

VIII International Conference on Recent Advances in Structural Dynamics

PROVISIONAL TECHNICAL PROGRAMME

**Institute of Sound and Vibration Research
University of Southampton
Southampton, United Kingdom**

14-16 July 2003

Monday 14 July, Morning

08:40 Opening session

09:00 Plenary session

Three Decades' Interesting Experience in Nonlinear Finite Element Formulation Development and Aerospace Applications (1)
Mei, C., *Department of Aerospace Engineering, Old Dominion University, Norfolk, VA, USA*

09:50 Coffee and tea break

Session 1	Session 2	Session 3
AERODYNAMICS & FLUTTER	ACTIVE CONTROL I	FINITE ELEMENT METHODS I
Session Chairman: <i>TBC</i>	Session Chairman: <i>TBC</i>	Session Chairman: <i>TBC</i>
10:20 Buffet Experience Over 44 Years and Continuing! (6) Ferman, M.A., <i>Parks College of Engineering and Aviation, St Louis University, USA</i>	10:20 Active Vibration Control of a Human Body-Seat-Boat-Water Dynamic Interaction System Excited by Waves (11) Xiong, Y.P., Xing, J.T. and Price, W.G., <i>School of Engineering Sciences, University of Southampton, UK</i>	10:20 A Hierarchical Finite Element for Large Amplitude Vibration of Moderately Thick Curved Beams (18) Ribeiro, P., <i>IDMEC/DEMEGI, Faculdade de Engenharia da Universidade do Porto, Portugal</i>
10:40 Limit Cycle Prediction for Subsonic Aeroelastic Systems using Nonlinear System Identification (7) Dimitriadis, G., Vio, G.A. and Cooper, J.E., <i>School of Engineering, University of Manchester, UK</i>	10:40 Semi-Active Vibration Isolation using an Electromagnetic Damper (12) Liu, Y., Waters, T.P. and Brennan, M.J., <i>ISVR, University of Southampton, UK</i>	10:40 Reduced-Order Nonlinear Modal Equations of Plates Based on the Finite-Element Method (19) Harada, A., Kobayashi, Y. and Yamada, G., <i>Division of Mechanical Science, Graduate School of Engineering, Hokkaido University, Japan</i>
11:00 Non-Gaussian PDF Modeling of Turbulent Boundary Layer Fluctuating Pressure Excitation (8) Steinwolf, A. and Rizzi, S.A., <i>Department of Mechanical Engineering, The University of Auckland, New Zealand</i>	11:00 Optimization of Damper Parameters of Semi-Actively Controlled Building Frames using Fuzzy Logic (13) Bhardwaj, M.K. and Datta, T.K., <i>School of Engineering and Technology, Indira Gandhi National Open University, New Delhi, India</i>	11:00 Random Eigenvalue Problems of Engineering Systems (20) To, C.W.S., <i>Department of Mechanical Engineering University of Nebraska, USA</i>
11:20 Tools to Improve Detection of Structural Changes from In-Flight Flutter Data (9) Scionti, M., Lanslots, J., Goethals, I., Vecchio, A., Van der Auweraer, H., Peeters, B. and De Moor, B., <i>Department of Industrial and Mechanical Engineering, Catania Univ, Italy</i>	11:20 Active Loudspeaker Tuning for Noise Reduction in a Payload Fairing (14) Kemp, J.D., McEver, M.A. and Clark, R.L., <i>Acentech, Inc. / Duke University, USA</i>	11:20 Buckling and Vibration Analysis of Initially Stressed Composite Sandwich Plates (21) Nayak, A.K., Moy, S.S.J. and Shenoi, R.A., <i>School of Civil and Environmental Engineering, University of Southampton, UK</i>
11:40 Detecting Parametric Variations based on Coherent Structure Identification (10) Epureanu, B.I., Tang, L.S. and Païdoussis, M.P., <i>Department of Mechanical Engineering, University of Michigan, USA</i>		11:40 Shape, Motion and Material Characteristics Identification for Elastically Deformable Vibrating Structures from Orthographic Projections (22) Provatidis, C.G. and Venetsanos, D.T., <i>Laboratory of Structures and Dynamics, Mechanical Design and Control Systems Section, National Technical University of Athens, Greece</i>

12:10 Plenary session

Towards a Practical Characterisation for Sources of Structure-Borne Sound (2)
Gibbs, B.M., *Acoustics Research Unit, Liverpool University, UK*

13:00 Lunch

Monday 14 July, Afternoon, part I

Session 4

NON LINEAR VIBRATION I

Session Chairman: *TBC*

14:00

Passive Nonlinear Energy Pumping in Coupled Oscillators (25)

Vakakis, A.F., Manevitch, L.I., Gendelman, O. and Bergman, L., *Division of Mechanics, National Technical University of Athens, Greece and Department of Mechanical and Industrial Engineering, University of Illinois, USA.*

14:20

Chaotic Oscillations of a Buckled-Beam Constrained by an Axial Spring (Interaction between Dynamic Snap-Buckling and Internal Resonance) (26)

Nagai, K., Suzuki, H., Yamaguchi, T. and Maruyama, S., *Department of Mechanical Engineering, Gunma University, Japan*

14:40

The Dynamics of Mode Jumping in Thermally Buckled Plates (27)

Virgin, L.N. and Chen, H., *Pratt School of Engineering, Duke University, Durham, USA*

15:00

Normal Modes of a Continuous System with Quadratic and Cubic Non-Linearities (28)

Qaisi, M., *Mechanical Engineering, University of Jordan, Jordan*

15:20

Explicit Analytical Solutions for the Non-Linear Mode Shapes and Resonant Frequencies of Some Thin Structures with a Simple Geometry (29)

El Kadiri, M. and Benamar, R., *Laboratoire d'Etudes et de Recherches en Simulation, Instrumentation et Mesures, EGTEMI, Universite Mohammed V, Rabat, Morocco*

Session 5

NUMERICAL METHODS

Session Chairman: *TBC*

14:00

Analogies Between Transcendental and Linear Eigenproblems (37)

Kennedy, D., Williams, F.W. and Yuan, S., *Cardiff School of Engineering, Cardiff University, Wales*

14:20

Optimal Distribution of Unconstrained Viscoelastic Damping Layer for a Flexible Beam Using Eigensensitivity (38)

Kim, T-W and Kim J-H, *School of Mechanical and Aerospace Engineering, Seoul National University, South Korea*

14:40

Large Amplitude Vibrations of Timoshenko Beams Subjected to Thermal Loading (39)

Manoach, E., *Institute of Mechanics, Bulgarian Academy of Sciences, Sofia, Bulgaria*

15:00

Responses' Convergence in Time Integration of Nonlinear Semi-Discrete Equations of Motion (40)

Soroushian, A. and Farjoodi, J., *Department of Civil Engineering, Faculty of Engineering, University of Tehran, Iran*

15:20

Efficient Prediction of the Forced Response Statistics of Mistuned Bladed Discs (41)

Bah, M.T., Nair, P.B., Bhaskar, A. and Keane, A.J., *School of Engineering Sciences, University of Southampton, UK*

Session 6

PLATES & SHELLS I

Session Chairman: *TBC*

14:00

Periodic Orbit Calculations of Modecount Functions for Elastic Plates (42)

Wright, M.C.M., Howls, C.J. and Welch, B.A., *ISVR, University of Southampton, UK*

14:20

Exact Three-Dimensional Natural Vibration Analysis of a Piezoelectric Rectangular Plate (43)

Cupial, P., *Institute of Mechanics and Machine Design, Cracow University of Technology, Poland*

14:40

Free Vibration Analysis of Isotropic and Orthotropic Square Plates with a Hole (44)

Huang, M., Ma, X.Q., Sakiyama, T., Matsuda, H. and Morita, C., *Department of Structural Engineering, Nagasaki University, Japan*

15:00

The Mode Count and Modal Density of One-and-Two-Dimensional Systems: Relationships with Boundary Conditions (45)

Xie, G., Thompson, D.J. and Jones, C.J.C., *ISVR, University of Southampton, UK*

15:40 Coffee and tea break

Monday 14 July, Afternoon, part II

Session 7

NON LINEAR VIBRATION II

Session Chairman: *TBC*

16:00

Frequency Response Functions Based Parameter Identification from Short Data Sequences (30)

Cauberghe, B., Guillaume, P. and Verboven, P., *Mechanical Engineering Department, Vrije Universiteit Brussel, Belgium*

16:20

Multi-Frequency Oscillations of a Coulomb Damped Belt Drive System (31)

Cheng, G. and Zu, J.W., *Department of Mechanical & Industrial Engineering, University of Toronto, Canada*

16:40

Stabilization of Two-Degrees-of-Freedom Nonlinear Random Systems by the Statistical Nonlinearisation Technique (32)

To, C.W.S., *Department of Mechanical Engineering, University of Nebraska, USA*

17:00

The Effect of Large Vibration Amplitudes on the Mode Shapes and Natural Frequencies of Isotropic CCSSS Rectangular Plates (33)

El Bikri, K., Benamar, R. and Bennouna, M., *Laboratoire de Mecanique Appliquee et Technologie, ENSET-Rabat, Rabat Instituts, Morocco*

Session 8

ANALYTICAL METHODS

Session Chairman: *TBC*

16:00

Potentials of Recent Signal Processing Techniques to Structural Dynamics (49)

Antoni, J. and Sidahmed, M., *Laboratoire Roberval, University of Technology of Compiègne, Cedex, France*

16:20

A Comparison of Fast Algorithms for Least Squares High Order Multivariable Transfer Function Model Identification (50)

Verboven, P., Guillaume, P., Cauberghe, B., Vanlanduit, S. and Parloo, E., *Mechanical Engineering Department, Vrije Universiteit Brussel, Belgium*

16:40

Analytical Methods of Nonlinear Continuous Systems with Collision Characteristics (51)

Aoki, S. and Takeshi, W., *Department of Mechanical Engineering, Tokyo Metropolitan College of Technology, Japan*

17:00

Non Linear Flexural Vibrations of Thin Circular Rings: An Analytical Approach (52)

Rougui, M., Moussaoui, F. and Benamar, R., *Lersim, EGT,EMI, Agdal, Rabat, Morocco*

Session 9

ACTIVE CONTROL II

Session Chairman: *TBC*

16:00

Optimization of Structural Active Control using Penalty Function and Augmented Lagrange Multiplier Methods (15)

Amini, F. and Tavassoli, M.R., *Civil Engineering Department, Science and Technology University, Tehran, Iran*

16:20

Optimal Collocated and Multi-Variable Hybrid Active/Passive Vibration Control Design (16)

Kemp, J.D. and Clark, R.L., *Acentech, Inc. / Duke University, USA*

16:40

Active Control of Nonlinear Supersonic Panel Flutter using Piezoelectric Materials (17)

Abdel-Motagaly, K. and Mei, C., *Department of Aerospace Engineering, Old Dominion University, Norfolk, VA, USA*

17:30 Exhibitors' Reception

19:00 BBQ in Highfield Hall

Tuesday 15 July, Morning

09:00 Plenary session

Nonlinear Dynamics of Fluid-Structure Interaction of Very High Dimensional Systems (3)
Dowell E.H., *School of Engineering, Duke University, Durham, USA*

09:50 Coffee and tea break

Session 10	Session 11	Session 12
ACOUSTIC FATIGUE Session Chairman: <i>TBC</i>	INVERSE METHODS & SYSTEM IDENTIFICATION Session Chairman: <i>TBC</i>	MODELLING I Session Chairman: <i>TBC</i>
10:20 Nonlinear Response of a Clamped-Clamped Beam to Random Base Excitation (53) Gordon, R.W., Hollkamp, J.J. and Spottswood, S.M., <i>Structural Dynamics Branch, Air Force Research Laboratory, Wright Patterson, Ohio, USA</i>	10:20 The Effect of Variability on Engine Cylinder Pressure Reconstruction (58) Potenza, R. and Dunne, J.F., <i>School of Engineering and Information Technology, University of Sussex, Brighton, UK</i>	10:20 Structural Analysis of a Combined Beam and Plate Structure using a Wave Approach (63) Yoo, J.W., Thompson, D.J. and Ferguson, N.S., <i>ISVR, University of Southampton, UK</i>
10:40 Large Amplitude Response of Shallow Shell Panels to Acoustic Excitations (54) Przekop, A., Guo, X., Azzouz, M.S. and Mei, C., <i>Department of Aerospace Engineering, Old Dominion University, Norfolk, VA, USA</i>	10:40 Parametric and Nonparametric Identification of Nonlinear Systems (59) Wong, C.X. and Worden, K., <i>Dynamics Research Group, Department of Mechanical Engineering, University of Sheffield, UK</i>	10:40 Calculation of Noise from Railway Bridges: The Mobility of Beams at High Frequencies (64) Bewes, O., Thompson, D.J. and Jones, C.J.C., <i>ISVR, University of Southampton, UK</i>
11:00 Validation of Reduced Order Modeling for the Prediction of the Response and Fatigue Life of Panels Subjected to Thermo-Acoustic Effects (55) Mignolet, M.P., Radu, A.G. and Gao, X., <i>Department of Mechanical and Aerospace Engineering, Arizona State University, USA</i>	11:00 Force Identification for Nonlinear Structures (60) Doyle, J.F., <i>School of Aeronautics and Astronautics, Purdue University, Indiana, USA</i>	11:00 Bolted Joints under Dynamic Loading (65) Oldfield, M., Ouyang, H. and Mottershead, J.E., <i>Department of Engineering, University of Liverpool, UK</i>
11:20 On the Use of Equivalent Linearization for High-Cycle Fatigue Analysis of Geometrically Nonlinear Structures (56) Rizzi, S.A., <i>NASA Langley Research Center, Hampton, USA</i>	11:20 Forces and Responses Generated by a Human Subject Swaying on a Flexible Structure (61) Yao, S., Wright, J., Yu, C-H, Pavic, A. and Reynolds, P., <i>School of Engineering, University of Manchester, UK</i>	11:20 Energy Density Considerations in the Frequency Trimming of Vibrating Rings (66) Eley, R., Fox, C. and McWilliam, S., <i>School 4M, University of Nottingham, UK</i>
11:40 A Preliminary Application of the PDF Transfer Function to Fatigue Calculations for Nonlinear Systems (57) Sweitzer, K.A., Veltri, M., Kerr, S.C. and Bishop, N.W.M., <i>Eastman Kodak Co, Rochester, New York, USA</i>	11:40 Measurement Location Selection to Improve Inverse Force Determination (62) Thite, A.N. and Thompson, D.J., <i>ISVR, University of Southampton, UK</i>	11:40 Detection of Damage Through Analysis of Structures with Bilinear Stiffness (67) Haywood, J. and Worden, K., <i>Dynamics Research Group, Department of Mechanical Engineering, University of Sheffield, UK</i>

12:10 Plenary session

Predictability of Mid and High Frequency Dynamic Properties of Industrial Products. Using Simplified Modelling and NVH Design Strategy (4)
Plunt, J., *Ingemansson Technology AB, Gothenburg, Sweden*

13:00 Lunch

Tuesday 15 July, Afternoon, part I

Session 13

STRUCTURAL ACOUSTICS I

Session Chairman: *TBC*

14:00

Structural Acoustics of Partially Open Enclosures (72)

Prager, J. and Petersson, B.A.T., *Institute of Technical Acoustics, Technical University, Berlin*

14:20

Investigation on Structural-Acoustic Sensitivity of Ship Cabin Model by FEM/BEM (73)

Shen, R., Xu, Z. and Hua, H., *State Key Laboratory of Vibration, Shock and Noise, Shanghai Jiao-Tong University, PR of China*

14:40

Complex Envelope Vectorization: A New Approach to Vibro-Acoustic Problems (74)

Carcattera, A. and Sestieri, A., *Dipartimento di Meccanica ed Aeeronautica, University of Rome, Italy*

15:00

Vibration of Coupled Long-and-Short-Wavelength Substructures: A Mode-Based Approach (75)

Ji, L., Mace, B.R. and Pinnington, R.J., *ISVR, University of Southampton, UK*

Session 14

MODELLING II

Session Chairman: *TBC*

14:00

Frequency Splitting in Circular Rings Due to Small Axial Thickness Variations (68)

Rourke, A., Fox, C., McWilliam, S. and Qian, Z., *School of Mechanical, Materials, Manufacturing Engineering and Management, University of Nottingham, UK*

14:20

Equations of Motion and Steady State Solution of Three Dimensional Rotating Timoshenko Beam (69)

Hsiao, K-M., *Department of Mechanical Engineering, National Chiao Tung University, Taiwan*

14:40

A General Theoretical Model for Damping (70)

Goyder, H.G.D., *Engineering Systems Department, Cranfield University, UK*

15:00

Mobility of Box-Like Structures (71)

Liang, J. and Petersson, B.A.T., *Department of Aeronautical and Automotive Engineering, Loughborough University, UK*

Session 15

FINITE ELEMENT METHODS II

Session Chairman: *TBC*

14:00

A Computational Framework for the Separation of Material Systems (23)

Choi, S-W. and Doyle, J.F., *School of Aeronautics and Astronautics, Purdue University, Indiana, USA*

14:20

Frequency Analysis and Transient Response of Two-Dimensional Structures using Coons-Patch Macroelements (24)

Provatidis, C., *Laboratory of Structures and Dynamics, National Technical University of Athens, Greece*

Session 16

MODEL VALIDATION & PARAMETER ESTIMATION

Session Chairman: *TBC*

14:40

A Computational Toolbox for the Validation of Structural Dynamics Models (79)

Bement, M.T., Doebling, S.W., Hemez, F.M. and Anderson, M.C., *Engineering Sciences and Applications Division, Los Alamos National Laboratory, New Mexico, USA*

15:00

Elimination of Multi-Sine Background Disturbances from Measurement Spectra (80)

Vanlanduit, S., Guillaume, P. and Cauberghe, B., *Department of Mechanical Engineering (WERC), Vrije Universiteit Brussel, Belgium*

15:20 Coffee and tea break

Tuesday 15 July, Afternoon, part II

Session 17

STRUCTURAL ACOUSTICS II

Session Chairman: *TBC*

15:40

Analytical Model of a Wall Acoustic Impedance and Experimental Data (76)

Faverjon, B. and Soize, C., *Structural Dynamics and Coupled Systems Department, ONERA, France*

16:00

Development of an Efficient Binaural Simulation for the Analysis of Structural Acoustic Data (77)

Johnson, M.E., Lalime, A.L., Grosveld, F.W., Rizzi, S.A. and Sullivan, B.M., *Department of Mechanical Engineering, Virginia Tech, Virginia, USA*

16:20

Effect of a Free-Surface Fluid Layer on Vibroacoustic Response of a Plate (78)

Genevaux, J-M., *Laboratoire d'Acoustique de L'Université du Maine, Le Mans, France*

Session 18

TRANSPORTATION / GROUND VIBRATION

Session Chairman: *TBC*

15:40

Vibration of Bridges under High Speed Trains (81)

Fryba, L. and Fischer, C., *Institute of Theoretical and Applied Mechanics, Academy of Sciences of the Czech Republic, Prague*

16:00

A Discrete Wavenumber Coupled with Finite and Boundary Element Model for Ground Vibration from Tunnels (82)

Sheng, X., Jones, C.J.C. and Thompson, D.J., *ISVR, University of Southampton, UK*

16:20

Seismic Risk Analysis of Cable Stayed Bridges (83)

Khan, R.A., Datta, T.K. and Ahmad, S., *Department of Applied Mechanics, I.I.T. – Delhi, New Delhi, India*

Session 19

NON LINEAR VIBRATION III

Session Chairman: *TBC*

15:40

Non-Linear Stability Analysis Based on the Center Manifold Approach, the Pade Approximants and the Alternate Frequency/Time Domain Method (34)

Sinou, J-J., Thouverez, F. and Jézéquel, L., *Laboratoire de Tribologie et Dynamique des Systemes, Ecole Centrale de Lyon, France*

16:00

Nonlinear Dynamics of Two Point Mooring System in Surge Motion (36)

Banik, A.K. and Datta, T.K., *Department of Civil Engineering, Indian Institute of Technology, New Delhi, India*

16:20

Models for Railway Curve Squeal Noise (35)

Monk-Steel, A. and Thompson, D.J., *ISVR, University of Southampton, UK*

17:45 Conference dinner, HMS Warrior

Wednesday 16 July, Morning

09:00 Plenary session

Autoresonant Systems and Phase Control of Nonlinear Vibration (5)

Babitsky, V., *Wolfson School of Mechanical and Manufacturing Engineering, Loughborough University, UK*

09:50 Coffee and tea break

Session 20	Session 21	Session 22
ENERGY METHODS	CONDITION MONITORING & DIAGNOSTICS	WAVE MOTION
Session Chairman: <i>TBC</i>	Session Chairman: <i>TBC</i>	Session Chairman: <i>TBC</i>
10:20 The Second Principle of Thermodynamics in Vibrations (84) Carcattera, A., <i>Department of Mechanics and Aeronautics, University of Rome, Italy</i>	10:20 Detecting Cracks in Damaged Beams Through Derivatives and Wavelets (88) Gentile, A. and Messina, A., <i>Dipartimento di Ingegneria dell'Innovazione, Universita di Lecce, Italy</i>	10:20 Axisymmetric Wave Propagation in Elastic, Fluid-Filled Pipes: Wavenumber Measurements on an In-Vacuo and a Buried Pipe (96) Muggleton, J.M., Brennan, M.J. and Linford, P.W., <i>ISVR, University of Southampton, UK</i>
10:40 Estimation Method for Response Energy of System Subjected to Earthquake Excitations (85) Aoki, S., <i>Department of Mechanical Engineering, Tokyo Metropolitan College of Technology, Japan</i>	10:40 The Detection of Production Faults in DC Electro Motors (89) Simonovski, I., Furlan, M. and Boltežar, M., <i>Faculty of Mechanical Engineering, Ljubljana, Slovenia</i>	10:40 Wave Propagation in Fluid-Filled Viscoelastic Pipes (97) Prek, M., <i>Faculty of Mechanical Engineering, University of Ljubljana, Slovenia</i>
11:00 High Frequency Vibration Analysis of Curved Beam Structures by using the Ray Tracing Method (86) Jeong, C-H. and Ih, J-G., <i>Department of Mechanical Engineering, Korea Advanced Institute of Science and Technology, Korea</i>	11:00 Scattering of Elastic Waves by Cracks in Steel Pipes (90) Mahmoud, A-R., Popplewell, N. and Shah, A., <i>Mechanical and Industrial Engineering Department, University of Manitoba, Canada</i>	11:00 Real Wave-Vectors for Dynamic Analysis of Periodic Structures (98) Luongo, A. and Romeo, F., <i>Dipartimento di Ingegneria delle Strutture, Universita di L'Aquila, Italy</i>
11:20 A Mid-Frequency Selective Approach for Wave-Based Methods (87) Bareille, O., Ichchou, M.N. and Jezequel, L., <i>LTDS – Ecole Centrale de Lyon, France</i>	11:20 The Modal Response of a Partially Buried Rigid Post (91) Waters, T.P., Brennan, M.J. and Sasananan, S., <i>ISVR, University of Southampton, UK</i>	11:20 Scattering Matrix of a Stiffener Elastically Connected to a Plate (99) Gautier, F., Moulet, M-H and Pascal, J-C., <i>Laboratoire d'Acoustique de l'Universite du Maine, Le Mans, France</i>

12:00 Lunch

Wednesday 16 July, Afternoon, part I

Session 23

CONDITION MONITORING & DIAGNOSTICS II

Session Chairman: *TBC*

13:00

Auto-Associative Neural Networks, Part I : Replacement of Missing Sensor Values (92)

Kerschen, G. and Golinval, J-C., *Department of Identification des Structures (VIS), University of Liege, Belgium*

13:20

Auto-Associative Neural Networks, Part II: Feature Extraction for Non-Linear Model Updating (93)

Kerschen, G. and Golinval, J-C., *Department of Identification des Structures (VIS), University of Liege, Belgium*

13:40

Sensor Optimisation using an Ant Colony Metaphor (94)

Overton, G. and Worden, K., *Dynamics Research Group, Department of Mechanical Engineering, University of Sheffield, UK*

14:00

Structural Damage Assessment Based on Dynamic Data Using Genetic Algorithms (95)

Lu, Y. and Tu, Z., *School of Civil and Environmental Engineering, Nanyang Technological University, Singapore*

Session 24

STRUCTURAL UNCERTAINTY

Session Chairman: *TBC*

13:00

Applying Information-Gap Reasoning to the Predictive Accuracy Assessment of Transient Dynamics Simulations (100)

Hemez, F.M., Doebling, S.W. and Ben-Haim, Y., *Engineering Sciences and Applications, Los Alamos National Laboratory, New Mexico, USA*

13:20

A Substructure Approach to Power Flow Analysis and Application to Engineering Structures (101)

Xing, J.T., Price, W.G. and Wang, Z.H., *School of Engineering Sciences, University of Southampton, UK*

13:40

The Effects of Random Mass Imperfections on the Statistical Distribution of Natural Frequency Splitting of Ring Structures (102)

McWilliam, S., Ong, J. and Fox, C., *School of Mechanical, Materials, Manufacturing Engineering and Management, University of Nottingham, UK*

14:00

Localisation in a Two Span Beam with Moving Central Support (103)

Bridge, J., *Department of Mechanical Engineering, The University of the West Indies, St. Augustine, Trinidad*

Session 25

WORK-IN-PROGRESS I

Session Chairman: *TBC*

13:00

The Response of Structures with Uncertain Joint Properties: A Component Modal Approach (WIP 1)

Stenti, A., Mace, B.R. and Sas, P., *Department of Mechanical Engineering, Katholieke Universiteit, Leuven, Belgium*

13:15

The Effects of a Nearfield on the Performance of Tunable Vibration Absorbers on a Beam (WIP 2)

El-Khatib, H.M., Mace, B.R. and Brennan, M.J., *ISVR, University of Southampton, UK*

13:30

A Concept for a Variable Geometry Rhomboid Wing Design (WIP 3)

Ferman, M.A., *Parks College of Engineering and Aviation, St Louis University, USA*

13:45

Structural and Damping Properties of Intrinsically Damped Composite Laminates (WIP 4)

Liguore, S.L., *The Boeing Company, St. Louis, USA*

14:00

Transmission of Vibration in Bearing-Connected Structures (WIP 5)

Cermelj, P., Tavcar, J. and Boltežar, M., *Faculty of Mechanical Engineering, University of Ljubljana, Slovenia*

14:20 Coffee and tea break

Wednesday 16 July, Afternoon, part II

Session 26

IMPACT DYNAMICS

Session Chairman: *TBC*

14:40

Models for Vibro-Impact Monodimensional System and Determination of Loss Factor (104)

Manconi, E. and Garziera, R., *Industrial Engineering Department, University of Parma, Italy*

15:00

Analytical Method for Reduction of Residual Stress of Welded Joint using Vibration (105)

Aoki, S., Nashimura, T. and Hiroi, T., *Department of Mechanical Engineering, Tokyo Metropolitan College of Technology, Japan*

15:20

The Mean Poincaré Map on a Class of Random Vibro-Impact System (106)

Feng, Q. and He, H., *Department of Engineering Mechanics, Tong Ji University, Shanghai, PR of China*

Session 27

PLATES & SHELLS II

Session Chairman: *TBC*

14:40

Modelling the Dynamics of Freely Vibrating Plates and Shells Through a Mixed Variational Approach and Global Piecewise-Smooth Functions (46)

Messina, A., *Dipartimento di Ingegneria dell'Innovazione, Università di Lecce, Italy*

15:00

Free Vibrations of Rectangular Solar Sails (47)

Morrison, T.M. and Murphy, K.D., *Department of Mechanical Engineering, University of Connecticut, USA*

15:20

Dynamic Stiffness Vibration Analysis for High Order Plate Models (48)

Eisenberger, M., *Faculty of Civil Engineering, Technion, Israel Institute of Technology, Israel*

Session 28

WORK-IN-PROGRESS II

Session Chairman: *TBC*

14:40

Vibration Analysis of Machine Tool Structure (WIP 6)

Srivastava, R., *Mechanical Engineering Department, Motilal Nehru National Institute of Technology, Allahabad, India*

15:00

Biomechanics of Loads on Human Skull (WIP 7)

Bastos, O. and Roytman, A., *Departamento de Fisica,, Universidade Federal do Maranhao, Brasil*

15:20

Investigation of Impedance's Characteristics of Transfer Model "Engine-Attachment-Airframe" of Trunk-Route Aircraft (WIP 8)

Baklanov, V. and Morozkov, A., *Tupolev Design Bureau, PJC "TUPOLEV", Moscow, Russia*

15:50 Closing session and presentation of prize for best paper

16:15 Visit to ISVR laboratories