

Wednesday September 16, 1998

KEY Keynotes

Smart Structures Solutions to Vibration Problems*

D. J. Inman, Virginia Polytechnic Institute and State University, USA

Cabin Noise Control in the Saab 2000 high-speed turboprop aircraft*

U. Emborg, Saab AB, Sweden

SNVC1 Noise and vibration control : results of BRITE-EURAM projects

13:00 Operation and performance of an electromechanical film panel actuator*

M. Antila, J. Tanttari, L. Lamula, VTT Manufacturing Technology, Finland

13:25 JMC method in active control of sound*

S. Uosukainen, VTT Building Technology, Finland

13:50 Elimination of vibrations in a unit of an aircraft. A mathematical model to test structural improvements.

L. Boman, Saab AB, Sweden

14:15 Assessment of the efficiency of ring dampers for railway wheels

I. Lopez, CEIT, Spain ; A. Castaños, CAF, Spain ; J.M. Busturia, J. Viñolas, CEIT, Spain

14:40 Tuning of vibration absorbers under wide band excitation by stochastic dynamic analysis

P. Fischer, H. Karrer, T. Kamla, Steyr-Daimler-Puch AG, Austria

15:05 Identification of the mechanical and piezoelectric parameters of a massively piezoelectric structure

P. De Boe, R. Pascual, J.C. Golinval, Université de Liège, Belgium

DAMM1 Damage detection and monitoring : methods

13:00 Application of a modelling error estimator for health monitoring and damage detection*

A. Chouaki, P. Ladevèze, LMT-Cachan, France

13:25 An overview of the geometric approach to fault identification in stochastic dynamical systems*

S.D.Fassois, University of Patras, Greece ; M.H. Sadeghi, University of Tabriz, Iran

13:50 A direct approach for updating and damage detection by using FRF data

L. Balis Crema, F. Mastroddi, Università degli studi di Roma "La Sapienza", Italy

14:15 Markov techniques for signal recognition. Application to non-invasive vibratory diagnostics of fast mechanisms

F. Bolle, A. Lucifredi, University of Genova, Italy ; S. Calabrò, ABB Ricerca, Italy

14:40 Damage detection using wavelet-based statistical analysis*

W.J. Staszewski, University of Sheffield, UK ; C. Biemans, C. Boller, Daimler-Benz Aerospace, Germany ; G.R. Tomlinson, University of Sheffield, UK

15:05 Truncation effects on residue estimation

A. Agneni, L. Balis Crema, A. Paolozzi, Università di Roma "La Sapienza", Italy

FAT1 Fatigue and durability

13:00 High-cycle fatigue analysis of turbomachine bladed disks upon polyharmonic vibrations in inhomogeneous flow

E.P. Petrov, Kharkov Polytechnic University, Ukraine

13:25 Fatigue equivalent data reduction of durability tests for shock absorbers*

S. Duym, Tenneco Automotive, Monroe European Technical Center, Belgium ; S. Dupont, D. Coppens, LMS International NV, Belgium

13:50 Application of the global/local model concept for the computation of stress frequency response functions*

B. van Hal, D. Vandepitte, K.U.Leuven, Belgium

14:15 Resonance frequencies of damped structures

M.I. Friswell, A.W. Lees, University of Wales Swansea, UK

VAMT1 Vibro-acoustic modelling and testing

13:00 Investigation of accelerating technique for the variational boundary element method based on multipole expansions*

N. Atalla, M. A. Tournour, Université de Sherbrooke, Canada

13:25 Numerical computation of waves : a meshless alternative

Ph. Bouillard, S. Suleau, Université Libre de Bruxelles, Belgium

13:50 Middle-frequency vibro-acoustic parameters of axisymmetrical shells in fluid medium

A. Yu. Dushin, St. Petersburg State University for Marine Engineering, Russia

14:15 A new criterion to estimate the sound radiated by ribs in BEM calculation

S. Le Moyne, Renault, France ; J.L. Tébec, Ecole Nationale Supérieure des Arts et Métiers, Paris, France ; J.C. Kraemer, Renault, France

15:05 Vibro-acoustics : extension of the envelope approach to two-dimensional structures

L. Adamo, A. Sestieri, Università di Roma "La Sapienza", Italy ; A. Carcaterra, INSEAN, Italy

SUB1 Substructuring

13:00 Dynamic expansion of frequency response functions

F. Piergentili, P. Avitabile, J. O'Callahan, University of Massachusetts Lowell, USA

13:25 Evaluation of FRF parameterization schemes for component dynamics characteristics in multi-body calculations of assembled vehicles

L. Hermans, H. Van der Auweraer, LMS International NV, Belgium ; V. Valasca, K.U.Leuven, Belgium

13:50 Development of hybrid vibration simulator for automobiles using substructure synthesis method based on FE Component and real substructure model

T. Toi, A. Shimamura, N. Okubo, Chuo University, Japan

14:15 Matrix inversion technology for vibro-acoustic modelling applications : practical examples of measurement noise reduction by SVD

T. Martens, K. Wyckaert, LMS International NV, Belgium

14:40 Dynamic model reduction of a flexible three-axis milling machine

P. De Fonseca, D. Vandepitte, H. Van Brussel, P. Sas, K.U.Leuven, Belgium

15:05 Practical application of a selection criteria for constructing the superset of residual flexibility modes used in modal synthesis method

P.R.G. Kurka, C.A. Araújo, Unicamp-Campinas, Brasil

NOL1 Non-linearities

13:00 Modal identification of non-linear structures*

J. Piranda, R. Fillod, E. Foltete, Université de Franche-Comté, France

13:25 Numerical and experimental investigations of the dynamics of valve trains in combustion engines

C.-P. Fritzen, M. Dreyer, Universität Gesamthochschule Siegen, Germany

13:50 Survey of nonlinear detection and identification techniques for experimental vibrations

D.E. Adams, R.J. Allemang, University of Cincinnati, USA

14:15 Nonlinear vibrations of circular cylindrical shells coupled to fluid : Discretization method

M. Amabili, Università di Parma, Italy ; F. Pellicano, Università di Modena, Italy ; M.P. Paidoussis, McGill University, Canada

14:40 Internal resonances and travelling waves in a submerged structure

F. Pellicano, Università di Modena, Italy ; M. Amabili, Università di Parma, Italy ; M.P. Paidoussis, McGill University, Canada

15:05 Identification of nonlinear aeroelastic systems

G. Dimitriadis, J.E. Cooper, University of Manchester, UK

VNT1 Vibration and noise testing

15:55 Measuring the 6 degree of freedom driving point frequency response function using a 6 DOF impedance head and its validation

M.C. Witter, J.R. Blough, D.L. Brown, University of Cincinnati, USA

16:20 Guidelines for experimental identification of rigid body inertial properties using the mass-lines method

G. Bianchi, A. Fauda, F. Paolucci, ITIA-CNR, Italy

16:45 Identification of non-proportionally damped structures using a force appropriation technique

S. Naylor, J.R. Wright, J.E. Cooper, University of Manchester, UK

17:10 Optimization of experimental conditions for high level shock tests

F. Cambier, C. Conti, P. Dehombreux, Faculté Polytechnique de Mons, Belgium ; E. Filippi, Alcatel-Etca, Belgium

17:35 Multiple input measurement technique for mobility matrix acquisition

L. Ivarsson, K. Larsson, M.A. Sanderson, Chalmers University of Technology, Sweden

18:00 Definition and validation of a methodology industrially usable to analyse the dynamic behaviour of a car engine component made in plastic

R. Capitani, M. Pierini, University of Firenze, Italy ; S. Massimo, Magneti Marelli, Italy

DAMM2 Damage detection and monitoring : methods

15:55 Damage detection using multivariate statistics

K. Worden, G. Manson, N. R.J. Fieller, S. Curtis, The University of Sheffield, UK

16:20 Damage detection in machines using neural networks

K. Worden, S. Patsias, W.J. Staszewski, The University of Sheffield, UK

16:45 Damage localization in structures. A pattern recognition perspective

I. Trendafilova, W. Heylen, P. Sas, K.U.Leuven, Belgium

17:10 A structural damage location & extend identification based on strain energy approach

L.-M. Zhang, Q. Wu, Njinging University of Aero-& Astronautics, China ; M. Link, University of Kassel, Germany

17:35 Fault diagnosis of bearing by using analysis of vibrations and neuro-fuzzy classification

F. Ionescu, D. Arotaritei, Fachhochschule Konstanz, Germany

18:00 Identification of damage in structures using parameter dependent modal response

Z. Mróz, T. Lekszycki, Polish Academy of Sciences, Poland

MUC1 Model updating and correlation

15:55 The role of model structure and parametrisation errors in finite element model updating*

M. Link, G. Hanke, University of Kassel, Germany

16:20 Updating of large FE-models using weighted least squares estimation with application on smart structures

O. Martin, M.W. Zehn, Otto-von-Guericke-Universität Magdeburg, Germany

16:45 Application of computational model updating to aeroengine components

C. Schedlinski, ICS, Germany ; M. Link, University of Kassel, Germany ; A. Schönrock, BMW Rolls-Royce, Germany

17:10 New figures of merit for non-modal test-analysis correlation

W. D'Ambrogio, University of L'Aquila, Italy ; A. Fregolent, Università di Roma "La Sapienza", Italy

17:35 Updating of the analytical models of two footbridges based on modal testing of full-scale structures

A. Pavic, M.J. Hartley, P. Waldron, University of Sheffield, UK

VAMT2 Vibro-acoustic modelling and testing

15:55 On the numerical properties of a wave based prediction technique for coupled vibro-acoustic analysis

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

16:20 A sub-domains reconstruction method for large acoustical domains

T. Ait younes, M.A. Hamdi, Université de Technologie de Compiègne, France

16:45 The Waterhouse correction for resilient boundaries

A. Schaffner, AUVA, Austria

17:10 Parametric sensitivity of interior acousto-structural coupled systems using a symmetric eulerian formulation

F. Scarpa, The University of Sheffield, UK ; G. Curti, Politecnico di Torino, Italy

17:35 Modelling of absorptive acoustic waves

K. Pellant, Institute of Mechanics of Solids, TU Brno, Czech Republic

SID1 System identification

15:55 Critical comparison and assessment of MIMO structural identification methods : deterministic and stochastic schemes

A. Florakis, S.D. Fassois, University of Patras, Greece ; F.M. Hemez, Ecole Centrale Paris, France

16:20 Frequency-domain maximum likelihood identification of modal parameters with confidence Intervals

P. Guillaume, P. Verboven, S. Vanlanduit, VUB, Belgium

16:45 A frequency-domain maximum likelihood approach for the extraction of modal parameters from output-only data

L. Hermans, H. Van der Auweraer, LMS International NV, Belgium ; P. Guillaume, VUB, Belgium

17:10 Development of experimental spatial matrix identification method (Basic studies of the identification)

M. Okuma, T. Oho, Tokyo Institute of Technology, Japan

17:35 The enhanced frequency response function (eFRF): scaling and other issues

A.W. Phillips, R.J. Allemang, University of Cincinnati, USA

MHF1 Medium and high frequency techniques

15:55 An experimental tool for the evaluation of SEA coupling and dissipation loss factors applied to plates connected via beam junctions

P. Vitiello, V. Quaranta, G. Romano, C.I.R.A. S.C.p.A, Italy

16:20 Evaluation of the transition frequency characterizing the deterministic and statistical behaviour of structures

A. Carcaterra, INSEAN, Italy ; A. Sestieri, Università di Roma "La Sapienza", Italy

16:45 Validation of geometrical room acoustics algorithms by comparing predicted and measured room responses

A.T. Fürjes, É. Arató-Borsi, T. Póth, F. Augusztinovicz, *Technical University of Budapest, Hungary*
17:10 Vibro-acoustic energy flow models implemented by finite elements

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

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ROT1 Rotating machinery

9:00 Estimation of independent operating shapes, based on order track measurements

J.R. Blough, D.L. Brown, University of Cincinnati, USA

9:25 Experimental modal analysis of systems with parametric excitation

J. Bienert, T. Prothmann, H. Witfeld, University of the Federal Armed Forces Hamburg, Germany

9:50 Torsional vibrations in ship's propulsion device accounting for parametric excitation and propeller-engine coupling

A. Carcaterra, INSEAN, Italy ; R. D' Aquino, University of Rome "La Sapienza", Italy

10:15 Pedestal identification in rotor-bearing-pedestal systems using non-linear bearing force evaluation

N S Feng, E.J. Hahn, The University of New South Wales, Australia

DAMM3 Damage detection and monitoring : methods

9:00 Forward identification methods for damage location*

M.I. Friswell, University of Wales Swansea, UK ; J. E. Penny, S. D. Garvey, Aston University, UK

9:25 Modal testing and structural identification of a planar truss

M. Mitri, A. Morassi, University of Udine, Italy

9:50 Error localization by means of spectral densities

A. Nauertz, Universität Kaiserslautern, Germany ; C.-P. Fritzen, Universität Siegen, Germany

10:15 Fault localization in structures from remote FRF measurements. Influence of the measurement points.

I. Trendafilova, W. Heylen, K.U.Leuven, Belgium

NVH1 Automotive noise and vibration harshness

9:00 Modelling in-vehicle engine noise (listen to the noise paths)

P. Van de Ponsele, F. Deblauwe, G. Lowet, LMS International NV, Belgium

9:25 The principle of reverse engineering used to develop automatic holographic fringe analysis to further brake noise understanding

M. Rennison, C. Edwards, J.D. Fieldhouse, The University of Huddersfield, UK

9:50 Identification and reduction of sound sources in car wheel suspensions

X. Lauwerys, Tenneco Automotive, Monroe Michigan, USA ; M. Maes, Tenneco Automotive, Monroe European Technical Centre, Belgium ; F.

Augusztinovicz, G. Nagy, Technical University of Budapest, Hungary

10:15 Development of a testing method for automotive shock absorber noise

F. Augusztinovicz, P. Pfliegel, Technical University of Budapest, Hungary ; M. Maes, K. Reybrouck, Tenneco Automotive, Monroe European

Technical Centre, Belgium

VAMT3 Vibro-acoustic modelling and testing

9:00 Impact of structures on the water surface : an upper bound analysis of the induced stress

A. Carcaterra, INSEAN, Italy ; E. Ciappi, University of Rome "La Sapienza", Italy

9:25 Modal testing of the Norsjö Dam

S.J. Pietrzko, R. Cantieni, Y. Deger, EMPA, Switzerland ; U. Wiberg, Vattenfall Utveckling AB

9:50 Spatial matching of structural and acoustic modes in an airtight box

T.G.H. Basten, A.J. Mateboer, H. Tijdeman, University of Twente, The Netherlands

10:15 Vibro-acoustic experiments with a stowed solar array*

B. Winter, Fokker Space BV, The Netherlands

NVC1 Noise and vibration control

9:00 Modelling of equipment loaded panels for robust control investigations

G.S. Aglietti, University of Southampton, UK ; R.S. Langley, Cambridge University, UK ; E. Rogers, S.B. Gabriel, University of Southampton, UK ;

J. Stoustrup, Aalborg University, Denmark

9:25 Non-linear control of buckled beams

O.C. Pinto, P.B. Gonçalves, PUC-Rio, Brasil

9:50 Active control of plate vibrating in a finite baffle and interacting with fluid

L. Leniowska, Pedagogical University of Rzeszów, Poland

10:15 Hybrid fuzzy sliding-mode method of active control of robot flexible arm vibration

R. Leniowski, Technical University of Rzeszów, Poland

VNTC1 Vibration and noise testing : Case studies

11:05 Vibration damping study for the ESRF magnet-girder assemblies

L. Zhang, European Synchrotron Radiation Facility, France ; T.M. Lewis, C. Michael, Damping Technologies Inc., USA

11:30 Monitoring of the firmness of a conference pear using experimental modal analysis

W. Dewulf, K.U.Leuven, Belgium ; P. Jancsó, Pannon Agricultural University Mosonmagyaróvár, Hungary ; E. Papadiamantopoulou,

University of Athens, Greece ; B. Nicolai, G. De Roeck, K.U.Leuven, Belgium

11:55 Comparative analysis of the static and dynamic mechanical eggshell behaviour of a chicken egg

P. Coucke, G. Jacobs, P. Sas, J. De Baerdemaeker, K.U.Leuven, Belgium

DAMP1 Damping

11:05 Optimal unconstrained damping distributions for vibrating elements using evolutionary algorithms

L. Bregant, V. Pediroda, Università degli Studi di Trieste, Italy

11:30 Predicting the dynamic characteristics of sandwich rubber mounts using FEA

S.O. Oyadiji, S.R. Choi, University of Manchester, UK

11:55 On a two-step method of vibration damping analysis of layered viscoelastic beams and plates

S. Karczmarzyk, Z. Osinski, Warsaw University of Technology, Poland

NVH2 Automotive noise and vibration harshness

11:05 Acoustic development of a lightweight van

D. Vandenbroeck, LMS International NV, Belgium ; T. Beauvilain, Renault-Créos, France

11:30 Improvement of low-frequent humming in station wagons

K. Genuit, J. Poggenburg, HEAD acoustics GmbH, Germany

11:55 NVH assessment of vehicle design alternatives using FRF based substructuring

A. Queckenberg, G. Koners, Daimler-Benz AG, Germany

SID2 System identification

11:05 Second order systems in vibration theory

S.D. Garvey, Aston University, UK ; M.I. Friswell, University of Wales Swansea, UK ; J.E. Penny, Aston University, UK

11:30 High spatial resolution modal parameter estimation using a parametric MLE-like algorithm

S. Vanlanduit, P. Guillaume, J. Schoukens, VUB, Belgium

11:55 Modal parameter identification : Estimation of starting values for MLE-like algorithms

P. Verboven, P. Guillaume, M. Van Overmeire, VUB, Belgium

ETN1 Environmental and transportation noise

11:05 Experimental and numerical study on traffic-induced soil vibrations

T. Sanò, ANPA National Agency for Environmental Protection, Italy ; A. De Sortis, SSN National Seismic Survey, Italy ; D. Rinaldis, ENEA

National Agency for New Technologies, Energy and Environment, Italy

11:30 Free field vibrations during the passage of a HST

G. Degrande, K.U.Leuven, Belgium ; L. Schillemans, Technum N.V., Belgium

11:55 Noise map of the Madrid region

M. Recuero, C. Gil, V. Cutanda, A. Minguez, Universidad Politecnica de Madrid, Spain

SNVC2 Noise and vibration control : results of BRITE-EURAM projects

13:45 Experimental study of the active sound transmission reduction through a double panel test section*

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

14:10 Modal tuned damper for a horizontal axis 300kW wind turbine

T. Gh. Cioara, University "Politehnica" of Timisoara, Romania

14:35 Sensors and actuators optimisation for active noise reduction in an aircraft fuselage section*

L. De Vivo, A. Concilio, C.I.R.A. , Italy

15:00 Active control of sound transmission loss through a single panel partition using distributed actuators. Part I : simulations*

K. Henriouille, W. Dehandschutter, P. Sas, K.U.Leuven, Belgium

15:25 Active control of sound transmission loss through a single panel partition using distributed actuators. Part II : experiments*

W. Dehandschutter, K. Henriouille, P. Sas, K.U.Leuven, Belgium

TPA1 Transfer path analysis and source identification

13:45 Noise path analysis test methods

S.M. Dumbacher, D.L. Brown, University of Cincinnati, USA ; R. Merkel, The Modal Shop, USA

14:10 Strategy for transfer path analysis (TPA) applied to vibro-acoustic systems at medium and high frequencies

J. Plunt, Ingemansson Technology AB, Sweden

14:35 Location of sources of interior noise in railway carriages

J.E. Chance, I. Lopez, J. Nieto, J.M. Busturia, J. Viñolas, CEIT, Spain

15:00 Noise path analysis as a trouble shooting tool

P. Glibert, N. B. Moller, Bruël & Kjaer, Denmark ; E-U Saemann, Continental AG, Germany

TPV1 Test and product variability

13:45 Uncertainties in identified modal parameters

A. Perriot, J.L. Raynaud, S. Cogan, Université de Franche-Comté, France

14:10 Reasons for uncertainty and their consequence*

W. Teichert, Atos Netherlands, The Netherlands

14:35 Using fuzzy arithmetic for the modal behavior determination of structures defined by imprecise material parameters

B. Lallemand, A. Cherki, T. Tison, P. Level, Université de Valenciennes, France

15:00 Application of the fuzzy finite element method in structural dynamics

D. Moens, D. Vandepitte, K.U.Leuven, Belgium ; W. Teichert, Atos Netherlands, The Netherlands

VAMT4 Vibro-acoustic modelling and testing

13:45 Improvement of sound transmission loss of a wall by facial treatments

G. Birlık, METU, Turkey

14:10 Linear and non linear frequency-wavenumber spectral estimation of the wall pressure field beneath a turbulent boundary layer

G. Giovannelli, CNRS, France ; M. Pognant, IUT de Toulon, France ; B.E. Forestier, CNRS, France

14:35 Vibroacoustic behaviour of novel sandwich structures with negative Poisson's ratio core

F. Scarpa, G. Tomlinson, The University of Sheffield, UK

15:00 Structural/acoustic interaction in air-conditioning ducts in the presence of mean flow

R. Kirby, A. Cummings, University of Hull, UK

15:25 Energy flow of an acoustic wave scattered by a resonant elastic cylinder in a layer of liquid

A. Zinoviev, University of Adelaide, Australia ; V. Belov, Institute of Applied Physics, Russia

CIV11 Dynamic behaviour of civil structures

13:45 Structural damage detection in cracked reinforced concrete by dynamic system identification*

J.M. Ndambi, J. Vantomme, Royal Military Academy, Belgium ; J. De Visscher, W.P. De Wilde, V.U.B., Belgium ; B. Peeters, M.A. Wahab, G. De

Roeck, K.U.Leuven, Belgium

14:10 Comparison of system identification methods using operational data of a bridge test*

B. Peeters, G. De Roeck, K.U.Leuven, Belgium ; L. Hermans, LMS International NV, Belgium ; T.

Wauters, K.U.Leuven, Belgium ; C. Krämer, C. de

Smet, EMPA, Switzerland

14:35 Dynamic insitu-testing and FE-modelling of bridge Warth/Austria*

R.G. Flesch, B. Stebernjak, B. Freytag, Graz University of Technology, Austria

15:00 Damage detection in reinforced concrete structures by dynamic system identification*

J. Maeck, M. Abdel Wahab, G. De Roeck, K.U.Leuven, Belgium

15:25 Health monitoring of structures - towards a stethoscope for bridges*

G.P. Roberts, A.J. Pearson, WS Atkins Science & Technology, U.K.

NVC2 Noise and vibration control

16:15 Active control of industrial diesel engine exhaust noise

W. von Heesen, L. Verschueren, DMT-Gesellschaft für Forschung und Prüfung mbH, Germany ; N.

Dalpis, Discom B.V., The Netherlands ; T. Moritz,

Keba Ges.m.b.H., Austria

16:40 Development of an active exhaust silencer for internal combustion engines

R. Boonen, P. Sas, K.U.Leuven, Belgium

17:05 Adaptive design of a unidirectional source in a duct

V. Välimäki, Helsinki university of Technology, Finland ; S. Uosukainen, VTT Building Technology,

Finland

17:30 Optimal design of base isolated active controlled MDOF structures

Y. Ribakov, J. Gluck, Technion, Israel

DAMA1 Damage detection and monitoring : applications and sensors

16:15 Smart diagnosis of structural damage for systems with distributed sensors and actuators

C.-P. Fritzen, D. Jennewein, D. Buchen, University of Siegen, Germany

16:40 Detection and tracking of rubbing phenomena in seals and journal bearings using filter

banks and wavelets applied in continuous machine health monitoring

O. Døssing, ROVSING Dynamics, Denmark

17:05 Fault diagnosis of rotating machinery through visualization of sound signals

K. Shibata, A. Takahashi, T. Shirai, Takasago Thermal Engineering Co. Ltd, Japan

17:30 A design of sensor for the vibro-acoustic diagnostics of defects in drive shaft bearings on rail vehicles

K. Weiland, Deutsche Bahn AG, Germany

MUC2 Model updating and correlation

16:15 On the reliability of error localization indicators*

R. Pascual, J.C. Golinval, M. Razeto, Université de Liège, Belgium

16:40 Modal testing, FE analysis and FE model correlation of a 600 tonne post-tensioned concrete floor

P. Reynolds, A. Pavic, P. Waldron, University of Sheffield, UK

17:05 A comparison of FRF based error localisation methods

H. Algrain, P. Dehombreux, C. Conti, Faculté Polytechnique de Mons, Belgium

17:30 Homogenization method for beam-like structures

S. Corn, J. Piranda, N. Bouhaddi, Université de Franche-Comté, France

ISP1 Instrumentation and signal processing

16:15 Acoustic holography in non stationary conditions

J.-L. Chauray, B. Béguet, MICROdB, France

16:40 Holographic modal analysis with high spatial resolution

C. Haberstock, R. Freymann, W. Honsberg, BMW AG, Germany

17:05 Order tracking using Vold-Kalman order tracking filter

S. Gade, H. Herlufsen, H. Konstantin-Hansen, Bruël & Kjaer, Denmark ; H. Vold, D. Corwin-Renner,

Vold Solutions Inc., USA

17:30 The integration of VXI data acquisition into Matlab

W.A. Fladung, A.W. Phillips, D.L. Brown, University of Cincinnati, USA ; N. Olsen, Hewlett Packard,

USA ; R. Lurie, The Mathworks, USA

NOLI2 Non-linearities

16:15 Identification of hysteretic systems using the differential evolution algorithm

A. Kyprianou, K. Worden, The University of Sheffield, UK

16:40 Identification of nonlinear phenomena in a stochastically excited beam system with impact*

A. de Kraker, N. van de Wouw, H.L.A. van den Bosch, D.H. van Campen, Eindhoven University of Technology, The Netherlands

17:05 Use of the wavelet transform for the processing of mechanical signals*

P. Argoul, CNRS-LCPC, France ; H.P. Yin, CERAM, France ; B. Guillermin, DDSS, France

17:30 Simple methods and insights to deal with nonlinear distortions in FRF-measurements*

J. Schoukens, VUB, Belgium ; J. Swevers, K.U.Leuven, Belgium ; J. De Cuyper, LMS International NV, Belgium ; Y. Rolain, VUB, Belgium

17:55 Self-demodulation of acoustic pulses due to intrinsic nonlinearity of a built-of-contact medium: experiment and theory

*V.E.Nazarov, A.B.Kolpakov, Institute of Applied Physics, Russian Academy of Science, Russia ;
V.Yu.Zaitsev, Institute of Applied Physics, Russian*

Academy of Science, Visiting researcher at K.U.Leuven, Belgium

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Friday September 18, 1998

VNTC2 Vibration and noise testing : Case studies

9:00 Finite element impact simulation of vibrating beams

D. Szwedowicz, CENIDET, Mexico

9:25 Modal analysis of helicopters - the experiment conditions

W. Lisowski, T. Uhl, University of Mining and Metallurgy, Poland ; A. Wasilak, PZL, Poland

9:50 Experimental design for vibration analysis on agricultural spraying machines

L. Clijmans, J. Swevers, J. De Baerdemaeker, H. Ramon, K.U.Leuven, Belgium

10:15 Vibration analysis of rotating beam structures

Kuo Mo Hsiao, National Chiao Tung University, Taiwan, R.O.C.

DAMA2 Damage detection and monitoring : applications and sensors

9:00 Hearing cracks in a vibrating rod

A. Colonnello, A. Morassi, University of Udine, Italy

9:25 Diagnosis based on condition monitoring of fluid-dynamic abnormal performance of centrifugal pumps

J.L. Parrondo, S. Velarde, J. Pistono, R. Ballesteros, Universidad de Oviedo, Spain

9:50 Vibroacoustic analysis for failure detection and condition assessment in Diesel engines predictive maintenance

J. Pistono, J. Martínez-Calle, J. Parrondo, Universidad de Oviedo, Spain

MUC3 Model updating and correlation

9:00 Updating modal models from response measurements

R.B. Randall, Y. Gao, UNSW, Australia ; J. Swevers, K.U.Leuven, Belgium

9:25 Finite element connectivities from vibration measurements*

J. E. Mottershead, The University of Liverpool, UK

9:50 Identification of gas flow pressure forces in a cavity using an inverse method

E. Dascotte, J. Strobbe, Dynamic Design Solutions, Belgium

10:15 A new scaled modal assurance criterion for eigenmodes containing rotational degrees of freedom

E. Brechlin, K. Bendel, W. Keiper, Robert Bosch GmbH, Germany

VAMT5 Vibro-acoustic modelling and testing

9:00 Hybrid Modal Analysis (HMA) applied to a real aircraft structure

S. Papadia-Einarsson, M. Dalenbring, The Aeronautical Research Institute of Sweden, Sweden

9:25 Prediction of propeller-induced interior sound fields in aircraft

M. Petyt, University of Southampton, UK ; J. Wei, Arvin Exhaust R&D, UK

9:50 Vibro-acoustic assessment of a multi-vehicle payload configuration using a boundary element modeling technique

J.E. Phillips, Wilson, Ihrig and Associates, Inc., USA ; B.H. Wendler, The Aerospace Company, USA

10:15 Influence of the constructional modifications of gearbox housing onto its vibroacoustic properties

V. Misun, K. Prikryl, TU Brno, Czech Republic

NVC3 Noise and vibration control

9:00 Active vibration control of a cantilever beam : experimental verification of different controller designs

A. Lay, B-H Kröplin, Universität Stuttgart, Germany

9:25 Algorithms for feedback active noise control and narrowband disturbances

M. Bodson, University of Utah, USA

9:50 Test setup for active vibration control with piezoelectric actuators and sensors

A. Lay, B-H. Kröplin, Universität Stuttgart, Germany

VNTC3 Vibration and noise testing : Case studies

11:05 An experimental study on the transverse vibration of a power transmission belt

F. Pellicano, Università di Modena, Italy ; A. Fregolent, A. Bertuzzi, Università di Roma "La Sapienza", Italy

11:30 Vibrations in household appliances with rolling element bearings

R.T.W.M. Hendriks, G.C. van Nijen, P. Dietl, SKF Engineering & Research Centre B.V., The Netherlands

11:55 Vibration and noise reduction of small gasoline engine with optimization of valve mechanism

T. Koizumi, N. Tsujiuchi, M. Okamura, Doshisha University, Japan ; I. Kubomoto, E. Ishida, T. Iritani, Kubota corp., Japan

DAMA3 Damage detection and monitoring : applications and sensors

11:05 Bearing diagnostics by digital analysis techniques in high background noise situations*

R.B. Randall, D. Ho, Y. Gao, UNSW, Australia

11:30 Reconstruction of cylinder pressure time trace on a six-cylinder engine from acceleration measurements

G. Zurita, A. Ågren, Luleå University of Technology, Sweden ; R.B. Randall, Y. Gao, The University of New South Wales, Australia

11:55 Delamination detection and characterisation by laser Doppler techniques

P. Castellini, G.M. Revel, Università degli studi di Ancona, Italy

MUC4 Model updating and correlation

11:05 A fuzzy approach to dominant modelling errors localization using uncertain experimental data

A. Cherki, B. Lallemand, T. Tison, P. Level, Université de Valenciennes, France

11:30 Finite element model updating procedure and its application for helicopter tail boom

T. Uhl, W. Bochniak, W. Lisowski, University of Mining and Metallurgy, Poland ; H. Van der Auweraer, L. Hermans, LMS International, Belgium ;

J. Malecki, PZL WSK Swidnik, Poland

11:55 The test-analysis integration process applied to connection-weld modeling

T. Van Langenhove, LMS International NV, Belgium ; D. Turner, Matra BAE, UK

SID3 System identification

11:05 Experimental analysis of the dynamic behavior of piping systems having unknown boundary conditions

S. Frikha, Université de Paris 6, France ; G. Coffignal, M. Ghouidi, ENSAM, France ; M. Gaudin, EDF, France

11:30 Estimation of in-flight structural dynamics models of a spacecraft launcher

L. Hermans, H. van der Auweraer, LMS International NV, Belgium ; M. Goursat, A. Benveniste, INRIA, France ; D. Haerens, AeroSpatiale, France ;

P. Mourey, CNES, France

11:55 Experimental determination of rolling element bearing stiffness

A. de Kraker, R.J.W. Knaapen, L. Kodde, D.H. van Campen, Eindhoven University of Technology, The Netherlands

NVC4 Noise and vibration control

11:05 Application of fuzzy logic control strategy in a novel active suspension

J. Gao, N.J. Leighton, C. Morgan, University of Wolverhampton, UK

11:30 Active electro-pneumatic suspension system

G.J. Stein, Slovak Academy of Sciences, Slovakia

11:55 Improvement of road vehicles ride comfort with active vibratory isolation of a car seat suspension - modelisation aspects and experimental results

J. Périsse, P. Perrard, L. Jézéquel, Ecole centrale de Lyon, France ; J.M. Judic, P. van Effenterre, Bertrand Faure Equipements, France

SNVC3 Noise and vibration control : results of BRITE-EURAM projects

13:45 Evaluation of a multi- versus a single-reference MIMO ANC algorithm on Dornier 328 test data set*

S. Johansson, S. Nordebo, T.L. Lagö, P. Sjösten, I. Claesson, University of Karlskrona/Ronneby, Sweden ; I.U. Borchers, K. Renger, Daimler-Benz

Aerospace Dornier, Germany

14:10 Linking test and analysis results in the medium frequency range using principal field shapes*

H. Van der Auweraer, M. Iadevaia, LMS International NV, Belgium ; U. Emborg, M. Gustavsson, SAAB AB, Sweden ; U. Tengzelius, N. Horlin, FFA, Sweden

14:35 A comparison of techniques for the active control of noise and vibration in aircraft*

C.F. Ross, Ultra Electronics - Noise and Vibration Systems, UK

DAMA4 Damage detection and monitoring : applications and sensors

13:45 Vibration measurement and signature analysis as a diagnostic tool for rotating machines in cane sugar industries - some case studies

S.P. Chavan, G.D. Bhide, Walchand College of Engineering, India

14:10 Effects of V-notch on the natural frequencies of E-glass/epoxy composite cantilever beams

M. Peter Arun, P. Radhaswamy, V. Marimuthu, V. Baskar, P. Baskaran, Madras Institute of Technology Anna University, India

14:35 Mutual information approach to sensor location for impact damage detection of composite structures

C.S. Wong, W.J. Staszewski, University of Sheffield, UK

VNT2 Vibration and noise testing

13:45 Experimental technique for transverse chain vibration measurements

C. Van Karsen, Michigan Technological University, USA ; K. Maisonville, Borg-Warner Automotive Inc., USA

14:10 An overview of MIMO-FRF excitation/averaging techniques

A.W. Phillips, R.J. Allemang, A.T. Zucker, University of Cincinnati, USA

14:35 Some observations regarding the nonlinearity of person/seat response functions

J. Giacomini, F. Scarpa, L. Caretto, The University of Sheffield, UK

ROT2 Rotating machinery

13:45 Oscillations and stability of rotating bodies

V.P. Matveyenko, I.N. Shardakov, N.A. Shevelev, S.M. Borzenkov, Institute of Continuous Media Mechanics, Russia

14:10 Reduction of rotating shaft finite element models for eigenvalue analysis

M. Rades, Institute Politehnica of Bucharest, Romania

14:35 Experimental modal analysis of rotating elastic structures

H. Irrerier, University of Kassel, Germany

ETN2 Environmental and transportation noise

13:45 Deck track, vibrations at the new rail track concept

H.G. Stuit, Holland Railconsult, The Netherlands

14:10 Design of low noise embedded tracks for new tram line to Zwijndrecht

P. Vanhonacker, D2S International, Belgium ; E. Hemerijckx, De Lijn, Belgium

14:35 The vibro-acoustic modelling of slab track with embedded rails

A.A. van Lier, NS Technical Research, The Netherlands

* = invited paper

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Visual presentations

Is the statistical index LA95 a good estimator of the particular noise level of a stable source in presence of perturbing noise events?

B. Renglet, P. Chapelle, C. Couvreur Faculté Polytechnique de Mons, Belgium

Detection of hip stem loosening by vibration analysis

I. Denayer, G. Van der Perre, K.U.Leuven, Belgium

Mechanism of vibration energy dissipation in flange bolted joints

J. Krzyzanowski, W. Skoczynski, K. Augul Wroclaw University of Technology, Poland

Development of a metric to quantify diesel engine irregularities

G. Lowet, P. Van de Ponsele LMS International NV, Belgium S. Pauwels, T. Van

Wayenberge, P. Sas K.U.Leuven, Belgium

Model order and structure estimation of a multivariate stochastic process

J. Lardies, N. Larbi University of Franche-Comté, France

A method to derive the four-pole parameters including the effects of mean-flow and temperature gradient

T. Nishimura, T. Ando, T. Ikeda Kamamoto institute of Technology, Japan

Non-linear normal modes of a continuous system

M.I. Qaisi University of Jordan, Jordan

Time-frequency distribution of vibration and noise measured on rotating machinery

K. Vokurka Technical University of Liberec, Czech republic

Landscape in relation to soundscape in urban areas

S. Viollon, C. Lavandier IUT University of Cergy Pontoise, France