindell</i>  | invited |
| 14:20 | id 93   | European noise policy – directive 2002/49/EC<br><i>Balazs Gergely</i>   | invited |
| 14:40 | id 193  | 40-45 dB – criteria for a good sound environment in urban areas<br><i>Tor Kihlman, Mats E. Nilsson</i>  | invited |
| 15:00 | id 525  | Questionnaire survey of policies on environmental vibration in different countries<br><i>Akinori Yokota, Sunao Kunitatsu, Yasunao Matsumoto, Noriaki Kashima</i>  | invited |
| 15:20 | id 577  | Political options for sustainable transport with less noise<br><i>D. Schwela</i>  | invited |
| 15:40 | id 653  | Time and frequency weightings and the assessment of sound exposure<br><i>Rodrigo Ordoñez, Miguel Angel Aranda de Toro, Dorte Hammershøi</i>   |         |
| 16:00 | id 689  | The 5db(A) low frequency penalty in community noise regulations – fact or fiction?<br><i>Robert A. Putnam, Ramesh Kagolanu, John E. Uber, Roland Hetzel</i>   |         |
| 16:20 | id 789  | A new legislation for air craft noise in Austria<br><i>Werner Talasch, Christoph Lechner</i>  | invited |
| 16:40 | id 929  | Contribution to the application of the 2008 Portuguese building acoustical requirements regulation<br><i>Carvalho, L. C.</i>  |         |
| 17:00 | id 1126 | Explanation of and conclusions drawn from american national standard methods for estimation of awakenings associated with outdoor noise events heard in homes<br><i>Paul D. Schomer, Nicholas P. Miller</i> | invited |
| 17:20 | id 1158 | Temporary noisy activities licensing flowchart<br><i>Paulo Campos</i>   |         |
| 17:40 | id 1161 | On the relevance of nonacoustic factors influencing the annoyance caused by environmental sounds – a literature study<br><i>Joos Vos</i>  |         |

## Industrial noise and noise at work

1.13

### Session chairs

**Luís Conde Santos**

**Pedro Arezes**

- |       |        |  |  |
|-------|--------|--|--|
| 14:00 | id 198 | Efficiency of application of short sound proof screens for noise reduction of the power equipment<br><i>D. Chugunkov</i>                 |  |
| 14:20 | id 285 | Low-noise circular saw blades by added viscoelastic damping: centrifugal stiffening effect<br><i>C. M. A. Vasques, J. Dias Rodrigues</i> |  |
| 14:40 | id 305 | Controlling the quality of coal sifting by means of acoustical analysis and monitoring<br><i>J. H. Granneman, A. Kok</i>                 |  |
| 15:00 | id 325 | Identification of sources of sound in the working place flow field<br><i>Waldemar Paszkowski, Artur Kuboszek</i>                         |  |
| 15:20 | id 342 | Methodology for prediction and control noise at work<br><i>Rodrigues, M. N., Rodrigues, F. C., Vecchi, M.A. M.</i>                       |  |
| 15:40 | id 462 | Acoustic assessment of engine-generators with the use of global index<br><i>Dariusz Pleban</i>   |  |
| 16:00 | id 601 | A study on the acoustic induced vibration for the piping of offshore structure using dynamic stress evaluation<br><i>Heui-Won Kim</i>    |  |

- 16:20** id 861 The influence of the quality of the measured data in the accuracy of blockage reconstructions in ducts  
*Conrado de Mello Calvet, Ricardo E. Musafir*
- 16:40** id 947 Case studies in noise source location and identification via cross-correlation  
*Werner Richarz, Bruce Robertson, Timothy Preager, Harrison Richarz*
- 17:00** id 992 Vibrations at the workplace – practical cases of evaluation  
*Jorge R. Preto, Clotilde Lages, Luís Conde Santos*
- 17:20** id 1021 Acoustic label of cement factories  
*Miguel Lopes, Márcia Melro, Christine Matias, Luís Conde Santos*

## Wednesday, 16 June

09:00												
09:20												
09:40												
10:00												
10:20												
10:40												
11:00												
11:20												
11:40												
12:00					Distinguished lecture - Effectiveness of noise barriers							
13:00					Lunch							

**Coffee break 10:30 to 11:30**

Assessment and strategies for managing noise	Auditorium 1
Signal processing and analysis	Auditorium 3
Outdoor sound propagation in living environment	Auditorium 4
Soundscape-metrics	Numerical techniques (FEM, BEM, IFEM, SEA)(cont.)
Acoustical metrology (instruments, measurements, standards, uncertainty)	Measurements in room and building acoustics (cont.)
Noise Problems and solutions in developing and in transition countries	
	3A
	3B
	3C
Tire/road noise	5A
Lightweight partitions and systems	5B
Community noise maps and action plans	5C
Noise barriers	1.06
Transportation noise (air, road, rail, marine vehicles) (cont.)	1.07
Characterization of structure-borne sound sources	
Speech communication in road vehicles + Speech privacy	Noise control engineering education
	1.08
	1.10
	1.13
Non linear dynamics of acoustic resonators	

**Assessment and strategies for managing noise****Auditorium 1****Session chairs****Douglas Manvell****George Maling**

- 09:00** id 133 Environmental noise management of industries  
*L. Schmidt, A. Fischer* invited
- 09:20** id 517 Experiences with END action plans and environmental policy plans  
*Hans J. A. van Leeuwen, Michel H. M. van Kesteren* invited
- 09:40** id 183 How to manage silence? A large scale noise management system  
*Richard Schmidt* invited
- 10:00** id 236 Towards integral acoustic management for dutch motorways: the second phase  
*Wiebe Alberts, Marjon Dijkman* invited
- 10:20** id 370 The role of the action planning process and the planning system in managing noise under the environmental noise directive  
*Bernadette McKell* invited
- 10:40** id 550 Common noise assessment methods in EU: CNOSSOS-EU (part II: application for strategic noise mapping and action planning)  
*Fabienne Anfosso-Lédée, Marco Paviotti, Stylianos Kephalopoulos, Balazs Gergely* invited
- 11:00** id 696 Common noise assessment methods in EU: CNOSSOS-EU (part III: guidance for the competent use for strategic noise mapping purposes)  
*Simon Shilton, Nigel Jones, Thomas Werst, Dirk van Maercke, Paul de Vos, Fabienne Anfosso, Marco Paviotti, Stylianos Kephalopoulos*
- 11:20** id 101 Study of uncertainty in noise mapping  
*Ausejo, M., Recuero, M., Asensio, C., Pavón, I., Pagán, R.* invited
- 11:40** id 422 Environmental noise assessment methods in Canada  
*Stephen E. Keith, David S. Michaud, Stephen H. P. Bly* invited

**Distinguished lecture****Session chair****Giovanni Brambilla**

- 12:00** id 360 **Effectiveness of noise barriers**  
*Gilles A. Daigle*

## Signal processing and analysis

Auditorium 3

**Session chairs** Yang-Hann Kim

Diamantino Freitas

- |       |        |  |         |
|-------|--------|--|---------|
| 09:00 | id 65  | Time-domain transfer path analysis of multiple moving noise sources<br><i>Sifa Zheng, Hao Peng, Xiaomin Lian, Keqiang Li</i>   | invited |
| 09:20 | id 121 | Wave-superposition method for moving sound source location<br><i>Diane Yang, Bing Li, Sifa Zheng, Xiaomin Lian</i>   | invited |
| 09:40 | id 179 | Receiving sound through ultrasound – ways to a new kind of microphones<br><i>Tobias Merkel</i>   |         |
| 10:00 | id 216 | Single-channel speech enhancement based on modulation spectrum<br><i>Kazufumi Nakamura, Katunobu Itou</i>  |         |
| 10:20 | id 282 | Multiresolution analysis and time-frequency transform in mode identification of circumferential waves<br><i>M. Laaboubi, El. Aassif, R. Latif, G. Maze, A. Moudden</i>                 |         |
| 10:40 | id 307 | Assessment of the impact of an interfering signal on the results of partial discharge measurements obtained using acoustic emission method<br><i>D. Zmarzly, T. Boczar, S. Borucki</i> |         |
| 11:00 | id 481 | Detecting multiple simultaneous vehicles pass-by by sound source separation techniques<br><i>Fernando J. Mato-Méndez, Manuel A. Sobreira Seoane</i>                                    |         |
| 11:20 | id 526 | A method to detect strange noise during speaker test in an LCD TV: higher harmonics of rattling noise<br><i>Jong-Oh Sun, Kwang-joon Kim</i>  |         |

## Outdoor sound propagation in living environment

Auditorium 4

**Session chairs** Hiroyuki Imaizumi

Michel Berengier

- |       |        |   |         |
|-------|--------|---|---------|
| 09:00 | id 487 | Review of ground impedance models for propagation modeling<br><i>Attenborough, K., Bashir, I., Taherzadeh, S.</i>   | invited |
| 09:20 | id 762 | Numerical study on long-range outdoor sound propagation over hard ground with surface roughness<br><i>T. Yokota, K. Makino, K. Yamamoto</i>   | invited |
| 09:40 | id 103 | Long-term average evaluation of heavy weapon noise with considering occurrence probability of meteorological conditions<br><i>M. Morinaga, I. Yamamoto, H. Tsukioka, K. Makino, T. Yokota, K. Yamamoto, M. Yasuoka, S. Kuwano, A. Tamura, I. Yamada, K. Yoshihisa, T. Hinai</i> | invited |
| 10:00 | id 345 | Heavy weapon noise prediction model with considering terrain and meteorological effects<br><i>I. Yamamoto, M. Morinaga, H. Tsukioka, T. Yokota, K. Makino, K. Yamamoto, M. Yasuoka, S. Kuwano, A. Tamura, I. Yamada, K. Yoshihisa, T. Hinai</i>                                 | invited |
| 10:20 | id 778 | A stochastic model for sound propagation over irregular surfaces<br><i>Thomas Leissing, Christian Soize, Philippe Jean, Jérôme Defrance</i>   |         |
| 10:40 | id 600 | Measured sound propagation influenced by meteorology<br><i>Dieter Hohenwarter</i>   |         |
| 11:00 | id 344 | Noise mitigation through forest areas around shooting ranges<br><i>Karl-Wilhelm Hirsch</i>  |         |

- 11:20** id 798 A coupled modal-FE method for the sound propagation modeling in urban canyons  
*Miguel Molerón, Simon Félix, Adrien Pelat, Vincent Pagneux, Judicaël Picaut, Olivier Richoux* invited
- 11:40** id 1137 Numerical study to the influence of façade openings on noise levels in urban courtyards  
*Maarten Hornikx, Jens Forssén* invited

**Numerical techniques (FEM, BEM, IFEM, SEA) (cont.)****3 A****Session chairs** Julieta António

Der Liang Young

- 09:00** id 336 Modeling ground vibration response functions for rail transit with finite element analysis  
*Gary M. Glickman, James T. Nelson, Richard A. Carman*
- 09:20** id 904 Analysis of waveguide eigenfrequencies by the method of fundamental solutions with external sources  
*D. L. Young, C. M. Fan, C. L. Chiu* invited
- 09:40** id 912 Error estimation in vibroacoustic problems solved by means of finite elements  
*Poblet-Puig, J., Rodríguez-Ferran, A.*
- 10:00** id 1006 Simulation of the acoustic performance of elastic membranes using an MFS approach  
*Julieta António, António Tadeu, Paulo Amado Mendes*
- 10:20** id 1089 On a numerical characterization of the vibrations and acoustic radiation from viscoelastically supported plates subjected to a turbulent flow  
*Renato Nunes, Filipe H. Mendonça, Fernando Lau, Miguel M. Neves* invited
- 10:40** id 1097 A comparison of models for visco-thermal acoustic problems  
*Júlio A. Cordioli, Gustavo C. Martins, Paulo H. Mareze, Roberto Jordan*

**Soundscape-metrics****Session chairs** Giovanni Brambilla

Itziar Aspuru

- 11:00** id 74 A policy for urban quiet areas  
*G. P. van den Berg* invited
- 11:20** id 478 Environmental noise metrics from a soundscape perspective  
*Andre Fiebig, Klaus Genuit* invited
- 11:40** id 343 Measuring procedures for soundscapes in residential areas  
*Ö. Axelsson, B. Berglund, M. E. Nilsson* invited

**Measurements in room and building acoustics****3 B****Session chairs** Jean-Baptiste Chene

Maria Machimbarrena

- 09:00** id 1015 Coordination between in situ measures, acoustic simulation and virtual environments, key for improvement proposals in audience halls  
*Radu Lacatis, Radha Montell, Alicia Giménez, Arturo Barba, Rosa Cibrián, Salvador Cerdá Jordá, Jaume Segura, José Romero*
- 09:20** id 1027 Experimental sound insulation predictions – a methodology to make comparison in environments of uncertain modeling  
*Rui Calejo Rodrigues, Eduarda Pereira da Silva*
- 09:40** id 1127 The acoustic rehabilitation of the Renaissance church of La Anunciación in Seville  
*Rico, B., León, A. L., Zamarreño, T., Sendra, J. J., Alario, R., Navarro, J., y Díaz, C.*

## Acoustical metrology (instruments, measurements, standards, uncertainty)

Session chairs	Salvador Barrera-Figueroa	Finn Jacobsen
<b>10:00</b>	id 38 Calibration of infrasonic measurement devices <i>Michael Mende, Hans-Günter Uszakiewicz, Petko Bakardijev</i>	
<b>10:20</b>	id 39 The influence of vibration transducer mounting on the practical measurement of railway vibration <i>J. D'Avillez, M. Frost, S. Cawser, A. El Hamalawi, P. Fleming, P. Shields, C. Skinner</i>	
<b>10:40</b>	id 189 Use of swept sine in calibration services of the acoustical metrology area <i>Soares, Zemar</i>	invited
<b>11:00</b>	id 277 Time selective response measurements – good practices and uncertainty <i>Erling Sandermann Olsen, Rémi Guastavino</i>	invited
<b>11:20</b>	id 556 Experience regarding Directive 2000/14/EC related to the future introduction of noise limits for combustion engine chain saws <i>Carletti, E.</i>	
<b>11:40</b>	id 561 Swept-sine method for directional response measurements of an outdoor microphone <i>Ole-Herman Bjørn</i>	

## Noise problems and solutions in developing and in transition countries

**3 C**

Session chairs	Ulf Sandberg	Salvador Santiago
<b>09:00</b>	id 781 Soundscape management urgently needed in developing countries <i>Ö. Axelsson, B. Berglund, M. Molero Suarez</i>	invited
<b>09:20</b>	id 144 Acoustic characteristics of open-plan offices in developing China <i>Fenglei Jiao, Jian Kang, Mei Zhang, Zhengjie Dong, Xiaojuan Xing</i>	invited
<b>09:40</b>	id 1043 Sound environment in a historical area of Harbin, China <i>Hong Jin, Zhiyu Zhou, Jian Kang</i>	invited
<b>10:00</b>	id 376 The investigation and analysis on traffic noise in Beijing <i>Zhiyong Wei, Bin Zhang, Min Xu</i>	
<b>10:20</b>	id 910 Annoyance of low frequency noise from novel transportation systems in China <i>Dongxing Mao, Bijun Yang, Yude Zhou</i>	invited
<b>10:40</b>	id 1032 The noise emission of the tricycles in the Philippines <i>Aileen U. Mappala, Sheila Flor D. Javier</i>	
<b>11:00</b>	id 621 Noise issues and legislation in India <i>M. L. Munjal</i>	invited
<b>11:20</b>	id 1083 Traffic noise impact assessment of metropolitan transportation infrastructure development <i>S. S. Jain, M. Parida, R. Randhawa</i>	invited
<b>11:40</b>	id 1077 EIA based noise impact analysis for MRTS corridor <i>Rajeev Kumar Mishra, Arun Sharma, Manoranjan Parida, Santosh Rangnekar</i>	invited

**Tire/road noise****5 A****Session chairs****Paul Donavan****Wim van Keulen**

- 09:00** id 151 Indoor pass-by noise testing of hybrid electrical vehicles on an acoustic roller test bench  
*A. Albers, G. Robens, A. Schwarz, M. Fritz, J. Schmitz*
- 09:20** id 1001 Some observations in the “removed-tyre” certification test of a two-wheeler CPX vehicle in Hong Kong  
*Wing-tat Hung, Chung-fai Ng, Randolph Leung, Ka-yeo Ho, Yat-ken Lam, Emily Fung*
- 09:40** id 117 Experience with new reference tyre for CPX measurement in pavement noise classification  
*J. Kragh, B. Andersen, J. Oddershede* invited
- 10:00** id 869 An experimental study on the influence of tire noise on the sound quality of car interior noise  
*Wei Peng, Chang Jin, Hong Zhou*
- 10:20** id 691 In situ assessment of the normal incidence sound absorption coefficient of asphalt mixtures with a new impedance tube  
*Freitas, E., Raimundo, I., Inácio, O., Pereira, P.* invited
- 10:40** id 153 Study of the acoustic quality of exposed aggregate cement concrete roads  
*A. Bergiers, L. Goubert*
- 11:00** id 935 Implementation of non-linear contact stiffness and adhesion in a numerical model for tyre/road contact  
*Julia Winroth, Patrik B. U. Andersson* invited
- 11:20** id 1128 Tire/road noise, the tire vibration as the main noise source from road texture  
*D. Rochoux, F. Biesse*
- 11:40** id 475 The effectiveness of low noise pavements in cities  
*Wim van Keulen, Ron Westerveld*

**Lightweight partitions and systems****5 B****Session chairs****Thomas Scelo****Jean-Luc Kouyoumji**

- 09:00** id 33 Experimental investigation of sound transmission on coconut fiber impregnated cavity ferro cement panel with ties using statistical energy analysis  
*Senthilkumar, P., Kandaswamy, S.*
- 09:20** id 34 A study on performance of transmission of sound through lightweight fiber impregnated hollow block with and without plastering  
*Senthilkumar, P., Kandaswamy, S.*
- 09:40** id 157 Experimental study on the sound insulation of composite panels intended for use in a building  
*J. Nurzynski*
- 10:00** id 259 FE modeling of wooden building assemblies  
*Bolmsvik Å., Ekevid T.*
- 10:20** id 293 Vibration properties of a timber floor assessed in laboratory and during building construction  
*Järnerö K., Brandt A., Olsson A.*
- 10:40** id 417 Comparison of measured and predicted sound insulation in wood frame lightweight buildings  
*C. Guigou-Carter, M. Villot, R. Wetta* invited
- 11:00** id 451 Airborne sound insulation of drywall partition deflection heads  
*C. Demanet, C. Blanc*

- 11:20** id 535 Field measurements of the mobility and vibrations induced by human walking on a wooden floor  
*D. Bard, K. Jarnerö* invited
- 11:40** id 552 Causes of variation in field measurement of airborne sound insulation  
*Whitfield W. A., Gibbs B. M.*

## Community noise maps and action plans

**5 C**

### Session chairs

**Gaetano Licitra**

**J. L. Bento Coelho**

- 09:00** id 12 Automated workflows in linux high performance GRID computing or standard windows applications  
*Hardy Stapefeldt, Dietmar Siepmann, Tino Fleuren* invited
- 09:20** id 177 Comparative analysis of methods to evaluate urban noise exposure  
*G. Licitra, E. Ascari, G. Brambilla* invited
- 09:40** id 363 Deployment of the binary traffic in the city of Maringá, PR, Brazil: assessment of the acoustic scenary by noise mapping  
*Aline Lisot, Stelamaris Rolla Bertoli, Paulo Fernando Soares*
- 10:00** id 587 From EU noise maps to action plans – an innovative solution not only for municipalities  
*Michael Gille* invited
- 10:20** id 614 Practical aspects of QA in noise mapping  
*Karl Busch, Klaus-Georg Krapf* invited
- 10:40** id 677 Accuracy and precision in traffic noise prediction  
*Wolfgang Probst* invited
- 11:00** id 681 Comparison of different evaluation procedures for the optimization of noise protection walls  
*Jochen Schaal, Gert Braunstein*
- 11:20** id 708 A comparison of noise simulation models  
*S. Curcuruto, F. Berlier, M. Cerchiai, T. Fabozzi, J. Fogola, G. Licitra, P. Maggi, G. Marsico, M. Mussin, A. Poggi, F. Sacchetti, M. Schirone, R. Silvaggio, L. Vaccaro* invited
- 11:40** id 743 Noise maps and action plans in portuguese motorways  
*Margarida Braga, Jorge R. Preto, Christine A. Matias, Luís Conde Santos*

## Noise barriers

**1.06**

### Session chairs

**Jean Pierre Clairbois**

**Kristian Jambrosic**

- 09:00** id 147 Noise reduction of large-capacity cooling towers  
*Kristian Jambrosic, Hrvoje Domitrovic, Marko Horvat*
- 09:20** id 156 Application of a hollow screen top to increase insertion loss  
*Marinus M. Boone* invited
- 09:40** id 257 Noise barrier with acoustically soft surface composed of wells of different heights  
*Masaki Hasebe* invited
- 10:00** id 281 BEM simulations of noise barriers  
*S. Gasparoni, M. Haider, M. Conter, R. Wehr, S. Breuss* invited
- 10:20** id 374 Noise barrier insertion loss in portuguese highways  
*S. Xavier, A. Samagao*
- 10:40** id 442 QUIESST: toward a better knowledge and understanding of how efficient noise barriers could actually be  
*J-P. Clairbois, F. de Roo, M. Garai, M. Conter, J. Defrance, C. Oltean-Dumbrava, I. Fusco* invited

- 11:00** id 519 Reflections in tilted noise barriers  
*M. H. J. Bakermans, D. Jansen, Hans J. A. van Leeuwen*
- 11:20** id 793 Effect of slit-shaped leaks on airborne sound insulation of noise barriers  
*Massimo Garai, Paolo Guidorzi* invited
- 11:40** id 891 Comparison of in situ measuring methods for absorption and surface impedances  
*Marc Aretz, Pascal Dietrich, Gottfried Behler* invited

**Transportation noise (air, road, rail, marine vehicles)****1.07****Session chairs****Josef Novak****Rajendra Singh**

- 09:00** id 777 Noise source detection system based on two independent microphone arrays  
*Peral Orts, R., Velasco Sánchez, E., Campillo Davo, N., Campello Vicente, H.* invited
- 09:20** id 787 The measurement studies on the noise emitting from Beijing-Tanjin 350km/h high speed train  
*Xiangdong Zhu, Xiang Yan, Jianghua Wang*
- 09:40** id 830 Survey study on the influence of vehicle weight on road traffic noise  
*Tomotaka Ueta, Kenichi Ishikawa, Akihiro Furuta, Teruo Iwase*
- 10:00** id 840 The analysis and measurements of noise emission levels of vehicles in China  
*Wencheng Hu, Xiaokuan Li, Bin Zhang, Shiqiang Wang, Weijian Lu, Lei Liu*
- 10:20** id 845 Noise reduction effect of drainage asphalt pavements in rainy weather  
*Akihiro Furuta, Kenichi Ishikawa, Tomotaka Ueta, Hironori Nagao, Raiji Fukui, Eiji Noguchi, Hiroshi Miyazaki, Teruo Iwase*
- 10:40** id 962 Fast prediction of noise level and air flow in rail vehicle HVAC ducts using a Modelica framework  
*Helmut Kuehnelt, Thomas Baeuml, Anton Haumer, Gerhard Karlowatz*
- 11:00** id 1110 Semantic differential study of road traffic noise  
*Sónia Monteiro Antunes, Margarida Rebelo, Jorge Viçoso Patrício, António José Samagaio*
- 11:20** id 1122 An experimental assessment on the performance of fixed rail lubricators for curve squealing noise mitigation  
*D. Alarcão, J. L. Bento Coelho*
- 11:40** id 1136 Analysis of noise produced by water pumps for internal combustion engines  
*Jorge A. Perez Villalobo, Oscar A. Ramos* invited

**Characterization of structure-borne sound sources****1.08****Session chairs****Werner Scholl****Volker Wittstock**

- 09:00** id 62 Reception plate measurement of blocked forces at machine contacts  
*B. M. Gibbs, P. Tarizzo, E. Taskan*
- 09:20** id 68 Noise and vibration analysis of elevator traction machine  
*Ryo Kawasaki, Yasuo Hironaka, Masaharu Nishimura*
- 09:40** id 104 Structure-born sound – in situ characterization of propagation via  
*P. Martins da Silva*
- 10:00** id 190 Prediction of the sound transmission of heating devices in buildings according EN 12354-5  
*Andreas Ruff, Andreas R. May, Heinz-Martin Fischer* invited
- 10:20** id 250 Structural optimization of engine for noise reduction  
*Ramkumar R., Mahesh Patwardhan, Saravana Kumar V., A. A. Gaikwad, N. V. Karanth*
- 10:40** id 256 Performance evaluation of floating floors using the reception plate method: initial investigations  
*P. Tarizzo, A. Schiavi, B. M. Gibbs*

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|--------------|--|---------|
| <b>11:00</b> | id 405 Characterisation of structure-borne sound sources in buildings by the two-stage reception plate method<br><i>Volker Wittstock</i>   | invited |
| <b>11:20</b> | id 406 Description of structure borne sources by measurements of structure borne intensity<br><i>Gerhard Hübner</i>  | invited |
| <b>11:40</b> | id 428 Application of an in situ measurement method for characterisation of structure-borne sound generated by building-mounted wind turbines<br><i>Andy Moorhouse, Andy Elliott</i> | invited |

## Noise control engineering education

**1.10**
**Session chairs**

Dave Holger

Courtney Burroughs

- 09:00** id 467 Publication of your paper on noise

*Keith Attenborough, J. Stuart Bolton, Patricia Davies, Courtney B. Burroughs, Stephen A. Hambric, George Maling, Ralph Muehleisen*

## Speech communication in road vehicles + Speech privacy

**Session chairs**

Christian Simmons

Valtteri Hongisto

- 11:00** id 255 On the acoustical quality of conversational speech inside Vehicles

*Oliver Jung*

- 11:20** id 441 Open-plan offices in japan: a case study on its acoustic performance descriptors

*Takashi Koga, Motoki Yairi, Kenichi Takebayashi Atsuo Minemura*

- 11:40** id 609 Measures for assessing speech privacy of open-plan offices

*Joo Young Hong, Pyoung Jik Lee, Jin Yong Jeon*

## Non linear dynamics of acoustic resonators

**1.13**
**Session chairs**

Andrea Cardoni

Robert Bernhard

- 09:00** id 126 Self-organization in acoustic resonators containing viscous fluids

*V. J. Sánchez Morcillo, J. Martínez Mora, I. Pérez Arjona, P. Alonso, V. Espinosa*

invited

- 09:20** id 202 Nonlinear iterative model for langevin ultrasonic transducers

*Nicolás Pérez Alvarez, Marco Aurélio B. Andrade, Flávio Buiochi, Julio Cesar Adamowski*

- 09:40** id 544 High-amplitude standing waves between collateral disc

*M. Cervenka, M Bednarik, R. Balek, P. Konicek*

invited

- 10:00** id 626 Characterising the nonlinear dynamics of power ultrasonic systems

*Enrique Riera, Andrea Cardoni, Alfonso Blanco, Victor Acosta, Juan Gallego-Juárez*

invited

- 10:20** id 649 Control of nonlinear standing waves in acoustic resonators

*Michal Bednarik, Milan Cervenka, Petr Konicek*

invited

- 10:40** id 786 Non-linear dynamics to improve the mechanical to electrical energy conversion in piezoelectric materials: application to vibration control and energy harvesting

*Daniel Guyomar, Mickaël Lallart*

invited

- 11:00** id 851 Approximate description of finite-amplitude acoustical waves in the air-filled resonator

*Petr Konicek, Michal Bednarik, Milan Cervenka*

invited

- 11:20** id 862 Reducing the nonlinear vibration behaviour of power ultrasonic transducers for bone surgery  
*Andrea Cardoni, Andrew Mathieson, Niccolo' Cerisola* invited
- 11:40** id 1007 Nonlinear oscillating phenomena in finite piezoelectric structures  
*Andrea Bettucci, Massimo Germano, Daniele Passeri* invited

## Wednesday, 16 June

14:00										
14:20										
14:40										
15:00										
15:20										
15:40										
16:00										
16:20										
16:40										
17:00										
	Distinguished lecture - Hearing protectors: noise attenuation and comfort									
18:00										
	Closing Session									
18:30										
	Reception									
	Coffee break 15:30 to 16:30									

(1) Noise barriers

(2) Non linear dynamics of acoustic resonators

**Assessment and strategies for managing noise (cont.)  
+ Underground noise control****Auditorium 1****Session chairs** Douglas Manvell

George Maling

- 14:00** id 408 Limit values for military shooting noise  
*H. Boegli, M. Brink, J. M. Wunderli, G. Tinguey*
- 14:20** id 186 Rising to the challenges of noise monitoring with service provision  
*D. Manvell, P. Stollery* invited
- 14:40** id 298 New GIS software for predicting and evaluating road traffic noise based on ASJ RTN-model 2008  
*Kazutoshi Fujimoto, Hiroyuki Imaizumi, Ken Anai, Yasuhiro Hiraguri, Masanobu Hamatani, Yuko Oshima* invited
- 15:00** id 1115 A practical web-based approach to meeting EU noise mapping requirements for 2012  
*Christopher Hoar, Hartmut Stapelefeldt, Wing Ho Cheung*
- 15:20** id 265 Noise monitoring in urban action plans  
*Markus Petz, Christian Freneat, Daniel Vaucher de la Croix, Christine Aujard*
- 15:40** id 619 A new and easy method for cost-benefit analysis of noise measures along highways and railways  
*D. de Gruijter, E. Hageman*
- 16:00** id 628 Urban environmental noise management: a proposed solution  
*Alfredo García Cornejo, Jose Elías Arias Puga, Dolores García Escribano*
- 16:20** id 730 Tools for developing action plans for railways. A new methodological approach and its possibilities  
*González García, Miguel Ángel*
- 16:40** id 825 The study of noise variability in underground coal mine  
*Marek L. Szary, Paul Y. Chugh, Joseph C. Hirschi*

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**Plenary distinguished lecture****Session chair** Rajendra Singh

- 17:00** id 603 **Hearing protectors: noise attenuation and comfort**  
*Samir Gerges*

## Signal processing and analysis (cont.) + Bioacoustics

**Auditorium 3**

### Session chairs

Yang-Hann Kim

Diamantino Freitas

- |   |         |
|---|---------|
| <b>14:00</b> id 560 Characterization of vibration transmission paths for gearbox condition monitoring<br><i>S. Al-Arbi, C. Talbot, T. Wang, F. Gu, A. Ball</i>              |         |
| <b>14:20</b> id 630 Self-organized approach to noise reduction based on acoustic and spatial features<br><i>Mitsunori Mizumachi</i>   |         |
| <b>14:40</b> id 670 A comparison of condition monitoring techniques applied to roller bearings<br><i>Chris Talbot, Fengshou Gu, Abdullah Alshamari</i>                      |         |
| <b>15:00</b> id 733 Optimal signal selection for a highly segmented detector<br><i>Bernardo S.-M. Peralva, Augusto S. Cerqueira, Luciano M. A. Filho, José M. de Seixas</i> |         |
| <b>15:20</b> id 737 A receiver system for detecting calorimeter signals under low signal-to-noise ratio conditions<br><i>José M. de Seixas</i>                              |         |
| <b>15:40</b> id 747 Sound cue selection methods for source localization in noisy environments<br><i>João Moutinho, Diamantino Freitas</i>                                   | invited |
| <b>16:00</b> id 796 Automatic clustering of components for single channel ICA-based signal demixing<br><i>Dariusz Mika, Piotr Kleczkowski</i>                               |         |
| <b>16:20</b> id 1034 Noise control of zones: its theory and applications<br><i>Jin-Young Park, Min-Ho Song, Jung-Min Lee, Tae-Woong Lee, Ji-Ho Chang, Yang-Hann Kim</i>     | invited |
| <b>16:40</b> id 96 Tasting timbers: termites use vibrations to make foraging decisions<br><i>Joseph C. S. Lai, Theodore A. Evans</i>  |         |

## Outdoor sound propagation in living environment (cont.)

**Auditorium 4**

### Session chairs

Hiroyuki Imaizumi

Michel Berengier

- |   |         |
|---|---------|
| <b>14:00</b> id 92 An experimental study of the use of acoustic diffusers to reduce noise in urban areas<br><i>J. Picaut, H. Hossam Eldien, A. Billon</i> | invited |
| <b>14:20</b> id 562 Sound propagation in a park over the year<br><i>T. Van Renterghem, D. Oldoni, D. Botteldooren</i>                                     | invited |
| <b>14:40</b> id 571 Acoustic environmental impact of stadiums<br><i>C. Rougier, J. Defrance, N. Noé, J. Maillard, M. Baulac</i>                           |         |

## Hearing protectors

### Session chairs

Samir Gerges

Jorge Fradique

- |   |         |
|---|---------|
| <b>15:00</b> id 25 Audiometer with free software in a web environment<br><i>Diego Murillo, Ever Velásquez, Carlos Castro, Andrés Cárdenas</i>                                     |         |
| <b>15:20</b> id 105 Automated testing of hearing protectors in the NASA auditory demonstration laboratory<br><i>Mike Denton, Jeff Schmitt, Kurt Veggeberg</i>                     |         |
| <b>15:40</b> id 426 Simple and stable howling canceller for binaural hearing assistant system based on inter-aural level difference<br><i>Tsuyoshi Usagawa, Yoshifumi Chisaki</i> | invited |
| <b>16:00</b> id 551 In-the-ear noise exposure measurements: a significant step towards full control with noise exposure in work situations<br><i>Olav Kvaløy, Asle Melvær</i>     | invited |
| <b>16:20</b> id 978 Investigation of symphony orchestra musicians' use of hearing protectors<br><i>Poulsen, T., Koskinen, H.</i>  |         |

- 16:40** id 1147 How to estimate A-weighted equivalent sound pressure level effective to the ear from earmuffs equipped with advanced entertainment audio functions  
*Magnus Johansson*

invited

**Soundscape-metrics (cont.)****3 A**

Session chairs	Giovanni Brambilla	Salvador Santiago	
<b>14:00</b>	id 381 Subjective assessment of the noisy urban areas <i>Asli Ozcevik, Zerhan Yuksel Can</i>		invited
<b>14:20</b>	id 445 Proposed conceptual model of environmental experience as framework to study the soundscape <i>Karmele Herranz-Pascual, Itziar Aspuru, Igone Garcia</i>		
<b>14:40</b>	id 94 Relationship between objective and subjective indicators in urban soundscape analysis. The case of Córdoba – Argentina <i>Arturo Maristany, Manuel Recuero López</i>		
<b>15:00</b>	id 488 Optimization of the acoustic measurement duration in urban environment through Kohonen self-organizing map <i>Laurent Brocolini, Catherine Lavandier, Mathias Quoy, Carlos Ribeiro</i>		invited
<b>15:20</b>	id 662 Setting targets for soundscape design: The practical use of a 2-Dimensional perceptual space <i>Rebecca Cain, Paul Jennings, John Poxon</i>		invited
<b>15:40</b>	id 874 Categories for soundscape: toward a hybrid classification <i>Maria Niessen, Caroline Cance, Danièle Dubois</i>		invited
<b>16:00</b>	id 932 Tranquillity survey in city parks <i>G. Watts, R. Pheasant, K. Horoshenkov</i>		
<b>16:20</b>	id 933 Differences between annotating a soundscape live and annotating behind a screen <i>Johannes D. Krijnders, Tjeerd C. Andringa</i>		
<b>16:40</b>	id 1025 Percentile distribution analysis applied to soundscape design <i>Luca Alfinito, Sara Recenti</i>		

**Acoustical metrology (instruments, measurements, standards, uncertainty) (cont.) + Instrumentation and standards****3 B**

Session chairs	Salvador Barrera-Figueroa	Finn Jacobsen	
<b>14:00</b>	id 582 Development of a practical wind noise generator for testing windshield effectiveness <i>Daniel Simmons, Mark Jiggins, Andrew Bullmore, Matthew Cand</i>		
<b>14:20</b>	id 594 Proposed "Ai"-Weighting; a weighting to remove insect noise from A-weighted field measurements <i>Paul D. Schomer, Ian M. Slauch, George F. Hessler</i>		
<b>14:40</b>	id 647 The finite elements modeling of the acoustics in thermo-viscous fluid: application on the axisymmetrical study of the ear simulator (IEC 60318-1) <i>Dominique Rodrigues, Petr Honzik, Nicolas Joly, Stéphane Durand, Jean-Noël Durocher, Michel Bruneau</i>		
<b>15:00</b>	id 694 Phase calibration of measurement microphones <i>Richard Barham, Dan Simmons, Richard Jackett</i>		invited
<b>15:20</b>	id 711 Uncertainty analysis for corona audible noise long-term rate level estimation in continuous monitoring systems in vicinity of overhead ac power lines <i>Tadeusz Wszolek</i>		
<b>15:40</b>	id 893 Study of an octahedral antenna for both sound pressure level estimation and 3D localization of multiple sources <i>Patrick Marmaroli, Xavier Falourd, Hervé Lissek</i>		

- 16:00** id 896 An investigation on methods for free-field comparison calibration of measurement microphones  
*Salvador Barrera-Figueroa, Guillermo Moreno Pescador, Finn Jacobsen, Knud Rasmussen, Vicente Cutanda-Henriquez, Peter Møller Juhl*
- 16:20** id 884 Measurement of impulsive noise  
*Per Rasmussen, Thomas Søndergaard*

## Noise problems and solutions in developing and in transition countries (cont.)

**3 C**
**Session chairs** **Ulf Sandberg**
**António Calvo-Manzano**

- 14:00** id 1096 Noise exposure and nuisance in Iran and its abatement in the past, present and future  
*Mahmood Habibnia*
- 14:20** id 877 Noise exposure and nuisance in turkey and its abatement in the past, present and future  
*Aybike Ongel*
- 14:40** id 327 Vehicle traffic and urban noise in Itajuba, Brazil: annoyance evaluation  
*Silva, L. F., Maciel, J. F.*
- 15:00** id 724 Environmental noise management in the city of São Paulo, Brazil  
*Ikeda, C. Y. K., Aquilino, M. M., Barry, Peter J.*
- 15:20** id 783 Mitigation of the impact of noise of the São Paulo ring road  
*Peter J. Barry, Fulvio Vittorino, Maria de Fátima F. Neto*
- 15:40** id 276 Traffic noise reduction using porous asphalt course as an overlay of a portland cement concrete pavement in São Paulo, Brazil  
*Eleni G. B. Strufaldi, Liedi L. B. Bernucci, Marcia Aps, Fulvio Vittorino, Décio de R. Souza*
- 16:00** id 1023 Current handling of highway noise in Chile  
*Erwin Kohler, Carlos Reyes*
- 16:20** id 372 Advances in environmental noise control management in Chile  
*Enrique Suárez, Igor Valdebenito, Jorge P. Arenas*
- 16:40** id 1119 Fifteen years of noise regulations in Egypt  
*Tamer M. Elnady*

## Tire/road noise (cont.)

**5 A**
**Session chairs** **Paul Donavan**
**Wim van Keulen**

- 14:00** id 132 Reduction of the horn effect for car and truck tyres by sound absorbing road surfaces  
*Bert Peeters, Inez Ammerlaan, Ard Kuijpers, Gijsjan van Blokland*
- 14:20** id 1013 Measurement and analysis of steady state tyre noise and identification of factors affecting tyre noise  
*Ravindu Mane, M. K. Jain*
- 14:40** id 368 Sound absorption coefficient of wet gap graded asphalt mixtures  
*Raimundo, I., Freitas, E., Inácio, O., Pereira, P.*
- 15:00** id 1069 Texture and noise features for road pavement identification and classification  
*Joel Preto Paulo, Elisabete Freitas, J. L. Bento Coelho*
- 15:20** id 638 Application of road-profile enveloping procedure to height-unevenness method for predicting tire/road noise  
*Tatsuo Fujikawa, Yasuo Oshino, Hideki Tachibana*
- 15:40** id 669 Evaluation of the sound power level from rolling tyres  
*Nuria Campillo Davo, Ramon Peral Orts, Emilio Velasco Sanchez*
- 16:00** id 1056 Low noise road surfaces and the efficiency on tyre noise regulations  
*Truls Berge, Frode Haukland*
- 16:20** id 389 Efficiency of the combined application of silent tyres and silent road surfaces  
*Gijsjan van Blokland, Michiel van Leeuwen*

**Lightweight partitions and systems (cont.)****5 B****Session chairs** Thomas Scelo**José Furtado Gomes**

- 14:00** id 590 Experimental study on the effect of specimen size on sound insulation of precast panels  
*Hongseok Yang, Myung-Jun Kim*
- 14:20** id 805 Approaches for estimating flanking transmission for heavy impact sources  
*Stefan Schoenwald, Trevor Nightingale, Berndt Zeitler, Frances King* invited
- 14:40** id 920 AkuLite – a research project to strengthen light weight structures  
*Klas Hagberg, Krister Larsson, Delphine Bard* invited
- 15:00** id 949 Sound transmission through concrete floors and suspended ceiling systems – a practical simplification  
*Thomas Scelo* invited
- 15:20** id 952 Experimental approach on sound transmission loss of cross laminated timber floors for building  
*Jean-Luc Kouyoumjian, Sylvain Gagnon*
- 15:40** id 970 Evaluation of the EN12354 method through field testing using sound intensity  
*Jeffrey Mahn, John Pearse* invited

**Diffraction reducing devices on noise barrier top****Session chairs** Andreia Pereira**Tomonao Okubo**

- 16:00** id 252 Numerical design and experimental investigation of noise barriers with resonators  
*M. Auerbach, A. Bockstedte, O. von Estorff, O. Zaleski* invited
- 16:20** id 547 Effective size of absorbing surface around the top edge of noise barrier  
*Tomonao Okubo, Kohei Yamamoto* invited
- 16:40** id 629 MAITE II: 3D numerical simulation for sound diffraction of added device  
*Diez Gaspón Itxasne, Galván José Antonio, Vazquez Manuel, Fernández Pilar*

**Community noise maps and action plans (cont.)****5 C****Session chairs** Cristoph Lechner**Octávio Inácio**

- 14:00** id 801 Action plan against motor bike noise – an Alpine case study  
*Christoph Lechner, Peter Lercher* invited
- 14:20** id 807 Study of the noise associated with night leisure activities in the Cáceres city  
*J. M. Barrigón Morillas, V. Gómez Escobar, G. Rey Gozalo, F. J. Carmona del Río, R. Vilchez Gómez, J. A. Méndez Sierra, M. Mellado Narciso*
- 14:40** id 1024 Decision-making tools for action plans based on GIS: a case study of a spanish agglomeration  
*Jose Luis Cueto, Fernando Lopez, Acaymo Perez, David Suarez, Ricardo Hernandez* invited
- 15:00** id 1041 Procedure to perform noise annoyance psychosocial studies  
*Mª Ángeles Martín, Ana I. Tarrero, María Machimbarrena, Julio González, Valentín González de Garibay*
- 15:20** id 1112 Noise from landing aircrafts in a quiet area  
*D. Kühner, P. Lercher* invited

**Musical acoustics****Session chairs** Octávio Inácio**Cristoph Lechner**

- 15:40** id 122 Local consonance for pi-pa, based on the chinese traditional musical scale  
*Zhiyong Deng, Jian Zhang*

- 16:00** id 218 A study on the loudness balance of plucking instrument ensemble  
*Xin Wang*
- 16:20** id 769 Measurement of sound exposure on orchestral musicians in Denmark  
*Per M. Nielsen, Anders C. Gade, Søren P. Lund*

## Noise barriers (cont.)

**1.06**

Session chairs	Jean-Luc Kouyoumji	Catherine Guigou-Carter
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- 14:00** id 967 Performing railway traffic vibration forecast using in situ vibration measurements  
*Vitor Rosão, C. César Rodrigues, Eusébio Conceição*

## Acoustic and thermal interactions for energy efficient buildings

Session chairs	Jean-Luc Kouyoumji	Catherine Guigou-Carter
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- 14:20** id 203 Office buildings and natural cooling: room acoustic demands and influence of acoustic treatment on thermal performance  
*Pierre Chigot*
- 14:40** id 308 Field-testing sound insulation results and thermographic analysis of dual purpose party wall cavity seal and flanking transmission isolator  
*Roderick K. T. Mackenzie, Lee Nichols, R. Sean Smith, Elena Prokofieva*
- 15:00** id 364 Thermal and acoustic comfort in buildings  
*S. Monteiro da Silva, M. Guedes de Almeida*
- 15:20** id 416 Comparison of measured and predicted sound insulation for a thermal retrofitted building  
*C. Guigou-Carter, R. Foret, R. Wetta, P. Ducruet, M. Villot* invited
- 15:40** id 546 Effect of thermal insulation systems on acoustic performances of ancient building construction elements  
*R. Foret, C. Guigou-Carter, M. Villot*
- 16:00** id 791 Renovation of historic building for music rooms and recording studio: high acoustic and energetic performances  
*M. Caniato, F. Bettarello, S. Longhi, O. Sbaizerio*
- 16:20** id 815 The acoustic attenuation of ventilated sill in hot humid climate openings  
*Oiticica, Maria Lúcia G. R., Bertolli, Stelamaris R.*
- 16:40** id 885 Acoustic and thermal properties of italian masonry walls  
*Giovanni Semprini, Luca Barbaresi, Cosimo Marinosci* invited

## Public space acoustics for safety + Sustainable quiet buildings

**1.07**

Session chairs	Hideki Tachibana	Carlos Fafaiol
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- 14:00** id 850 Safety in urban areas – a concept for the exploration of public spaces  
*Brigitte Schulte-Fortkamp* invited
- 14:20** id 1139 The application of scaled models and other modeling techniques to predict the acoustic performance of screens attached directly to vented facades, such to reduce environmental noise break in to naturally ventilated buildings  
*Ze Nunes, Alex Daymond-King, Jeremie Dufaud*
- 14:40** id 749 The long rooms acoustics assessment for emergency sound system purposes  
*Elzbieta Nowicka* invited

- 15:00** id 633 Reviews on countermeasure to safety risk associated with quietness of hybrid or electric vehicles in Japan  
*Ichiro Sakamoto, Takeharu Tanaka, Michiaki Sekine, Kazumoto Morita, Masayuki Shima, Takeshi Korenori, Akito Yoshiike* invited
- 15:20** id 1140 An assessment of cross talk attenuation in line with natural ventilation  
*Ze Nunes, Andrew Rickard*
- 15:40** id 856 Computer aided engineering of public address loudspeakers  
*Michael Makarski* invited
- 16:00** id 1078 An experimental study on speech interference in public leisure spaces  
*Semih Yilmazer, Pelin Meriç Gezginer*
- 16:20** id 1141 Acoustic attenuators designed specifically for natural ventilation, controlling noise break in as well as cross talk across partitions  
*Ze Nunes, Andrew Rickard*
- 16:40** id 1142 An assessment of the acoustic performance of open windows, in line with ventilation requirements for natural ventilation  
*Ze Nunes, Ben Wilson, Michael Rickard*

## Characterization of structure-borne sound sources (cont.)

1.08

Session chairs	Werner Scholl	Volker Wittstock
<b>14:00</b>	id 464 Structure-borne noise of machinery components - characterization by a reception plate method <i>M. Bockhoff</i> invited	
<b>14:20</b>	id 740 Preparation of a round robin on the reception plate method to characterise structure-borne sound sources in buildings <i>Jochen Scheck, Maximilian Chamaoun, Heinz-Martin Fischer, Barry Gibbs</i> invited	
<b>14:40</b>	id 1003 Acoustic emission of metallic structures under stretches <i>Irinela Chilibon, Marian Mogildea, George Mogildea, Camelia Petrescu</i>	

## Sound insulation at low frequency

Session chairs	Barry Gibbs	Albano de Sousa
<b>15:00</b>	id 70 Prediction model for the risk of annoyance from external low frequency noise <i>Jukka Keränen, David Oliva, Valtteri Hongisto</i>	
<b>15:20</b>	id 180 Influence of mounting on sound reduction of rigid walls <i>Martin Schneider, Heinz-Martin Fischer</i>	
<b>15:40</b>	id 499 Vibro and sound isolation of the low frequency noise of the building equipment <i>Stanislav Ziaran</i> invited	
<b>16:00</b>	id 671 Low frequency sound generated vibration in buildings due to military training and air traffic <i>Finn Lovholt, Christian Madshus, Karin Norén-Cosgriff</i>	
<b>16:20</b>	id 973 Assessing annoyance due to low frequency noise in dwellings <i>Albano Neves e Sousa, Bernardo Martins</i> invited	
<b>16:40</b>	id 974 Low frequency airborne sound transmission <i>Albano Neves e Sousa, Francisco Couto</i> invited	

## Non linear dynamics of acoustic resonators

1.13

### Session chairs

Andrea Cardoni

Robert Bernhard

- 14:00** id 1009 Nonlinear phenomena in vibrating tensegrity structures  
*Adriano Alippi, Angelo Biagioni, Davide Conclusio, Annunziata D'Orazio*

invited

## Aeroacoustics and fan noise

### Session chairs

Temel Belek

Dave Holger

- 14:20** id 160 Acoustic energy balance of unsteady impinging flames  
*Mericia, J. G., Fernandes, E. C.*
- 14:40** id 167 Infrasound amplification in a region of convective instability  
*Konstantin Naugolnykh*
- 15:00** id 507 S-Cube™: generic controller for active acoustics  
*Tzvika Fridman, Alon Fleischer*
- 15:20** id 717 Broadband noise source location in turbomachinery using a conditioned spectral analysis technique coupled with modal decomposition  
*Gareth J. Bennett, Ian Davis, Ulf Tapken*
- 15:40** id 847 Research on the noise environment of the military bases on Okinawa  
*Takeshi Tokashiki, Higa Michihito*
- 16:00** id 1008 Acoustic measurements in a cryogenic wind tunnel  
*T. Ahlefeldt, C. Spehr, L. Koop, A. Lauterbach, S. Kröber, A. Henning*
- 16:20** id 1016 Jet noise spectrum decomposition  
*Werner Richarz, Harrison Richarz*
- 16:40** id 1117 Noise reduction of vacuum cleaner's output noise using transfer path analysis  
*Jae-Eun Jeong, Goon-Dong Park, In-Hyung Yang, You-Yub Lee, Jae-Eung Oh*

## notes

## Poster presentation

### Monday, 14 June

- id 357 Comparison of two baroque theatres from acoustical point of view  
*Monika Rychtářová, Jana Dolejši, Gerrit Vermeir, Jan Dolejši, Ladislav Pouzar*
- id 804 Effect of jet pressure in musical instruments of the txistu family  
*A. Agos-Esparza, M. J. Elejalde-García, E. Macho-Stadler*
- id 924 Aural determination of the strike note of a bell  
*Iva M. Salom, Miomir M. Mijic, Boris D. Despot*
- id 119 Adjust experimental of the structural reverberation time for different constructive solutions  
*Romina del Rey Tormos*
- id 149 Evaluation of vibration reduction index for different construction solutions  
*Del Rey, R., Alba, J., Escuder, E., Ramis, J., Segura, J. G.*
- id 150 Virtual acoustics of the chapel of the former mora hospital  
*D. Espinosa, T. Zamarreño, S. Girón*
- id 200 Airborne sound insulation properties of reed: the development of different construction systems based on reed panels  
*Jiménez-Espada, M., Díaz-Sanchidrián, C.*
- id 201 The use of reed panels in suspended ceilings and room dividers  
*Jiménez-Espada, M., Díaz-Sanchidrián, C.*
- id 290 Numerical estimation and control of heavy weight floor impact noise  
*Jae-Seung Hwang, Hongjin Kim, Sang-Hyun Lee, Ji-Hoon Park, Kyung-Soo Kang, Geon-Ho Hong*
- id 440 Current state of approval floor structure and impact sound insulation performance in laboratory  
*Kwan-Seop Yang, Kyoung-Woo Kim, Hyun-Jung Choi*
- id 470 Verification of standard floor impact source by comparing with living impact source  
*Hyeon Ku Park, Yul Kim, Guk Gon Song, Sun-Woo Kim*
- id 124 Mapping and analysis of traffic noise at an intersection in Umuarama-PR, Brazil  
*Caroline Salgueiro da Purificação Marques, Juliana Romagnoli Leski, Paulo Fernando Soares, Aline Lisot*
- id 652 Noise in small cities  
*V. Gómez Escobar, J. M. Barrigón Morillas, J. A. Méndez Sierra, R. Vilchez Gómez, J. Carmona del Río, G. Rey Gozalo*
- id 84 Noise mapping algorithmus for one of the biggest black sea port, the port of Constanta in Romania  
*M. Bite, P. Bite, I. Dombi, A. Tan*
- id 346 Spatial interpolation contribution to noise maps uncertainty  
*Asensio, C., Recuero, M., Ruiz, M., Ausejo, M., Pavón, I.* invited
- id 963 Fast determination of the acoustic area of influence of roads, railways, airports and industries  
*Vitor Rosão, Carlos Rosão, Eusébio Conceição*
- id 964 Variability of noise levels from railways  
*Vitor Rosão, Eusébio Conceição, Teresa Marques*
- id 969 Implantation of noise barriers in portuguese landscape  
*Lucia Házyová, Vitor Rosão, Eusébio Conceição*
- id 613 Agglomeration noise strategic maps in Catalonia  
*S. Jiménez, J. Romeu, T. Pàmies, M. Majó*
- id 586 Music and noise in the streets: exploring cultural soundscapes  
*Yiannis Christidis*
- id 469 Effect of temporal structure of operating sounds on the sound quality of noise emitted from a copy machine  
*Masayuki Takada, Shin-ichiro Onoda, Akito Hoshi, Shin-ichiro Iwamiya, Rika Hosaka, Koichi Ohtomi*
- id 754 Effect of traffic noise and vibration on living environment  
*Shigenori Yokoshima, Atsushi Ota, Akihiro Tamura*
- id 468 Health effect study of metropolitan railway noise in Seoul, Korea  
*Jong-Won Han, Hae-Young Ji, Jin-Hee Son, Seo Il Chang, Jin-Ho Kim*
- id 5 The investigation of plenum chamber role in noise reduction of a fan and air ducts  
*Farhad Forouharmajd, Parvin Nassiri*

- id 3 Axial splits in ducts for active noise control of higher order acoustic modes  
*Maria Alzira A. Nunes, Marcus António V. Duarte*
- id 86 Analysis and Evaluation of Stationary Noise Diversity on Diesel and Gas Bus in Beijing  
*Yidan Zhu*

## Tuesday, 15 June

- id 622 Creaking noise induced in dry friction between a strap and a fixed pipe in train with theoretical analysis  
*Masayuki Yokoi, Toshio Takahagi, Mikio Nakai*
- id 194 Road surface temperature influence on tire/pavement close proximity noise  
*M. Bueno, J. Luong, U. Viñuela, F. Terán, S. E. Paje*
- id 221 A study of the correlation between macrotexture and the tire/pavement close proximity noise  
*J. Luong, M. Bueno, F. Terán, U. Viñuela, S. E. Paje*
- id 965 Method to determine the speed of vehicles by means of noise levels variation  
*Vitor Rosão, Eusébio Conceição, Lucia Házyová*
- id 672 Long-term effects of façade sound insulation on noise annoyance and sleep disturbances  
*Astrid H. Amundsen, Gunn Marit Aasvang, Ronny Klæboe*
- id 1060 Diffraction edges perceived efficiency  
*O. Domingues, S. Antunes, I. Ramos, A. Velez Grilo*
- id 311 Vibrations and noise measurements on a military propeller aircraft  
*Márcia Carvalho, Nuno Nunes, Rita Silva, Teresa Cabral*
- id 264 Artificial intelligence methods in supporting long-term monitoring of aircraft noise  
*Wiesław Wszolek, Maciej Kłaczynski, Tadeusz Wszolek*
- id 588 Noise assessment and mitigation schemes for Tallinn airport  
*S. Vanker, M. Enneveer*
- id 87 Dynamic analysis in case of compaction vibrating rollers intended for road works  
*Polidor Bratu, Aurelia Mihalcea*
- id 88 Elastic and damping parameters for vibration insulation system  
*Bratu, P.*
- id 1082 High speed trains in Portugal vibration impact assessment  
*Schiappa F., Domingues O., Castro J., Sequeira S.*
- id 827 Investigation on sound insulation of buildings to low frequency sounds  
*Tetsuya Doi, Jiro Kaku*
- id 1162 Effect of dispersing combustion method on reducing noise of commercial active air inlet quick burner  
*Lin, Kuei-Yi, Ting, Chen-Ching, Lu, Shih-Yi, Chang, Cheng-Ping*
- id 292 A study of the source position error on the prediction of sound power in a reverberant room  
*Du-Hwan Chun, Byoung-Duk Lim, Deok-Ki Kim*
- id 161 Application of the bayesian inference for estimation of the long-term noise indicators and their uncertainty  
*Wojciech Batko, Bartłomiej Stepien*
- id 521 Numerical simulations of nonlinear ultrasonic waves in a bubbly liquid  
*C. Vanhille, C. Campos-Pozuelo*
- id 940 Determination of transmission loss of laminated glass by numerical methods  
*Ramis, J., Segovia, E., Alba, J., Carbajo, J.*
- id 273 Listening to diving birds  
*Joanna Szczucka*
- id 331 Ultrasonic investigations of cermet elastic properties in dependence on steel concentration and temperature of sintering  
*Abramovich A., Kadyrov M.*
- id 1004 Ultrasound piezoceramic transducer for sonochemistry applications  
*Irinela Chilibon*
- id 664 Estimation and reduction of vibration at workstations of dragee glazing line  
*Ilya E. Tsukernikov, Igor A. Nekrasov, Igor L. Shubin*
- id 936 Experimental study of the vibratory response of a structure of concrete  
*Ramis, J., Segovia, E., Alba, J., Carbajo, J.*

invited

- id 266 Vibration reduction index of a corner-junction with flexible interlayer  
*Eva Escuder Silla*
- id 439 Sound Insulation Performance of Gypsum-Board walls  
*Kyoung woo Kim*
- id 641 Evaluation on the improvement of the fire alarm sounder by the sound insulation in apartment buildings  
*Min-Joo Lee*
- id 1144 Sound field in small workroom  
*Janusz Piechowicz*

## notes