

Special sessions (invited speakers):

Railway noise and vibration

Aircraft Interior Noise - Results of the Brite-Euram BRAIN project

Failure detection in large structures using dynamic responses

Applications of Statistical Energy Analysis

Vibro-acoustic modelling and prediction

Active Noise and vibration control - Results of Brite-Euram projects

Automotive Noise and Vibration Harshness

Vehicle pass-by noise - Results of the Brite-Euram project PIANO

Contributed sessions:

Modal testing (methods and applications)

System identification techniques

Environmental testing

Source localisation, transfer path identification

Vibro-acoustic modelling and testing

Noise and Vibration Harshness

Vibrations in transmissions and drivelines

Model updating

Optimisation of passive noise and vibration control

Active noise and vibration control

Instrumentation, transducers

Statistical Energy Analysis

Energy flow analysis

Failure detection and condition assessment using dynamic characteristics

Structural dynamics optimisation

Substructuring

Rotating machinery

## **Railway noise and vibration**

Theoretical and experimental analysis of ring damped railway wheels

*I. Lopez, E. Vera, J. Busturia, J. Vinolas; CEIT, Centro Tutelado del Gobierno Vasco; Spain.*

An assessment of potential measures for reducing the noise

*D. J. Thompson, M. H. A. Janssens; TNO Insitute of Applied Physics; The Netherlands. Noise reduction of vibrating rollers*

*B. Spessert, A. Zürbes; RFH; Germany.*

Design of a vibration isolating screen

*G. Degrande, G. De Roeck, W. Dewulf, P. van den Broeck; K.U.Leuven, Dept. Civil Engineering; Belgium.*

*M. Verlinden; ICOS Benelux; Belgium.*

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## **Aircraft Interior Noise - Results of the Brite-Euram BRAIN project**

Modelling of fluid damping in thermal isolation

*D. T. Tsahalis; University of Patras, LFME, Chemical Eng. Dept.; Greece.*

Thermodynamic considerations of wave propagation in a highly-porous, fibrous thermal insulation material

*B. P. Semeniuk, C. L. Morfey, M. Petyt; University of Southampton, Inst. of Sound & Vibration Res.; UK.*

Wave propagation in an anisotropic, high-porosity fibrous thermal insulation material

*B. P. Semeniuk, C. L. Morfey, M. Petyt; University of Southampton, Inst. of Sound & Vibration Res.; UK.*

A symmetrical boundary element formulation for sound transmission through fuselage walls-I; Theory, implementation and test cases

*F. P. Grooteman, H. Schippers; NLR; The Netherlands.*

A symmetrical boundary element formulation for sound transmission through fuselage walls-II; Application

*A. De Boer, F. P. Grooteman; NLR; The Netherlands.*

*W. Desmet, P. Delmotte; K.U.Leuven; Belgium.*

Radiation damping in plates, induced by porous media

*A. Cummings; University of Hull, Dept. Eng. Design and Manufacturing; UK.*

*H. J. Rice; Trinity College Dublin, Dept. Mech. Eng.; Ireland.*

*R. Wilson; University of Nottingham, Dept. Architecture and Building Tech.; UK.*

Development of a MATLAB code based on a weak formulation of wave propagation through a flexible porous material. Comparison with experimental results

*T. P. Gialamas, D. A. Manolas, D. T. Tsahalis; University of Patras, LFME, Chemical*

*Eng. Dept.; Greece.*

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## **Failure detection in large structures using dynamic responses**

Resonance and anti-resonance dynamical behaviour of large mechanical systems

*S. Pietrzko; EMPA; Switzerland.*

Identification of time varying civil engineering structures using multivariate recursive time domain models

*P. H. Kirkegaard, P. Andersen, P. S. Skjærbæk; Aalborg University, Dept. of Building Tech. & Structural Eng.; Denmark.*

Evaluation of structural damage by dynamic system identification

*B. Peeters; K.U.Leuven,*

*Dept. Burgerlijke Bouwkunde; Belgium.*

*G. De Roeck; K.U.Leuven, Dept. Civil Engineering; Belgium.*

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*J. De Visscher; Vrije Universiteit Brussel,  
Dienst Analyse van Structuren; Belgium.*  
*W. P. De Wilde; Vrije Universiteit Brussel,  
Dienst Analyse van Structuren; Belgium.*  
*M. Ndambi, S. Parewyck, J. Vantomme*  
Uniquely identifiable array models in state space  
*P. Andersen, P. H. Kirkegaard, R. Brincker; Aalborg University, Dept. of Building  
Tech. & Structural Eng.; Denmark.*

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## **Applications of Statistical Energy Analysis**

Predictive SEA using the wave approach  
*K. H. Heron; DRA Farnborough, Structures Dept.; UK.*  
Analysis of the initial decay rate in experimental SEA  
*Lie Wu, A. Ågren; Luleå University of Technology, Acoustics Group; Sweden.*  
Use of SEA to reduce the noise in the driver's cabin of a TGV high speed train  
*A. Fages; GEC-ALSTHOM; France.*  
*G. Borello; InterAC; France.*  
Experimental SEA analysis of a railway carriage  
*K. De Meester, H. Van der Auweraer; LMS International; Belgium.*  
*N. Cuny; CEG Alstom; .*  
Three conservatively or two-conservatively coupled subsystems: can a dual interpretation be used?  
*C. Fredö; Chalmers University, Dept. of Applied Acoustics; Sweden.*

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## **Vibro-acoustic modelling and prediction**

On the influence of finite acoustical source dimensions on acoustical frequency response functions inside an enclosed cavity  
*K. Wyckaert, L. Meulewaeter; LMS International; Belgium.*  
Medium frequency expansion of a partially measured FRF matrix  
*M. Iadevaia, D. Otte, H. Van der Auweraer; LMS International; Belgium.*  
*L. Bregant; University of Trieste, Dip. di Energetica; Italy.*  
A generalized indirect boundary element model for handling complex acoustic problems  
*C. Lecomte, J. P. Coyette; Numerical Integration Technologies; Belgium.*  
The numerical treatment of a coupled elastic structure subjected to random excitations  
*J. P. Coyette; Numerical Integration Technologies; Belgium.*

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A new wave based prediction technique for coupled vibro-acoustic analysis: theoretical description and application to a double wall structure

*W. Desmet, P. Sas, D. Vandepitte; K.U.Leuven; Belgium.*

A new class of infinitive wave envelope elements for solving exterior acoustic problems

*J. P. Coyette, L. Cremers; Numerical Integration Technologies; Belgium.*

*J. A. Astley; University of Canterbury, Mech. Engineering; New Zealand.*

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## **Active Noise and vibration control - Results of Brite-Euram projects**

Active isolation of noise transmission through a helicopter gearbox support strut using multiple magnetostrictive actuators

*T. J. Sutton, S. J. Elliott, M. J. Brennan; University of Southampton; UK.*

Aircraft interior noise analysis using advanced vibro-acoustic modelling

*H. Van Der Auweraer, D. Otte; LMS International; Belgium.*

Simulating the efficiency of an actively controlled dynamic system: The LACES experience

*J. -L. Migeot; NIT; Belgium.*

*W. Steichen, G. Vanderborck; Thomson SINTRA ASM; France.*

Acousto-structural active control by piezoceramics and microphones on a large acoustic cavity through classical and nn-based algorithms

*A. Concilio, L. De Vivo, D. Siano, A. Sorrentino; CIRA ScpA; Italy.*

Active vibration control of road noise in automotive applications: Tools and methods to evaluate control configurations

*K. Wyckaert; LMS International; Belgium.*

Optimal design of laminated plates for active vibration control

*M. Resch, W. J. Elspass; ETH-Zentrum; Switzerland.*

A comparison of active control strategies for the reduction of structural power transmission

*P. Gardonio, S. J. Elliott, R. J. Pinnington; University of Southampton, ISVR; UK.*

Dynamic characterization of an interior trim panel aimed at the active noise control in a turboprop aircraft

*L. Lecce, M. Viscardi; University of Naples "Federico II", Dept. Aeronautical Eng.; Italy.*

Active control of vibration and sound: An overview of the patent literature

*D. Guicking; Drittes Physikalisches Inst. der Universität Göttingen; Germany.*

Multireference controllers for active control of noise and vibration

*P. Sjösten; University of Karlskrona/Ronneby; Sweden.*

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# Automotive Noise and Vibration Harshness

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## Vehicle pass-by noise - Results of the Brite-Euram project PIANO

Truck pass-by noise, detailed sources contribution identification during ISOR362 pass-by

*P. J. G. van der Linden; LMS International; Belgium.*

*H. Defay, J. P. Le Martret; Renault VI; France.*

Prediction of insertion loss of engine enclosures by indirect BEM calculations, combined with a substitution monopole source description technique

*F. Augusztinovics, P. Sas; K.U.Leuven; Belgium.*

*L. Cremers; Numerical Integration Technologies; Belgium.*

*R. Liebrechts, Mantovani*

*M. Mantovani, C. Bertolini; Centro Ricerche Fiat; Italy.*

Application of the monopole substitution technique and of the reciprocity principle in the evaluation of truck engine noise radiation

*M. Mantovani, C. Bertolini; Centro Ricerche Fiat; Italy.*

on the characterization of the acoustical strength of vehicle engines in relation to pass-by noise

*J. W. Verheij; TNO Institute of Applied Physics; The Netherlands.*

Microphone array techniques for non-stationary truck noise measurements

*J. Hald; Brüel & Kjær; Denmark.*

Correction of indoor pass-by noise measurements to estimate ISOR362 outdoor noise using acoustic transfer functions

*P. J. G. van der Linden, S. Goossens; LMS International; Belgium.*

*O. Jönsson; Scania; Sweden.*

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## Modal testing (methods and applications)

*A new instrument for single-point non-contact laser based vibration measurements*

*K. Gatzwiller; Brüel & Kjær, IMD Structural Dynamics Group; Denmark.*

*An extension of force appropriation for nonlinear systems*

*P. A. Atkins, J. R. Wright; Manchester University, Dynamics & Control Res. Group;*

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UK.

*K. Worden, G. R. Tomlinson; University of Sheffield, Dep. of Mech. & Process Eng.; UK.*

Optimal random signal design

*J. Cooper; University of Manchester; UK.*

*J. C. Golinval; Université de Liège, Aerospace Lab.; Belgium.*

*J. Swevers; K.U.Leuven, Div. PMA; Belgium.*

Experimental modal analysis and structural modification of the helicopter SW

*W. Lisowski, W. Bochniak, T. Uhl; Univ. of Mining and Metallurgy, Dept. Robotics; Poland.*

Validating design life-times using vibrational measurements

*W. van Rensburg; Mercedes-Benz of South Africa Ltd.; South Africa.*

*J. Wannenburg; Lab. for Advanced Engineering (Pty) Ltd.; South Africa.*

An improved method for moment excitation in mechanical mobility measurements using manipulated source signals

*M. A. Sanderson; Chalmers University of Technology, Dept. Applied Acoustics; Sweden.*

The MAC revisited and update

*P. G. Blaschke; Robert Bosch GmbH, Dept. FV/FLP; Germany.*

*D. J. Ewins; Imperial College; UK.*

Modal analysis of tuned longitudinal mode ultrasonic bar horns

*M. Lucas, G. Graham; Loughborough University, Dept. of Mechanical Eng.; UK.*

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## **System identification techniques**

Adaptive resampling for off-line signal processing

*F. Lembregts, J. Top, F. Neyrinck; LMS International; Belgium.*

Some recent results in the inverse analysis of sandwich beams

*E. M. O. Lopes, J. A. Brandon; University of Wales, Cardiff School of Eng.; UK.*

Nonlinear oscillations of an axially moving continuous system

*F. Pellicano, F. Zirilli; Università di Roma "La Sapienza", Dip. Matematica "G. Castelnuovo"; Italy.*

Application of a time domain regularized suboptimal solution in the deflection shape analysis of a diesel engine timing drive cover

*P. R. G. Kurka; DPM/FEM/UNICAMP; Brazil.*

*R. P. Ferreira; IOCHPE/MAXION - Engines Division; Brasil.*

Numerical considerations in modal parameter estimation

*A. W. Phillips, R. J. Allemang; Univ. of Cincinnati, Struct. Dyn. Research Lab.; USA.*

Parametric identification of multivariable systems in the frequency domain - a survey

*P. Guillaume, R. Pintelon, J. Schoukens; VUB, ELEC; Belgium.*

On the use of algebraic reconstruction technique (ART) for avoiding SVD-based methods in modal parameter identification problems

*F. S. V. Bazán; UFSC., Dep. Matematica; Brazil.*

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Modal parameter identification - where do we go from here?

*J. Cooper; University of Manchester; UK.*

Response of elastic beams of laminated bimetals to dynamic loading

*S. Zhang; Daimler-Benz AG; Germany.*

Quality and speed of the random decrement technique compared to FFT

*J. C. Asmussen, R. Brincker; Aalborg University, Dept. of Building Tech. & Structural Eng.; Denmark.*

Experimental determination of the inertial properties of mechanical components using vibrational response measurements

*D. Storer; Centro Ricerche Fiat; Italy.*

*A. Lucifredi, G. Quarto; University of Genova; Italy.*

On the design of optimal input signals for parameter identification

*D. Jennewein, C. -P. Fritzen; University of Siegen, Inst. of Mech. & Control Eng.; Germany.*

The sensitivity of updated turbo-generator foundation parameters to measurement and rotor/bearing modelling

*M. G. Smart, A. W. Lees, M. I. Friswell; University of Wales Swansea, Dept. Mech. Eng.; UK.*

On structure identification by mass addition method. Application on a HV circuit-breaker pole

*T. Gh. Cioara, D. Dragomir-Daescu, L. Bereteu; University "Politehnica" Timisoara, Vib. Testing & Rec. Lab.; Romania.*

*I. Manea; Res. & Des. Inst. for Electric Mach. , Transformers, electr. Equipm. & Traction; Romania.*

Fast parametric and nonparametric identification of shock absorbers

*S. Duym, R. Stiens; Vrije Universiteit Brussel, Dep. ELEC; Belgium.*

*K. Reybrouck; Monroe Europe n. v.; Belgium.*

A robust procedure for modal analysis in frequency domain

*M. A. V. Duarte, J. L. O. Pena; Universidade Federal de Uberlândia; Brazil.*

Experimental estimation of the high-frequency residual term based on two extra parameters

*M. L. M. Duarte, D. J. Ewins; Imperial College of Science Techn. and Medicine, Mech. Eng. Dep.; UK.*

On obtaining normal modes from measured complex modes

*J. Cooper, J. R. Wright; University of Manchester, Dynamics & Control Res. Group; UK.*

Corruption of Multiple reference mode indicator tools due to localized mode effects

*L. D. Isley, T. J. Foster, W. R. Kelley; Borg-Warner Automotive-Powertrain Systems; USA.*

Dynamic characterisation of a flexible automotive component exhibiting nonlinear behaviour

*A. Lorea; Magneti Marelli; Italy.*

*E. Nijman, D. Storer; Centro Ricerche Fiat; Italy.*

Effect of the flexible links and joints on the redundant robot vibrations

*M. Lacagnina, F. Petrone, R. Sinatra; Università di Catania, Inst. di Macchine; Italy.*

Residue identification by frequency and damping estimates

*A. Agneni, L. Balis Crema; Università degli studi di Roma "La Sapienza", Dip. Aerospaziale; Italy.*

*S. Sgubini, Università degli Studi di Pisa, Dip. di Ing. Aerospaziale; Italy.*

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Modelling and identification of vibration damping composite steel by experimental MCK identification method

*M. Okuma, F. Handa, Q. Shi; Tokyo Institute of Technology; Japan.*

Identification of principal rigid body modes under free-free boundary condition

*M. Okuma, Q. Shi; Tokyo Institute of Technology; Japan.*

Estimation of covariance function by random decrement

*J. C. Asmussen, R. Brincker; Aalborg University, Dept. of Building Tech. & Structural Eng.; Denmark.*

Maximum likelihood identification of robot dynamics using periodic excitation

*C. Ganseman, J. Swevers, H. Van Brussel, J. De Schutter; K.U.Leuven; Belgium.*

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## **Environmental testing**

Performance of acoustic test methods for quality evaluation of agricultural products

*N. Galili; Technion-I.I.T., Agr. Dept.; Israël.*

*J. De Baerdemaeker; K.U.Leuven, Dept. Agro-Engineering and Economics; Belgium.*

Environmental Low-frequency noise: What is it and how loud is it?

*V. Krylov; Nottingham Trent University; UK.*

Valve numerical analysis seismic qualification: Hopkinson steam admission valve application

*M. Panet; EDF Departement MTC; France.*

Shaker simulation of vehicle random vibration with occasional high peaks

*A. Steinwolf; National Acad. of Sciences of the Ukraine, Inst. of Mech. Eng. Problems; Ukraine.*

*R. G. White; University of Southampton, Depart. of Aeronautics & Astron.; UK.*

Reduction of vibration for living space in consideration of human motion

*N. Okubo, T. Hama, T. Toi; CHUO University, Dept. Precision Mechanics, CAMAL; Japan.*

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## **Source localisation, transfer path identification**

Vehicle noise design modifications analysis using truncated transfer path techniques

*X. Bohineust; PSA Peugeot Citroën/DRAS; France.*

Sensitivity of inertially reacted engine mount tests to changes in engine mount rates

*J. S. Meldrum; EG&G Structural Kinematics; USA.*

*N. Hay; Napier University; .*

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Structure-borne sound transmission between point connected plates

*I. Bosmans, P. Mees, G. Vermeir; K.U.Leuven; Belgium.*

Application of multiple reference transfer path analysis for solving structure-borne noise problems in vehicle design

*J. Romano, J. A. Lopez; BEA FASA RENAULT, Acoustic Synthesis Product Engineering; Spain.*

Study of transmission paths of vibratory energy by the principal components analysis

*X. Carniel, C. Made, J. -C. Pascal; CETIM, Ind. Acoustic Depart.; France.*

*D. Otte; LMS International; Belgium.*

Force identification from vibration measurements in the wavenumber domain

*A. Fregolent, A. Sestieri; Università di Roma "La Sapienza", Dip. Mecc. & Aeronautica; Italy.*

Statistical decision methods for noise and vibration engineering

*C. Couvreur, P. Chapelle; Faculté Polytechnique de Mons; Belgium.*

Minimisation of noise transmission through hydraulic pipe mountings

*A. H. M. Kwong, K. A. Edge; University of Bath, School of Mech. Engineering; UK.*

Dynamic analysis of high performance motorcycles

*A. Lucifredi; Università di Genova, Inst. Mech. Applicata; Italy.*

*G. Camauli, M. Forte; LMS Italiana; Italy.*

*L. Marzocchi; BIMOTA; Italy.*

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## **Vibro-acoustic modelling and testing**

Acoustic modelling of the three phase asynchronous electrical machine

*C. Öztürk; TEE A. S. , R&D Department; Turkey.*

Acoustical characterization of vibration structure by non contact measurements:

application to loudspeaker diaphragm

*G. M. Revel, G. L. Rossi; Università degli Studi di Ancona, Dip. di Meccanica; Italy.*

Numerical analysis of the dynamical interaction between an acoustical cavity and a vibrating coupled panel

*F. Curà, G. Curti, V. Giorgis, F. Scarpa; Politecnico di Torino; Italy.*

High performance computational environment for vibro-acoustic optimization

*J. -L. Migeot; NIT; Belgium.*

Evaluation of radiation efficiency of non-uniform vibrating plates by means of intensity measurements

*A. Doria; Università di Padova, Dip. di Ing. Meccanica; Italy.*

Rayleigh-Ritz method and substructuring in the study of the free vibrations of fluid-structure interacting systems

*M. Amabili; Università di Ancona, Dip. di Meccanica; Italy.*

An experimental investigation of the acoustic energy flow over the flat barriers

*S. Weyna; Technical university of Szczecin, Ship Acoustic Dept.; Poland.*

Acoustic modal analysis at low frequencies: equivalence and difference of various formulations

*F. Augusztnovics, P. Sas; K.U.Leuven; Belgium.*

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Source imaging of irregularly shaped surfaces using inverse FRF method  
*S. M. Dumbacher, D. L. Brown; Univ. of Cincinnati, Struct. Dyn. Research Lab.; USA.*

Applying micro-electronics design optimization techniques to MCAE: The challenge of the SINOSA2 project  
*J. -L. Migeot; NIT; Belgium.*

*L. Dupas, R. Cartuyvels; IMEC; Belgium.*

Boundary impedance updating using acoustic FRF's  
*P. Mas; K.U.Leuven; Belgium.*

*B. P. Semeniuk; University of Southampton, Inst. of Sound & Vibration Res.; UK.*

*P. Sas; K.U.Leuven; Belgium.*

Comparison of Nearfield Acoustic Holography and Dual Microphone Intensity Measurements  
*R. W. Bono; The Modal Shop. Inc.; USA.*

*D. L. Brown, S. M. Dumbacher; Univ. of Cincinnati, Struct. Dyn. Research Lab.; USA.*

Flow induced vibro-acoustic response due to rotor-stator interaction (RSI) in a large hydraulic power plant  
*L. Lecce, F. Barbato; University of Naples "Federico II", Dept. Aeronautical Eng.; Italy.*

*M. Iadevaia; LMS International; Belgium.*

*C. Mirone, F. di Maso; ENEL - DST/SMP; Italy.*

Quality assessment of the acoustic velocity field for general finite element meshes  
*Ph. Bouillard, J. -F. Allard, G. Warzee; ULB, Dept. of Continuum Mechanics; Belgium.*

Modelling the vibrational characteristics of stator cores of large electrical machines  
*S. D. Garvey, J. E. T. Penny; Aston University, Dep. Mech. and Electrical Engineering; UK.*

*M. I. Friswell; University of Wales Swansea, Dept. Mech. Eng.; UK.*

*Walker*

Energy dissipation in thin air layers  
*W. M. Beltman, P. J. M. van der Hoogt, R. M. E. J. Spiering, H. Tijdeman; University of Twente, Dep. of Mech. Eng.; The Netherlands.*

Preliminary validation of Acusys to analyse instabilities in the non linear combustion zone-plant acoustic interaction  
*A. Brighenti, D. Contiero; Systems & Adv. Techn. Eng.; Italy.*

Noise generated by machines: development of measurement methods  
*G. Miccoli; CEMOTER, Ist. per le Macchine Mov. terra e Veicoli Fuorist.; Italy.*

*G. L. Rossi; università degli Studi di Ancona, Dip. di Meccanica; Italy.*

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## **Noise and Vibration Harshness**

Experimental evaluation of an optimization program for a front wheel drive engine mount system

*C. B. Nel; Technikon Pretoria, Dep. of Mech. Eng.; Republic of South Africa.*

*P. S. Heyns; University of Pretoria; Republic of South Africa.*

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identification, quantification and reduction of structure borne road noise in a midsize passenger car

*L. Gielen, P. J. G. Van der Linden; LMS International; Belgium.*

*R. Deges; Ford Werke AG; Germany.*

Hybrid test-analytical modelling for structure borne noise prediction

*A. Queckenberg; Mercedes-Benz AG; Germany.*

Sound quality evaluation of transient sound and its improvement by structural modification

*T. Toi, Y. Nagashima, N. Okubo; Chuo University, Dept. Precision Mechanics, CAMAL; Japan.*

The acoustic effect of the cabin enclosure and its approximate inversion

*L. Gredmaier; ISVR, Automotive Group; UK.*

High-frequency NVH optimization using energy techniques

*U. Fingberg; FORD-Werke AG, ACC-MF/PZ-PEN2; Germany.*

*T. Bharj; FORD-Motor Company, CAE NVH Development; USA.*

*B. Cimerman; Vibro-Acoustic Sciences Inc.; USA.*

Improvement of the 2nd EO booming noise of a diesel engine car. Application of TPA including structure-borne noise and airborne noise

*G. Koners; Mercedes-Benz AG EP/CFA; Germany.*

An investigation of the structurally induced acoustic field in the interior cavity of a passenger vehicle

*D. Morrey, F. R. Whear*

*F. R. Whear; ABB Rail Vehicles; UK.*

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## **Vibrations in transmissions and drivelines**

Diesel engine cylinder pressure reconstruction

*R. B. Randall, H. Ngu; UNSW, School Mech. and Manuf. Eng.; Australia.*

Parameter estimation in dynamic models of gear drives using the forced response and the model method

*G. Dalpiaz, A. Rivola, R. Rubini; University of Bologna, DIEM; Italy.*

Frequency domain versus cepstrum technique for machinery diagnostics and input waveform reconstruction

*G. D. Cassini, W. D'Ambrogio, A. Sestieri; Università di Roma "La Sapienza", Dip. Mecc. & Aeronautica; Italy.*

Operation of flexible mechanisms at high speed

*A. Aanaque; Ecole Mohammedia d'Ingenieurs, Dept. Genie Mecanique; Morocco.*

*S. D. Garvey, J. E. T. Penny; Aston University, Dep. Mech. and Electrical Engineering; UK.*

*M. I. Friswell; University of Wales Swansea, Dept. Mech. Eng.; UK.*

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## Quality assessment of computational models

Study of the vibration of thin rectangular plates with punctual boundary conditions  
*Y. Murer, F. Simon, S. Pauzin; CERT/ONERA, Complex Aérospatial de Lespinet; France.*

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## Model updating

On the use of multiple boundary conditions for the adjustment of finite element models: an experimental study

*D. Alves Rade, M. A. V. Duarte, L. A. da Silva; Universidade Federal de Uberlândia; Brasil.*

Determination of coherence length among the surface of an engine model

*P. Mas, F. Augusztinovicz; K.U.Leuven; Belgium.*

Dynamic updating of piping networks - identification of boundary conditions

*M. Gaudin, J. L. Trollé; EDF, Direction Etudes et Recherche; France.*

*G. Coffignal; ENSAM; France.*

The use of boundary masses in model updating and damage detection

*M. Karpel; Technion, Fac. of Aerospace Eng.; Israel.*

*S. Ricci; Politecnico di Milano, Dip. di Ingegneria Aerospaziale; Italy.*

Optimum choice of parameters for multiple measurement sets

*M. I. Friswell; University of Wales Swansea, Dept. Mech. Eng.; UK.*

*S. D. Garvey, J. E. T. Penny; Aston University, Dep. Mech. and Electrical Engineering; UK.*

Evaluation of two updating methods for dissipative models on a real structure

*P. Moine, L. Billet; EDF, Dir. des Etudes et Rech. V105; France.*

*D. Aubry; Ecole centrale de Paris; France.*

Updating methods applied to spatial electronic equipments

*R. Kenda, Y. Wu, C. Conti; Faculté Polytechnique de Mons, MR; Belgium.*

*E. Filippi; Alcatel Bell SDT (BP 4008); Belgium.*

Use of generic elements for model updating

*S. Ziaei-Rad, M. Imregun; Imperial College, Mechanical Eng. Dept.; UK.*

Testing of FRF based model updating methods using a general finite element program

*R. Pascual, J. C. Golinval; Université de Liège, Aerospace Lab.; Belgium.*

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# Optimisation of passive noise and vibration control

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## Active noise and vibration control

Active acoustic control of lightweight structures with piezoceramic actuators at higher frequencies

*R. Maier, M. Bebesel; Daimler-Benz AG, FIM/GA; Germany.*

Nonlinearities in tuned loudspeaker enclosures for active noise control

*L. A. Blondel; Faculté Polytechnique de Mons, Serv. de Physique Générale; Belgium.*

*S. J. Elliott; University of Southampton, ISVR; UK.*

Active resonator for noise control

*R. Maier, M. Pucher; Daimler-Benz AG, FIM/GA; Germany.*

Experience of active control of noise from HVAC and industrial equipment

*G. Leventhall, S. Wise; Digisonix Inc.; USA.*

Implementation of an active noise control system in a double-glazing window

*P. De Fonseca, P. Sas, H. Van Brussel; K.U.Leuven; Belgium.*

Active electro-pneumatic suspension system

*G. J. Stein; Slovak Academy of Sciences, Inst. Materials & Mach. Mech; Slovakia.*

Neural networks based controller for active vibration control

*T. Uhl, T. Salamon, Z. Korendo; Univ. of Mining and Metallurgy, Dept. Robotics;*

*Poland.*

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## Instrumentation, transducers

## Statistical Energy Analysis

The process to experimentally identify the Statistical Energy Analysis parameters of industrial structures: step by step

*L. Hermans, K. Wyckaert; LMS International; Belgium.*

*K. Delanghe; LMS NT; Belgium.*

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## Energy flow analysis

Two-dimensional short wave vibrations: complex envelope solution

*A. Carcaterra, L. Adamo; Università di Roma "La Sapienza", Dip. Mecc. & Aeronautica; Italy.*

Measuring flexural power flow in beams using a spatial-domain regressive discrete fourier series

*José Inácio Piva; Equipamentos Clark Ltda.; Brazil.*

New nondestructive method to estimate parameters of a dynamic deformation field in machines and structures

*V. M. Rodushkin; IMASh RAN, Dept. Exper. Mech; Russia.*

Practical investigation of structural energy flow by means of intensity, energy flow, and point power measurements

*G. Rasmussen; G. R. A. S.; .*

*R. W. Bono, M. J. Lally; The Modal Shop. Inc.; USA.*

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*Antonio Carcaterra; INSEAN; Italy.*

Strategies for active vibration control using a structural power flow approach

*José Robert de Franca Arruda; Universidade Estadual de Campinas, Dep. de Mech. Computac.; Brazil.*

*I. Moens; K.U.Leuven; Belgium.*

Identification of flexural waves in a pipe for the characterization of a pump

*H. Andriambololona, Ph. Derbyshire; EDF, Acoust. & Vibration Mech. Branch; France.*

Experimental validation of Energy Flow Analysis on a two dimensional frame.

*I. Moens, D. Vandepitte, P. Sas; K.U.Leuven; Belgium.*

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*A. R. Fleszar, H. A. Eversen, C. D. Van Karsen; Michigan Technological University,*

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*R. C. Micaletti, A. S. Çakmak; Princeton University; USA.*

*S. R. K. Nielsen, P. H. Kirkegaard; Aalborg University; Denmark.*

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*L. Balis Crema, A. Castellani; Università "La Sapienza"; Italy.*

Comparison of model updating methods adapted to local error detection

*P. Collignon, J. C. Golinval; Université de Liège, Aerospace Lab.; Belgium.*

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*C. -P. Fritzen, D. Buchen; Institute of Mechanics and Control Eng. , University of Siegen; Germany.*

Nonlinear vibration of cracked structures: the practical implications of some recent research results

*J. A. Brandon; University of Wales,*

*Cardiff School of Eng.; UK.*

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*R. Ruotolo, C. Surace; Politecnico di Torino; Italy.*

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*S. Seibold; ITWM; Germany.*

*M. Orth; Universität Kaiserslautern; Germany.*

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*S. Seibold; ITWM; Germany.*

*Y. Ben-Haim; Technion Israel Institute of Technology; Israel.*

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*F. Mastroddi, R. Denni; Università di Roma "La Sapienza", Dip. Aerospaziale; Italy.*

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*A. Nauerz; Univ. Kaiserslautern, Lehrstuhl für Technische Mechanik; Germany.*

*C. -P. Fritzen; University of Siegen, Inst. of Mech. & Control Eng.; Germany.*

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*K. -E. Hilmi, D. Turner; British Aerospace Ltd. , Dynamics Division; UK.*

Structural damage detection from substructure modes

*H. Ahmadian, J. E. Mottershead; The University of Liverpool, Dep. of Mechanical Eng.; UK.*

*M. I. Friswell; University of Wales Swansea, Dept. Mech. Eng.; UK.*

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*B. Verbeure, H. Van Brussel, P. Sas; K.U.Leuven; Belgium.*

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*J. A. F. Borges, V. Steffen Jr.; Federal University of Uberlândia, Mech. Eng. Dep.; Brazil.*

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*D. Morrey, M. Barr; Oxford Brookes University; UK.*

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*R. Muscia; University of Trieste, Dept. of Energetics; Italy.*

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*C. Dogariù, F. Al-Bender, W. Heylen; K.U.Leuven; Belgium.*

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*W. Luber; Daimler Benz Aerospace AG, Mil. Aircraft LME24; Germany.*

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*M. Ahrens, L. Kucera; ICMB, ETH Zurich; Switzerland.*

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*E. Balmès; ONERA/ORVS; France.*

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*S. Ricci; Politecnico di Milano, Dip. di Ingegneria Aerospaziale; Italy.*

*M. Karpel; Technion, Fac. of Aerospace Eng.; Israel.*

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*M. L. M. Duarte, D. J. Ewins; Imperial College of Science Techn. and Medicine, Mech. Eng. Dep.; UK.*

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*M. A. V. Duarte, C. R. Ribeiro, D. Alves Rade; Universidade Federal de Uberlândia; Brazil.*

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*L. Bregant; University of Trieste, Dip. di Energetica; Italy.*

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*TaeHan Jee, J. Jung, Y. Park; Yonsei University, Dept. of Mechanical Engineering;*

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*J. Szwedowicz; ABB Turbo Systems Ltd., Thermal Mach. Lab.; Switzerland.*

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*S. Gade, H. Herlufsen, H. Konstantin-Hansen; Brüel & Kjær, Industrial Management division; Denmark.*

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*M. Rades; University Politehnica of Bucharest, Dept. Engineering Sciences; Romania.*

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*Thanh Lan Vu, J. Pan, J. P. Trevelyan, C. Bao; University of Western Australia; Australia.*

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