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# ISMA2020 PAPERS

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## AVC

### Session Active Vibration Control

Feedback active control using an acoustic black hole K. Hook <sup>(1)</sup> , S. Daley <sup>(1)</sup> , J. Cheer <sup>(1)</sup> (1) University of Southampton, United Kingdom	1
Model-free active vibration control approach using proof-mass actuator with uncertainty A. Yonezawa <sup>(1)</sup> , I. Kajiwara <sup>(1)</sup> , H. Yonezawa <sup>(1)</sup> (1) Hokkaido University, Japan	11
Adaptive semi-active control of large deployable antenna arm X. Wang <sup>(1)</sup> , X. Wang <sup>(1)</sup> , F. Gao <sup>(1)</sup> , X. Li <sup>(1)</sup> , H. Wang <sup>(1)</sup> , H. Chai <sup>(1)</sup> , H. Ji <sup>(2)</sup> , J. Qiu <sup>(2)</sup> (1) Beijing Institute of Spacecraft System Engineering, China, People's Republic of (2) Key Laboratory of Mechanics and Control of Mechanical Structures, Nanjing University of Aeronautics and Astronautics, China, People's Republic of	23
Active seismic vibration control using inertial sensors G. Zhao <sup>(1)</sup> , B. Ding <sup>(1)</sup> , J. Watchi <sup>(1)</sup> , C. Collette <sup>(1,2)</sup> (1) Université libre de Bruxelles, Belgium (2) University of Liège, Belgium	35
Active damping of rotating platforms using Integral Force Feedback T. Dehaeze <sup>(1,2)</sup> , C. Collette <sup>(1,3)</sup> (1) University of Liege, Belgium (2) European Synchrotron Radiation Facility, Grenoble, France (3) Free University of Brussels, Belgium	45
Characteristics of an active noise control for plane waves using a parametric speaker H. Furuhashi <sup>(1)</sup> , S. Suzuki <sup>(1)</sup> (1) Aichi Institute of Technology, Japan	59
Active damping of cable-driven parallel robots for 3D printing F. Lacaze <sup>(1)</sup> , S. Chesne <sup>(1)</sup> , D. Rémond <sup>(1)</sup> (1) Univ Lyon, France	71
Vibration control units with piezoelectric patches and multi-resonant shunts set to maximize electric power absorption G. K. Rodrigues <sup>(1)</sup> , L. Dal Bo <sup>(1)</sup> , E. Turco <sup>(1)</sup> , P. Gardonio <sup>(1)</sup> (1) Università degli Studi di Udine, Italy	87
Active vibration damping of bladed structures A. Paknejad <sup>(1)</sup> , G. Raze <sup>(2)</sup> , G. Zhao <sup>(1)</sup> , A. Deraemaeker <sup>(1)</sup> , G. Kerschen <sup>(2)</sup> , C. Collette <sup>(1,2)</sup> (1) Université Libre de Bruxelles, Belgium (2) Université de Liège, Liège, Belgium	105

On the development of a digital twin for the active vibration control of a three-storey structure M. Dal Borgo <sup>(1)</sup> , P. Gardner <sup>(2)</sup> , Y. Zhu <sup>(2)</sup> , D. J. Wagg <sup>(2)</sup> , S.-K. Au <sup>(3)</sup> , S. J. Elliott <sup>(1)</sup> (1) University of Southampton, United Kingdom (2) The University of Sheffield, United Kingdom (3) Nanyang Technological University, Singapore	115
Stabilisation of a non-collocated velocity feedback system by the use of inerter N. Alujevic <sup>(1)</sup> , D. Cakmak <sup>(1)</sup> , M. Jokic <sup>(1)</sup> , H. Wolf <sup>(1)</sup> (1) University of Zagreb, Croatia	129
Passive control of a periodic structure using a network of periodically-coupled piezoelectric shunt circuits G. Raze <sup>(1)</sup> , J. Dietrich <sup>(1)</sup> , A. Paknejad <sup>(2)</sup> , B. Lossouarn <sup>(3)</sup> , G. Zhao <sup>(2)</sup> , A. Deraemaeker <sup>(4)</sup> , C. Collette <sup>(1,2)</sup> , G. Kerschen <sup>(1)</sup> (1) University of Liège, Belgium (2) Université Libre de Bruxelles, Belgium (3) Conservatoire National des Arts et Métiers, France (4) Université Libre de Bruxelles, Belgium	145
Active lining for the reduction of rotor noise S. Algermissen <sup>(1)</sup> , M. Misol <sup>(1)</sup> , A. Kokott <sup>(1)</sup> , K. Gonet <sup>(2)</sup> , V. Lungaho <sup>(3)</sup> (1) DLR, Germany (2) Invent GmbH, Germany (3) Trackwise, UK	161
Revision of cancellation at the edge approach for active noise barrier S. Sohrabi <sup>(1)</sup> , T. Pamiez Gomez <sup>(1)</sup> , J. Romeu Garbi <sup>(1)</sup> (1) Universitat Politècnica de Catalunya, Spain	173

---

## AE

### Session Aero-Elasticity

Flutter behaviour of aerodynamically coupled cantilever wings D. D. Dooner <sup>(1)</sup> , G. A. Vio <sup>(1)</sup> , G. Dimitriadis <sup>(2)</sup> (1) The University of Sydney, Australia (2) University of Liege, Belgium	183
Gain scheduling in receptance-based control of aeroelastic systems L. J. Adamson <sup>(1)</sup> , O. Braun <sup>(2)</sup> , S. Fichera <sup>(1)</sup> , J. E. Mottershead <sup>(1)</sup> (1) University of Liverpool, United Kingdom (2) TU Dresden, Germany	195
Modelling the limit cycle oscillations of flat plate wings using inextensible plate theory and the vortex lattice method A. Campanale <sup>(1)</sup> , L. Soria <sup>(1)</sup> , G. Kerschen <sup>(2)</sup> , G. Dimitriadis <sup>(2)</sup> (1) Politecnico di Bari, Italy (2) University of Liege, Belgium	207
Nonlinear oscillations of a low Reynolds SD7003 airfoil at higher angles of attack D. O. D. Izquierdo <sup>(1)</sup> , C. R. dos Santos <sup>(1)</sup> , F. D. Marques <sup>(1)</sup> (1) University of São Paulo, Brazil	219

Experimental identification of whirl flutter characteristics in a small-scale rotor rig A. Tatar <sup>(1)</sup> , D. Rezgui <sup>(1)</sup> , B. Titurus <sup>(1)</sup> (1) University of Bristol, United Kingdom	231
A modal approach to shock buffet lock-in analysis N. F. Giannelis <sup>(1)</sup> , G. A. Vio <sup>(1)</sup> (1) The University of Sydney, Australia	247
Model identification of a fluttering aerofoil with control-based continuation K. H. Lee <sup>(1)</sup> , D. A. W. Barton <sup>(1)</sup> , L. Renson <sup>(2)</sup> (1) University of Bristol, United Kingdom (2) Imperial College London, United Kingdom	261
Aeroelastic stability of a labyrinth seal coupled to a flexible stator, with a one control-volume bulk-flow model including temperature fluctuations M. Fleury <sup>(1,2)</sup> , F. Thouverez <sup>(1)</sup> , L. Blanc <sup>(1)</sup> , P. Girard <sup>(2)</sup> (1) Ecole Centrale de Lyon, France (2) Safran Aircraft Engines, France	269

---

**AA****Session Aeroacoustics and flow noise**

Simulation of strong vibro-acoustic coupling effects in ducts using a partitioned approach in the time domain J. Kersschot <sup>(1,2)</sup> , H. Denayer <sup>(1,2)</sup> , W. De Roeck <sup>(1)</sup> , W. Desmet <sup>(1,2)</sup> (1) KU Leuven, Belgium (2) Flanders Make, Belgium	285
A cost-effective computational technique for aeroacoustics noise prediction using the SNGR method B. de Brye <sup>(1)</sup> , A. Poulos <sup>(1)</sup> , C. Legendre <sup>(1)</sup> , G. Lielens <sup>(1)</sup> (1) Free Field Technologies (part of Hexagon's Manufacturing Intelligence division), Belgium	297
Adaptive UHBR nozzle concept study for noise reduction of jet-flap interaction A. Kolb <sup>(1)</sup> , S. Mancini <sup>(1)</sup> , C. Massarino <sup>(1)</sup> , M. Fuchs <sup>(2)</sup> , C. Jente <sup>(3)</sup> (1) Airbus Defence and Space GmbH, Germany (2) CFD Software F+E GmbH, Germany (3) German Aerospace Center (DLR), Germany	307
Network modelling of noise transmitted in residential ventilation systems O. Van Dessel <sup>(1)</sup> , H. Denayer <sup>(1,2)</sup> , W. De Roeck <sup>(1)</sup> (1) KU Leuven, Belgium (2) Flanders Make, Belgium	321
Experimental analysis of whistling in flow-excited Helmholtz resonators L. Criscuolo <sup>(1,2)</sup> , H. Denayer <sup>(1,2)</sup> , W. De Roeck <sup>(1)</sup> , W. Desmet <sup>(1,2)</sup> (1) KU Leuven, Belgium (2) Flanders Make, Belgium	333

In-flight pressure load measurements and analysis A. D. Marano <sup>(1)</sup> , T. Polito <sup>(1)</sup> , M. Guida <sup>(1)</sup> , M. Barbarino <sup>(2)</sup> , M. Belardo <sup>(2)</sup> , A. Perazzolo <sup>(3)</sup> , F. Marulo <sup>(1)</sup>	341
--	-----

*(1) University of Naples Federico II, Italy  
(2) CIRA – Italian Aerospace Research Center, Italy  
(3) Leonardo Helicopters Division, Italy*

Reduction of vortex-induced vibrations by locally resonant metamaterials F. Alves Pires <sup>(1,3)</sup> , H. Denayer <sup>(1,3)</sup> , E. Deckers <sup>(2,3)</sup> , C. Claeys <sup>(1,3)</sup> , W. Desmet <sup>(1,3)</sup>	353
---	-----

*(1) KU Leuven, Belgium  
(2) KU Leuven campus Diepenbeek, Belgium  
(3) DMMS Lab, Flanders Make, Belgium*

Determination of non-linear scattering matrices for perforated plates using tonal and random excitation H. Bodén <sup>(1)</sup> , N. Sayyad Khodashenas <sup>(1)</sup> , S. Boij <sup>(1)</sup>	365
--	-----

## CAM

### Session Characterisation, design and optimisation of vibro-acoustic materials and structures

Vibroacoustic characterisation methods for polymer materials and components J. Rohlffing <sup>(1)</sup> , J. Diemert <sup>(2)</sup> , S. Lüssenneide <sup>(2)</sup> , Z. M. Abdul Hamid <sup>(3)</sup> , J. Hohe <sup>(3)</sup> , B. Kranz <sup>(4)</sup> , T. Georgi <sup>(4)</sup>	379
---	-----

*(1) Fraunhofer Institute for Building Physics IBP, Stuttgart, Germany  
(2) Fraunhofer Institute for Chemical Technology ICT, Pfinztal, Germany  
(3) Fraunhofer Institute for Mechanics of Materials IWM, Freiburg, Germany  
(4) Fraunhofer Institute for Machine Tools and Forming Technology IWU, Dresden, Germany*

A multi-scale calculation method for sound absorbing structures with localised micro-porosity T. G. Zielinski <sup>(1)</sup> , R. Venegas <sup>(2)</sup>	395
---	-----

*(1) Polish Academy of Sciences, Poland  
(2) University Austral of Chile, Chile*

Manufacturing, modeling, and experimental verification of slotted sound absorbers K. C. Opiela <sup>(1)</sup> , T. G. Zielinski <sup>(1)</sup> , K. Attenborough <sup>(2)</sup>	409
--	-----

*(1) Polish Academy of Sciences, Poland  
(2) The Open University, UK*

Analysis of the noise attenuation in ducts by means of rigid perforated panels A. McCloskey <sup>(1)</sup> , A. Guiral <sup>(2)</sup> , J. Iriondo <sup>(1)</sup> , U. Galfarsoro <sup>(1)</sup>	421
---	-----

*(1) Mondragon Unibertsitatea, Spain  
(2) CAF, Spain*

Simplified acoustic model of an anisotropic foam using a micro-macro approach E. Lundberg <sup>(1)</sup> , P. Göransson <sup>(1)</sup> , B. P. Semeniuk <sup>(1)</sup>	437
---	-----

*(1) KTH Royal Institute of Technology, Sweden*

Vibro-acoustic behaviour of low- to high-density anisotropic cellular foams H. Mao <sup>(1)</sup> , M. Gaborit <sup>(1)</sup> , R. Rumpler <sup>(1)</sup> , P. Göransson <sup>(1)</sup>	451
--	-----

*(1) KTH Royal Institute of Technology, Sweden*

Low-frequency prediction of steady-state room response for different configurations of designed absorbing materials on room walls M. Meissner <sup>(1)</sup> , T. G. Zielinski <sup>(1)</sup> (1) Polish Academy of Sciences, Poland	463
Lightweight building floor using composite materials and the reduction of low-frequency vibrations H. Matsushita <sup>(1)</sup> (1) Takenaka corporation, Japan	479
Comfort improvement of an elevator car by viscoelastic sandwich panels M. Mendizabal <sup>(1)</sup> , J. Iriondo <sup>(1)</sup> , X. Hernandez <sup>(2)</sup> , A. McCloskey <sup>(1)</sup> , L. Irazu <sup>(2)</sup> (1) Mondragon Unibertsitatea, Spain (2) Orona EIC, Spain	495
Acoustic topology optimisation using CMA-ES V. T. Ramamoorthy <sup>(1)</sup> , E. Özcan <sup>(1)</sup> , A. J. Parkes <sup>(1)</sup> , A. Sreekumar <sup>(1)</sup> , L. Jaouen <sup>(2)</sup> , F.-X. Bécot <sup>(2)</sup> (1) University of Nottingham, United Kingdom (2) Matelys Research Lab, France	511
Measurement of the four pole matrix of a sample in a transmission tube R. Boonen <sup>(1,2)</sup> (1) KU Leuven, Belgium (2) Nabla Technical Consulting, Germany	523
Experimental identification of surface acoustic impedance G. Pavic <sup>(1)</sup> , L. Du <sup>(2)</sup> (1) INSA Lyon, France (2) National University of Singapore, Singapore	533
Lightweight decorated membrane panels for sound isolation L. Y. M. Sampaio <sup>(1)</sup> , P. d. C. M. Cerântola <sup>(1)</sup> , L. P. R. de Oliveira <sup>(1)</sup> (1) University of São Paulo, Brazil	545

---

## CMRM

### Session Condition monitoring of rotating machinery

A tacholess order tracking method based on inverse short-time Fourier transform and singular value decomposition L. Xu <sup>(1)</sup> , S. Chatterton <sup>(1)</sup> , P. Pennacchi <sup>(1)</sup> (1) Politecnico di Milano, Italy	559
Bearing diagnostics in variable speed gearboxes R. B. Randall <sup>(1)</sup> , W. A. Smith <sup>(1)</sup> (1) University of NSW, Australia	569
Explicit-duration hidden Markov model inference and application on the bearing fault diagnosis Y. Jin <sup>(1)</sup> , J. Antoni <sup>(1)</sup> (1) INSA-Lyon, France	581

Comparison of harmonic removal techniques for computing envelope spectra from rolling element bearing vibrations J. Berntsen <sup>(1,2)</sup> , A. Brandt <sup>(1)</sup> (1) University of Southern Denmark, Denmark (2) Lindø Offshore Renewables Center, Denmark	591
Motor current cyclic-non-stationarity analysis for bearing diagnostic G. D'Elia <sup>(1)</sup> , M. Cocconcelli <sup>(2)</sup> , M. Strozzi <sup>(2)</sup> , E. Mucchi <sup>(1)</sup> , G. Dalpiaz <sup>(1)</sup> , R. Rubini <sup>(2)</sup> (1) University of Ferrara, Italy (2) University of Modena and Reggio Emilia, Italy	597
Theoretical foundations of angle-time cyclostationarity J. Antoni <sup>(1)</sup> , K. Gryllias <sup>(2,3)</sup> , P. Borgjesani <sup>(4)</sup> (1) University of Lyon, France (2) KU Leuven, Belgium (3) Flanders Make, Belgium (4) UNSW Sydney, Australia	609
Planet bearing fault diagnosis based on cepstral pre-whitening and spectral correlation analysis Y. Guo <sup>(1)</sup> , X. Chen <sup>(1)</sup> , X. Wu <sup>(1)</sup> , J. Na <sup>(1)</sup> , Y. Lin <sup>(1)</sup> , J. Fan <sup>(1)</sup> (1) Kunming University of Science and Technology, China, People's Republic of	621
Angular velocity and cyclo(non)stationarity as an innovation in machining monitoring X. Zhu <sup>(1)</sup> , F. Girardin <sup>(1)</sup> , J. Antoni <sup>(1)</sup> (1) INSA-Lyon, France	631
Combustion diagnosis and vibration signature analysis of LPG fueled IC engine A. M. Cherian <sup>(1)</sup> , A. G. Kurian <sup>(1)</sup> , V. V. Menon <sup>(1)</sup> , S. Palanivelu <sup>(1)</sup> (1) Vellore Institute Of Technology, India	643
Towards prognostics for gearboxes operating under time-varying operating conditions: a frequency band identification approach S. Schmidt <sup>(1)</sup> , P. S. Heyns <sup>(1)</sup> , K. C. Gryllias <sup>(2,3)</sup> (1) University of Pretoria, South Africa (2) KU Leuven, Belgium (3) Flanders Make, Belgium	659
Impact detection for disengaged wet clutch with buckling discs using distribution distances applied to time-frequency map of vibration signal L. Zheng <sup>(1,2,3)</sup> , B. Ma <sup>(1)</sup> , M. Chen <sup>(1)</sup> , Q. Zhang <sup>(1)</sup> , K. Gryllias <sup>(2,3)</sup> (1) Beijing Institute of Technology, China (2) KU Leuven, Belgium (3) Flanders Make, Belgium	675
Cyclo-non-stationary indicators for bearing diagnostics under varying speed and load conditions A. Mauricio <sup>(1,2)</sup> , D. Helm <sup>(3)</sup> , M. Timusk <sup>(3)</sup> , J. Antoni <sup>(4)</sup> , K. Gryllias <sup>(1,2)</sup> (1) KU Leuven, Belgium (2) Flanders Make, Belgium (3) Laurentian University, Belgium (4) University of Lyon, France	685

Multiband modulation energy tracking for bearing fault diagnosis	697
A. Galezia <sup>(1,2,3)</sup> , K. Gryllias <sup>(2,3)</sup>	
<i>(1) Warsaw University of Technology, Poland</i>	
<i>(2) KU Leuven, Belgium</i>	
<i>(3) Flanders Make, Belgium</i>	
Prognostics of rotating machinery based on the multi-steps estimation approach	713
J. Qi <sup>(1,2)</sup> , A. R. Mauricio <sup>(1,2)</sup> , K. Gryllias <sup>(1,2)</sup>	
<i>(1) KU Leuven, Department of Mechanical Engineering, Celestijnenlaan 300 B, B-3001, Heverlee, Belgium</i>	
<i>(2) Dynamics of Mechanical and Mechatronic Systems, Flanders Make, Gaston Geenslaan 8, B-3001, Heverlee, Belgium</i>	
Fleet-based health monitoring for end-of-production-line and operational testing	729
K. Hendrickx <sup>(1,2)</sup> , W. Meert <sup>(2)</sup> , J. P. Da Cruz Patrício <sup>(1,3)</sup> , B. Cornelis <sup>(1)</sup> , K. Gryllias <sup>(2,4)</sup> , J. Davis <sup>(2)</sup>	
<i>(1) Siemens Digital Industries Software, Belgium</i>	
<i>(2) KU Leuven, Belgium</i>	
<i>(3) University of Porto, Portugal</i>	
<i>(4) Flanders Make, Belgium</i>	
Separation of vibration signal content using an improved discrete-random separation method	745
C. Peeters <sup>(1)</sup> , J. Antoni <sup>(2)</sup> , P.-J. Daems <sup>(1)</sup> , J. Helsen <sup>(1)</sup>	
<i>(1) Vrije Universiteit Brussel, Belgium</i>	
<i>(2) INSA-Lyon, France</i>	
<hr/>	
<b>D</b>	
<b>Session Damping</b>	
Inertial properties control by variable damping actuators and application to automotive suspensions	755
S. Mesbahi <sup>(1)</sup> , S. Milana <sup>(1)</sup> , A. Culla <sup>(1)</sup> , G. Pepe <sup>(1)</sup> , N. Roveri <sup>(1)</sup> , A. Carcaterra <sup>(1)</sup>	
<i>(1) La Sapienza, Italy</i>	
Structural damping definitions of multilayered plates	769
F. Marchetti <sup>(1)</sup> , K. Ege <sup>(2)</sup> , Q. Leclère <sup>(2)</sup> , N. B. Roozen <sup>(3)</sup>	
<i>(1) Matelys - Research Lab, France</i>	
<i>(2) LVA - INSA Lyon, France</i>	
<i>(3) KU Leuven, Belgium</i>	
Study on practical implementation of the self-adaptive impact absorber	779
R. Wiszowaty <sup>(1)</sup> , R. Faraj <sup>(1)</sup> , C. Graczykowski <sup>(1)</sup> , G. Mikułowski <sup>(1)</sup>	
<i>(1) Polish Academy of Sciences, Poland</i>	
Tests of the vibration damper system for the roller coaster	793
G. Karpieł <sup>(1)</sup> , P. Kurowski <sup>(1)</sup> , M. Mańka <sup>(1)</sup> , D. Prusak <sup>(1)</sup>	
<i>(1) University of Science and Technology, Poland</i>	

Effect of reinforcing fillers and plasticizer on mechanical properties of cork-rubber composites	807
H. Lopes <sup>(1)</sup> , S. P. Silva <sup>(2)</sup> , J. Machado <sup>(1)</sup> , J. P. Carvalho <sup>(2)</sup>	
<i>(1) University of Minho, Portugal</i>	
<i>(2) Amorim Cork Composites, Portugal</i>	
Volterra models of magnetorheological dampers and their application to vibrating systems	817
G. Pepe <sup>(1)</sup> , E. Paifelman <sup>(2)</sup> , A. Carcaterra <sup>(1)</sup>	
<i>(1) University of Rome, Italy</i>	
<i>(2) Italian National Research Council, Italy</i>	
Finite element optimization of viscoelastic damping applications	827
M. Gröhlich <sup>(1)</sup> , M. Böswald <sup>(1)</sup> , R. Winter <sup>(1)</sup>	
<i>(1) German Aerospace Center (DLR), Germany</i>	
Traveling wave effects in structures with local viscous and friction damping	841
H. Fischer <sup>(1)</sup> , S. Tatzko <sup>(1)</sup>	
<i>(1) Leibniz University Hannover, Germany</i>	
Viscoelastic vibration damping of rotating composite fan blades	851
L. Rouleau <sup>(1)</sup> , O. De Smet <sup>(1)</sup> , J.-F. Deü <sup>(1)</sup>	
<i>(1) LMSSC, Cnam, France</i>	
Sloshing fluid-structure interaction and induced damping effects: modelling and experimental analysis	859
L. Constantin <sup>(1)</sup> , J. De Courcy <sup>(1)</sup> , B. Titurus <sup>(1)</sup> , T. Rendall <sup>(1)</sup> , J. E. Cooper <sup>(1)</sup>	
<i>(1) University of Bristol, United Kingdom</i>	
Minimizing flexural vibration response of lightweight railway vehicle structures through topological optimization of constrained viscoelastic layers	873
A. J. Nieto <sup>(1)</sup> , E. Palomares <sup>(1)</sup> , D. Ruiz <sup>(1)</sup> , A. Donoso <sup>(1)</sup> , C. Ramiro <sup>(1)</sup> , A. L. Morales <sup>(1)</sup> , J. M. Chicharro <sup>(1)</sup> , P. Pintado <sup>(1)</sup> , J. C. Bellido <sup>(1)</sup>	
<i>(1) University of Castilla-La Mancha, Spain</i>	
Field measurement to understand the physics of vibroimpact for damping application	887
R. Chabrier <sup>(1)</sup> , E. Sadoulet-Reboul <sup>(1)</sup> , G. Chevallier <sup>(1)</sup> , E. Foltête <sup>(1)</sup>	
<i>(1) UBFC FEMTO-ST, France</i>	

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## DT

### Session Dynamic testing: methods and instrumentation

Non-linear saxophone reed vibrations measured by stroboscopic digital image correlation	897
E. Ukshini <sup>(1)</sup> , J. J. J. Dirckx <sup>(1)</sup>	
<i>(1) University of Antwerp, Belgium</i>	
Can one find the position and orientation of accelerometers from their signals?	907
D. Tcherniak <sup>(1)</sup>	
<i>(1) Brüel &amp; Kjær Sound &amp; Vibration Measurement A/S, Denmark</i>	

Soft tropical fruit assessment based on a non-contact non-destructive experimental modal analysis with laser technique N. Arai <sup>(1)</sup> , N. Hosoya <sup>(1)</sup> , I. Kajiwara <sup>(2)</sup> (1) <i>Shibaura Institute of Technology, Japan</i> (2) <i>Hokkaido University, Japan</i>	917
Evaluation of plates in similitude by experimental and machine learning techniques A. Casaburo <sup>(1)</sup> , G. Petrone <sup>(1)</sup> , F. Franco <sup>(1)</sup> , S. De Rosa <sup>(1)</sup> (1) <i>Università degli Studi di Napoli Federico II, Italy</i>	929
Nonlinear system identification of a pitching wing in a surging flow T. De Troyer <sup>(1)</sup> , P. Z. Csurcsia <sup>(1)</sup> , D. Greenblatt <sup>(2)</sup> (1) <i>Vrije Universiteit Brussel, Belgium</i> (2) <i>Technion Israel Institute of Technology, Israel</i>	939
Deriving PSD-based load assumptions for accelerated life testing of varying random vibration loading A. Trapp <sup>(1)</sup> , M. Kling <sup>(1)</sup> , P. Wolfsteiner <sup>(1)</sup> (1) <i>University of Applied Sciences Munich, Germany</i>	955
Optimal sensor placement of Bayesian virtual sensors J. Kullaa <sup>(1)</sup> (1) <i>Metropolia University of Applied Sciences, Finland</i>	973
Analysis of vibration prediction accuracy in underground mining operation based on monitored blast records L. K. Tartibu <sup>(1)</sup> , M. O. Okwu <sup>(1)</sup> , D. E. Ighravwe <sup>(1)</sup> , A. Mulaba – Bafubiandi <sup>(1)</sup> (1) <i>University of Johannesburg, South Africa</i>	987
Digital tracking techniques for MIMO swept sine control testing U. Musella <sup>(1)</sup> , E. Faignet <sup>(1)</sup> , B. Peeters <sup>(1)</sup> , P. Guillaume <sup>(2)</sup> (1) <i>Siemens Industry Software NV, Belgium</i> (2) <i>Vrije Universiteit Brussel, Belgium</i>	1001
Variation of the restoring force surface method to estimate nonlinear stiffness and damping parameters B. J. Moldenhauer <sup>(1)</sup> , M. S. Allen <sup>(1)</sup> , D. R. Roettgen <sup>(2)</sup> (1) <i>University of Wisconsin - Madison, United States of America</i> (2) <i>Sandia National Labs, United States of America</i>	1017
Low speed lifting cable fault detection using instantaneous angular speed S. Khadraoui <sup>(1)</sup> , F. Bolaers <sup>(1)</sup> , O. Cousinard <sup>(1)</sup> , J. P. Dron <sup>(1)</sup> (1) <i>University of Reims Champagne-Ardenne, France</i>	1027
Experimental identification of the force coefficients of dynamically flapped wings and resulting wing motion parameter study S. Timmermans <sup>(1)</sup> , D. Vandepitte <sup>(1)</sup> (1) <i>KU Leuven, Belgium</i>	1033
Influence of internal loads on the accuracy of durability tests of a vehicle on a test rig A. Rezayat <sup>(1)</sup> , M. Grottoli <sup>(1)</sup> , Y. Lemmens <sup>(1)</sup> , T. Tamarozzi <sup>(1,2)</sup> , C. Liefoghe <sup>(1)</sup> (1) <i>Siemens Industry Software N.V., Belgium</i> (2) <i>KU Leuven, Belgium</i>	1047

Design optimization for reducing vibro-acoustic variability of cylindrical cups V. K. Balla <sup>(1)</sup> , E. Deckers <sup>(1,2)</sup> , B. Pluymers <sup>(1,2)</sup> , J. Stroobants <sup>(1,2)</sup> , W. Desmet <sup>(1,2)</sup> <i>(1) KU Leuven, Belgium</i> <i>(2) Flanders Make, Belgium</i>	1059
Inverse structural modification for improving the design of harmonic excitation forces in underactuated vibration generators R. Belotti <sup>(1)</sup> , D. Richiedei <sup>(2)</sup> , I. Tamellin <sup>(2)</sup> , A. Trevisani <sup>(2)</sup> <i>(1) Free University of Bozen-Bolzano, Italy</i> <i>(2) University of Padova, Italy</i>	1069
Structural dynamic modelling and testing of a missile E. G. Yalçın Yıldırım <sup>(1)</sup> <i>(1) Roketsan, Turkey</i>	1081
Dynamic shape reconstruction of a notched beam by proportional observer and multi-resolution analysis F. Saltari <sup>(1)</sup> , D. Dessì <sup>(2)</sup> , F. Mastroddi <sup>(1)</sup> , F. Passacantilli <sup>(2)</sup> , E. Faiella <sup>(2)</sup> <i>(1) Sapienza University of Rome, Italy</i> <i>(2) CNR-INM Institute of Marine Engineering, Italy</i>	1087
Piezoresistivity in self-aware 3D printed dynamic structures J. Slavič <sup>(1)</sup> , M. Arh <sup>(1)</sup> , T. B. Palmič <sup>(1)</sup> , M. Boltežar <sup>(1)</sup> <i>(1) University of Ljubljana, Slovenia</i>	1101
Development of a highly adaptable method for structural integrity assessment by means of a removable piezoelectric measurement head for electromechanical impedance determination Y. J. Park <sup>(1)</sup> , C. Contell Asins <sup>(1)</sup> , D. Laveuve <sup>(1)</sup> , M. Brandt <sup>(1)</sup> , S. Rieß <sup>(1)</sup> , M. Gerhardt <sup>(1)</sup> <i>(1) Fraunhofer Institute for Structural Durability and System Reliability LBF, Germany</i>	1109
Component replacement transfer path analysis J. W. Meggitt <sup>(1)</sup> , A. S. Elliott <sup>(1)</sup> , A. T. Moorhouse <sup>(1)</sup> , A. Jalibert <sup>(2)</sup> , G. Franks <sup>(3)</sup> <i>(1) University of Salford, England</i> <i>(2) Bentley Motors Ltd., England</i> <i>(3) Brüel &amp; Kjaer Sound &amp; Vibration Engineering Services, England</i>	1123
Component TPA: benefit of including rotational degrees of freedom and over-determination M. Haeussler <sup>(1)</sup> , T. Mueller <sup>(1)</sup> , E. A. Pasma <sup>(1)</sup> , J. Freund <sup>(2)</sup> , O. Westphal <sup>(2)</sup> , T. Voehringer <sup>(2)</sup> <i>(1) VIBES.technology, Germany</i> <i>(2) ZF Friedrichshafen AG, Germany</i>	1135

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## JOINT

### Session Dynamics of Joints

Virtual testing methodology for extraction of parameters of simplified joint model C. Lopez <sup>(1)</sup> , S. Gallas <sup>(2,4)</sup> , J. Stroobants <sup>(1)</sup> , V. Iliopoulou <sup>(1)</sup> , J. Jordens <sup>(3)</sup> , H. Devriendt <sup>(2,4)</sup> , W. Desmet <sup>(2,4)</sup> <i>(1) Corelab CodesignS, Flanders Make</i> <i>(2) Corelab DMMS-D, Flanders Make</i> <i>(3) Corelab ProductionS, Flanders Make</i> <i>(4) Department of Mechanical Engineering, Division LSDM, KU Leuven</i>	1149
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Dynamics of frictional interfaces in a bolted joint H. G. D. Goyder <sup>(1)</sup> , P. Ind <sup>(2)</sup> , D. Brown <sup>(2)</sup> <i>(1) Cranfield University, United Kingdom</i> <i>(2) AWE Aldermaston, United Kingdom</i>	1161
Using piezoelectrically excited transverse vibrations for bolt tension estimation M. Brøns <sup>(1)</sup> , K. L. Ebbehøj <sup>(1)</sup> , D. Tcherniak <sup>(2)</sup> , J. J. Thomsen <sup>(1)</sup> <i>(1) Technical University of Denmark, Denmark</i> <i>(2) Brüel &amp; Kjaer Sound and Vibration Measurement A/S, Denmark</i>	1175
Experimental identification of the dynamic behaviour of a bolted joint C. Stephan <sup>(1)</sup> <i>(1) ONERA, France</i>	1189
Numerical and experimental investigations of nonlinearities in bolted joints N. Jamia <sup>(1)</sup> , J. Taghipour <sup>(1)</sup> , H. Jalali <sup>(2)</sup> , M. I. Friswell <sup>(1)</sup> , H. H. Khodaparast <sup>(1)</sup> , A. D. Shaw <sup>(1)</sup> <i>(1) Swansea University, United Kingdom</i> <i>(2) Arak University of Technology, Iran</i>	1199
Bolt looseness detection using Spectral Kurtosis analysis for structural health monitoring S. K. Ho <sup>(1)</sup> , H. C. Nedunuri <sup>(1)</sup> , W. Balachandran <sup>(1)</sup> , T.-H. Gan <sup>(1,2)</sup> <i>(1) Brunel University London, United Kingdom</i> <i>(2) TWI, UK</i>	1215
A parametric model order reduction strategy for viscoelastic adhesive joints S. Zhang <sup>(1,2)</sup> , H. Devriendt <sup>(1,2)</sup> , W. Desmet <sup>(1,2)</sup> <i>(1) KU Leuven, Mechanical Engineering, LMSD division, Belgium</i> <i>(2) Flanders Make, Core Lab DMMS, Belgium</i>	1223
Wave and finite element modelling of automotive joints including lightweight composites T. Dutton <sup>(1)</sup> , D. Chappell <sup>(1)</sup> , D. Smith <sup>(2)</sup> <i>(1) Nottingham Trent University, United Kingdom</i> <i>(2) Far-UK Ltd., United Kingdom</i>	1235

**RMD****Session Dynamics of Rotating Machinery**

Estimation of time-varying forces loading the vane in balanced vane pumps M. Battarra <sup>(1)</sup> , E. Mucchi <sup>(1)</sup> <i>(1) University of Ferrara, Italy</i>	1245
Steady-state harmonic vibrations of a linear rotor-bearing system with a discontinuous shaft and arbitrary distributed mass unbalance M. Klanner <sup>(1)</sup> , M. S. Prem <sup>(1)</sup> , K. Ellermann <sup>(1)</sup> <i>(1) University of Technology Graz, Austria</i>	1257
Stabilization of ultra-high-speed air bearings with shunted piezo ceramics Y. Lu <sup>(1,2)</sup> , D. Reynaerts <sup>(1,2)</sup> , F. Al-Bender <sup>(1,2)</sup> <i>(1) KU Leuven, Belgium</i> <i>(2) Flanders Make, Belgium</i>	1273

Experimental validation of the analytical transducer and linearized lumped equivalent network model of a permanent magnet synchronous motor T. Kimpián <sup>(1)</sup> , F. Augusztinovicz <sup>(2)</sup> (1) thyssenkrupp Components Technology Hungary Ltd. (2) Budapest University of Technology and Economics	1285
Design and validation of a highly dynamic testing facility for e-motors J. De Smet <sup>(1)</sup> , S. Maxl <sup>(2)</sup> , G. Pinte <sup>(1)</sup> , C. Lauwers <sup>(1)</sup> (1) Flanders Make, Belgium (2) Tectos gmbh, Austria	1293
A rotor dynamic balancing method based on EMA L. Li <sup>(1)</sup> , S. Cao <sup>(1)</sup> , Z. Ma <sup>(1)</sup> , S. Zhong <sup>(1)</sup> (1) Tianjin University, China, People's Republic of	1309
Improved identification of a blade-disk coupling through a parametric study of the dynamic hybrid models Z. Saeed <sup>(1)</sup> , M. Kazeminasab <sup>(1)</sup> , C. M. Firrone <sup>(1)</sup> , T. M. Berruti <sup>(1)</sup> (1) Politecnico di Torino, Italy	1323
Parametrically induced Jeffcott rotor due to varying stiffness of the supporting rolling bearing elements G. Ghannad Tehrani <sup>(1)</sup> , C. Gastaldi <sup>(1)</sup> , T. Berruti <sup>(1)</sup> (1) Politecnico Di Torino, Italy	1337
The numerical study of elasto-hydrodynamic lubrication on piston assembly considering secondary motion İ. Çiylez <sup>(1)</sup> , B. Sancak <sup>(1)</sup> (1) BMC Power Engine and Control Technologies Inc., Turkey	1349
A new methodology for the design of rotating vibration metabsorbers: numerical and experimental study K. Jaboliste <sup>(1)</sup> , E. Sadoulet-Reboul <sup>(1)</sup> , G. Chevallier <sup>(1)</sup> , O. Sauvage <sup>(2)</sup> (1) University of Bourgogne Franche-Comte / FEMTO-ST Institute, France (2) Groupe PSA, France	1363
Robust Bayesian approach of instantaneous speed estimation in non-stationary operating conditions Y. Hawwari <sup>(1,2)</sup> , J. Antoni <sup>(1)</sup> , H. Andre <sup>(3)</sup> , M. El badaoui <sup>(2,3)</sup> (1) INSA-Lyon, France (2) SAFRAN TECH, France (3) University of Lyon, France	1373
Investigation of flat rotary type piezoelectric actuator D. Mazeika <sup>(1)</sup> , A. Ceponis <sup>(1)</sup> , P. Vasiljev <sup>(2)</sup> , V. Jurenas <sup>(3)</sup> (1) Vilnius Gediminas Technical University, Lithuania (2) Vytautas Magnus University, Lithuania (3) Kaunas University of Technology, Lithuania	1387
A comparison between gear mesh stiffness calculation methods and their sensitivity for lightweight gears C. Natali <sup>(1)</sup> , M. Battarra <sup>(1)</sup> , G. Dalpiaz <sup>(1)</sup> , E. Mucchi <sup>(1)</sup> (1) University of Ferrara, Italy	1403

Comparison of controllers for stick-slip suppression in rotary drilling systems H. J. Cruz Neto <sup>(1)</sup> , M. A. Trindade <sup>(1)</sup> <i>(1) University of São Paulo, Brazil</i>	1419
Effect of normal load evolution on transient torsional vibrations during clutch engagement J. Sjöstrand <sup>(1)</sup> , I. Lopez Arteaga <sup>(1,2)</sup> , L. Kari <sup>(1)</sup> <i>(1) KTH (Royal institute of technology), Sweden</i> <i>(2) Eindhoven University of Technology, The Netherlands</i>	1433
Characterization of incremental encoders by accelerometers mounted on the rotor R. Bertoni <sup>(1)</sup> , H. André <sup>(2)</sup> , J. Antoni <sup>(3)</sup> <i>(1) Vibratec, France</i> <i>(2) LASPI Université Jean Monnet de Saint-Etienne, France</i> <i>(3) LVA INSA - Lyon, France</i>	1449
Performance of order-based modal analysis for operational rotating hardware considering excitations composed of various harmonic and random amplitudes G. Sternharz <sup>(1)</sup> , C. Mares <sup>(1)</sup> , T. Kalganova <sup>(1)</sup> <i>(1) Brunel University London, United Kingdom</i>	1465
Balancing method and experiment of a small spacecraft reaction wheel W. De Munter <sup>(1)</sup> , J. Lanting <sup>(1)</sup> , T. Delabie <sup>(1)</sup> , D. Vandepitte <sup>(1)</sup> <i>(1) KU Leuven, Belgium</i>	1481

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**CIV****Session Dynamics of civil structures**

Using modal analysis principles to develop an improved method to measure impact insulation in multistory buildings S. Girdhar <sup>(1)</sup> , A. Barnard <sup>(1)</sup> <i>(1) Michigan Technological University, United States of America</i>	1497
Vehicle Bridge Interaction – Extracting the dynamic characteristics of the non-stationary train passing phase N. Mostafa <sup>(1)</sup> , D. Di Maio <sup>(1)</sup> , R. Loendersloot <sup>(1)</sup> <i>(1) Engineering Technology, University of Twente, Netherlands, The</i>	1511
Modal-based monitoring of a pedestrian bridge for damage detection M. Kohm <sup>(1)</sup> , L. Stempniewski <sup>(1)</sup> <i>(1) Karlsruhe Institute of Technology, Germany</i>	1525
Long-term vibration and wind load monitoring on a high rise building O. Bronkhorst <sup>(1)</sup> , C. Geurts <sup>(1)</sup> <i>(1) TNO, The Netherlands</i>	1541
Response of periodic elevated railway bridges accounting for dynamic soil-structure interaction P. Reumers <sup>(1)</sup> , G. Lombaert <sup>(1)</sup> , G. Degrande <sup>(1)</sup> <i>(1) KU Leuven, Belgium</i>	1553

Development of a finite element model-based scenario analysis tool to support maintenance decisions on a bridge – a case study H. Kalyanasundaram <sup>(1)</sup> , R. Loendersloot <sup>(1)</sup> , T. Tinga <sup>(1)</sup> (1) University of Twente, Netherlands, The	1561
Natural frequencies and modes of poles, beams, floors, road and rail bridges L. Auersch <sup>(1)</sup> , S. Said <sup>(1)</sup> , R. Rohrmann <sup>(1,2)</sup> (1) Federal Institute of Material Research and Testing, Germany (2) SABM, Germany	1573
Study of layouts for the improvement of speech intelligibility in a multi-source environment A. Vandenberghe <sup>(1)</sup> , Y. Sluyts <sup>(1)</sup> , D. Saelens <sup>(1)</sup> , M. Rychtarikova <sup>(1)</sup> (1) KU Leuven, Belgium	1587
Preliminary study on the estimation of just noticeable differences of spectral dips and peaks by adaptative method L. Kritly <sup>(1,2)</sup> , L. Zelem <sup>(3)</sup> , V. Chmelík <sup>(3)</sup> , C. Glorieux <sup>(1)</sup> , M. Rychtáriková <sup>(1,3)</sup> (1) KU Leuven, Belgium (2) EPF - Graduate School of Engineering, France (3) STU Bratislava, Slovak Republic	1593

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**INV****Session Inverse Methods - Load Identification**

Modelling vortex-induced loads using machine learning R. Peeters <sup>(1)</sup> , J. Decuyper <sup>(1)</sup> , T. De Troyer <sup>(1)</sup> , M. C. Runacres <sup>(1)</sup> (1) Vrije Universiteit Brussel, Belgium	1601
Corrected Force Analysis Technique in time domain E. Le Roux <sup>(1)</sup> , C. Pézerat <sup>(1)</sup> , Q. Leclère <sup>(2)</sup> , J.-H. Thomas <sup>(1)</sup> (1) LAUM, France (2) LVA, France	1615
Analysis of the dynamic characterisation and behaviour of an elevator rope M. Mendizabal <sup>(1)</sup> , J. Iriondo <sup>(1)</sup> , A. McCloskey <sup>(1)</sup> , N. Otaño <sup>(2)</sup> , U. Galfarsoro <sup>(1)</sup> , X. Hernandez <sup>(2)</sup> (1) Mondragon Unibertsitatea, Spain (2) Orona EIC, Spain	1621
Construction machinery force measurements for detailed vibration and groundborne noise calculations G. Farotto <sup>(1)</sup> , A. Bigot <sup>(1)</sup> (1) SIXENSE Engineering, France	1635
Vibration-based identification of mechanical properties of viscoelastic materials E. Pierro <sup>(1)</sup> , G. Carbone <sup>(2)</sup> (1) University of Basilicata, Italy (2) Polytechnic University of Bari	1651

Inverse dynamic load distribution identification for a passenger car tire using vibration responses	1659
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H. Devriendt <sup>(1,2)</sup>, F. Naets <sup>(1)</sup>, P. Kindt <sup>(2)</sup>, W. Desmet <sup>(1)</sup>

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*(2) Vibration Mechanics, Goodyear Innovation Center\* Luxembourg, Luxembourg*

Viscoelastic material parameter identification from force and displacement response in the time and frequency domain	1673
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V. Cool <sup>(1)</sup>, E. Deckers <sup>(2,3)</sup>, S. Jonckheere <sup>(1,3)</sup>, F. Naets <sup>(1,3)</sup>, W. Desmet <sup>(1,3)</sup>

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*(3) Core Lab DMMS, Flanders Make, Belgium*

## MHF

### Session Medium and High Frequency Techniques

Finding the right level of detail in statistical energy analysis for onboard sound level prediction	1685
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R. Gaudel <sup>(1)</sup>, L. MacLean <sup>(1)</sup>

*(1) Damen Shipyards, Netherlands, The*

Generation of diffuse acoustic modes using prolate spheroidal wave functions	1695
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C. Van hoorickx <sup>(1)</sup>, E. Reynders <sup>(1)</sup>

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Dynamical energy analysis: high-frequency vibrational excitation of real-world structures	1711
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M. Richter <sup>(1,2)</sup>, D. J. Chappell <sup>(2)</sup>, G. Tanner <sup>(1)</sup>

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*(2) Nottingham Trent University, United Kingdom*

Prediction of vibration transmission across junctions using diffuse field reciprocity	1721
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W. Stalmans <sup>(1)</sup>, C. Van hoorickx <sup>(1)</sup>, E. Reynders <sup>(1)</sup>

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Modelling elastic phononic crystal beam via energy spectral element method	1731
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E. D. Nobrega <sup>(1)</sup>, V. S. Pereira <sup>(1)</sup>, D. I. G. Costa <sup>(1)</sup>, J. M. C. Dos Santos <sup>(2)</sup>

*(1) Federal University of Maranhão, Brazil*

*(2) University of Campinas, Brazil*

On the use of experimental ensembles in a hybrid deterministic-statistical energy analysis method	1739
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A. Clot-Razquin <sup>(1)</sup>, R. S. Langley <sup>(2)</sup>, J. W. R. Meggitt <sup>(3)</sup>, A. T. Moorhouse <sup>(3)</sup>, A. S. Elliott <sup>(3)</sup>

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*(3) Acoustics Research Centre, University of Salford, UK*

Waves in long-range connected waveguide: single and multiple interaction regions	1753
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A. S. Rezaei <sup>(1)</sup>, F. Mezzani <sup>(1)</sup>, A. Carcaterra <sup>(1)</sup>

*(1) Sapienza University of Rome, Italy*

Impact sound prediction of multilayered structures with the (modal) transfer matrix method	1761
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J. Vastiau <sup>(1)</sup>, C. van hoorickx <sup>(1)</sup>, E. P. B. Reynders <sup>(1)</sup>

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Dynamic hybrid coupling for elastic wave propagation: reflection and transmission analysis S. Raorane <sup>(1)</sup> , T. Uhl <sup>(1)</sup> , P. Packo <sup>(1)</sup> , M. J. Leamy <sup>(2)</sup> (1) AGH University of Science and Technology, Poland (2) Georgia Institute of Technology, USA	1777
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## MTC

### Session Modal testing: methods and case studies

Modal testing and model correlation of a lumped parameter vibroacoustical system G. Mikota <sup>(1)</sup> , A. Brandl <sup>(1)</sup> , P. Tremel <sup>(1)</sup> (1) Johannes Kepler University Linz, Austria	1789
Phase resonance method for nonlinear mechanical structures with phase locked loop control M. Tang <sup>(1)</sup> , C. Stephan <sup>(2)</sup> , M. Böswald <sup>(1)</sup> (1) DLR, Germany (2) Onera, France	1805
A generalized Operational Modal Analysis framework for challenging no-NExT engineering applications S. De Carolis <sup>(1)</sup> , G. De Filippis <sup>(1)</sup> , D. Palmieri <sup>(1)</sup> , L. Soria <sup>(1)</sup> (1) Politecnico di Bari, Italy	1819
Efficient parameter identification using generalized Polynomial Chaos Expansion – A numerical and experimental study M. S. Prem <sup>(1)</sup> , M. Klanner <sup>(1)</sup> , K. Ellermann <sup>(1)</sup> (1) University of Technology Graz, Austria	1833
Development of a robot-aided modal analysis measurement method using laser Doppler vibrometry O. Devigne <sup>(1)</sup> , S. Hoffait <sup>(2)</sup> , O. Brüls <sup>(1)</sup> (1) University of Liège, Belgium (2) V2i SA, Belgium	1847
Modal analysis with released load excitation P. Kurowski <sup>(1)</sup> , K. Mendrok <sup>(1)</sup> , T. Uhl <sup>(1)</sup> (1) AGH University of Science and Technology, Poland	1859
OMA experimental identification of the damping properties of a sloshing system G. Coppotelli <sup>(1)</sup> , G. Franceschini <sup>(1)</sup> , B. Titurus <sup>(2)</sup> , J. Cooper <sup>(2)</sup> (1) University of Rome "La Sapienza", Roma, Italy (2) University of Bristol, Bristol, UK	1871

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## MOR

### Session Model Order Reduction

Hyper-reduced models of hyperelastic dissipative elastomer bushings R. Penas Ferreira <sup>(1,2)</sup> , A. Gaudin <sup>(1)</sup> , E. Balmes <sup>(2,3)</sup> (1) Groupe PSA, France (2) HESAM University, France (3) SDTools, France	1887
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Robust error assessment for reduced order vibro-acoustic problems Q. Aumann <sup>(1)</sup> , G. Müller <sup>(1)</sup> (1) Technical University of Munich, Germany	1901
A rational Krylov subspace method for the unit cell modeling of 2D infinite periodic media R. F. Boukadia <sup>(1,2,4)</sup> , E. Deckers <sup>(3,4)</sup> , C. Claeys <sup>(1,4)</sup> , M. Ichchou <sup>(2)</sup> , W. Desmet <sup>(1,4)</sup> (1) KU Leuven, Belgium (2) École Centrale de Lyon, France (3) KU Leuven, Diepenbeek Campus, Belgium (4) Flanders Make, Belgium	1915

A physics-based, local POD basis approach for multi-parametric reduced order models K. Vlachas <sup>(1)</sup> , K. Tatsis <sup>(1)</sup> , K. Agathos <sup>(1)</sup> , A. R. Brink <sup>(2)</sup> , E. Chatzi <sup>(1)</sup> (1) ETH Zurich, Switzerland (2) Sandia National Laboratories, United States	1925
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**MU****Session Model Update**

Finite element (FE) model updating techniques for structural dynamics problems involving non-ideal boundary conditions M. Nagesh <sup>(1)</sup> , R. J. Allemang <sup>(1)</sup> , A. W. Phillips <sup>(1)</sup> (1) University of Cincinnati, United States of America	1937
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Model validation using iterative finite element model updating M. Bruns <sup>(1)</sup> , B. Hofmeister <sup>(1)</sup> , C. Hübler <sup>(1)</sup> , R. Rolfs <sup>(1)</sup> (1) Leibniz University Hannover, Germany	1951
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Stochastic identification of parametric reduced order models of printed circuit boards M. Hülsebrock <sup>(1)</sup> , M. Herrnberger <sup>(3)</sup> , H. Atzrodt <sup>(2)</sup> , R. Lichtinger <sup>(3)</sup> (1) Technische Universität Darmstadt, Germany (2) Fraunhofer LBF, Germany (3) BMW Group, Germany	1961
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Finite element model updating of linear dynamic systems using a hybrid static and dynamic testing technique M. Nagesh <sup>(1)</sup> , R. J. Allemang <sup>(1)</sup> , A. W. Phillips <sup>(1)</sup> (1) University of Cincinnati, United States of America	1973
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**MB****Session Multi-body dynamics and control**

A numerical study of timing gear rattle based on gear mesh stiffness and engine load variation İ. Çylez <sup>(1)</sup> , Y. E. Kuzu <sup>(1)</sup> (1) BMC Power Engine and Control Technologies Inc., Turkey	1987
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Evaluation of a multibody combustion engine simulation model for underwater noise calculation M. Donderer <sup>(1,3)</sup> , U. Waldenmaier <sup>(1)</sup> , J. Neher <sup>(2)</sup> , S. Ehlers <sup>(3)</sup> (1) MAN Energy Solutions, Germany (2) Technische Hochschule Ulm, Germany (3) Technische Universität Hamburg, Germany	2001
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Virtual training of machine learning algorithm using a multibody model for bearing diagnostics of independent cart system	2013
J. Cavalaglio Camargo Molano <sup>(1)</sup> , L. Scurria <sup>(2)</sup> , C. Fonte <sup>(1)</sup> , M. Cocconcelli <sup>(1)</sup> , T. Tamarozzi <sup>(3)</sup>	
(1) University of Modena and Reggio Emilia, Italy	
(2) Gent University, Belgium	
(3) Siemens PLM Software, Belgium	
Parameter and force identification through multibody model based virtual sensing on a vehicle suspension	2025
E. Risaliti <sup>(1,2)</sup> , J. Vandersanden <sup>(2)</sup> , M. Vermaut <sup>(2)</sup> , W. Desmet <sup>(2)</sup>	
(1) Siemens Industry Software NV, Belgium	
(2) KU Leuven, Belgium	
Influences of levels of detail for flexible multibody models on NVH prediction for gear transmissions	2037
Y. Gwon <sup>(1)</sup> , D. Park <sup>(2)</sup> , A. Rezayat <sup>(2)</sup> , T. Tamarozzi <sup>(2)</sup>	
(1) Hyundai Motor Company, South Korea	
(2) Siemens Industry Software NV, Belgium	
Bond graph concepts applied to an aircraft brake system	2053
L. E. S. Garcia <sup>(1)</sup> , L. C. S. Góes <sup>(1)</sup>	
(1) ITA - Aeronautics Institute of Technology, Brazil	
<hr/>	
<b>NL</b>	
<b>Session Non-linearities: identification and modelling</b>	
Numerical investigations of the energy transfer between modes due to multi-resonances of a nonlinear friction-damped model	2069
N. Marhenke <sup>(1)</sup> , J. Wallaschek <sup>(1)</sup> , L. Panning-von Scheidt <sup>(1)</sup> , S. Tatzko <sup>(1)</sup> , A. Hartung <sup>(2)</sup> , S. Schwarz <sup>(2)</sup>	
(1) Institute of Dynamics and Vibration Research, Germany	
(2) MTU Aero Engines AG, Germany	
Nonlinear modal testing of structures with nonlinear dissipation	2087
M. Scheel <sup>(1)</sup> , M. Krack <sup>(1)</sup>	
(1) University of Stuttgart, Germany	
Hybrid nonlinear phase resonance testing utilizing realtime substructuring and control based continuation	2095
G. Kleyman <sup>(1)</sup> , M. Jahn <sup>(1)</sup> , S. Tatzko <sup>(1)</sup>	
(1) Institute of Dynamics and Vibration Research, Leibniz University Hannover, Germany	
Non-invasive feedback stabilization of smooth and nonsmooth nonlinear systems	2107
G. Abeloos <sup>(1)</sup> , C. Collette <sup>(1,2)</sup> , G. Kerschen <sup>(1)</sup>	
(1) University of Liège, Belgium	
(2) Université Libre de Bruxelles, Belgium	
A data-driven model predictive control approach toward feedback linearization of nonlinear mechanical systems	2117
M. Floren <sup>(1)</sup> , T. Oomen <sup>(1)</sup> , J. P. Noël <sup>(1)</sup>	
(1) Eindhoven University of Technology, The Netherlands	

An equivalent linearization method for predicting the vibration response of nonlinear oscillators under combined harmonic and random excitation J. Hickey <sup>(1)</sup> , T. Butlin <sup>(1)</sup> , R. Langley <sup>(1)</sup> , N. Onozato <sup>(2)</sup> (1) University of Cambridge, UK (2) Mitsubishi Heavy Industries Europe Ltd	2125
On the application of Gaussian process latent force models for Bayesian identification of the Duffing system T. Friis <sup>(1)</sup> , R. Brincker <sup>(1)</sup> , T. J. Rogers <sup>(2)</sup> (1) Technical University of Denmark, Denmark (2) University of Sheffield, United Kingdom	2141
Detailed investigation of brake squeal - improvement of the squeal test rig and comparison between results and predictions L. Yin <sup>(1)</sup> , T. Reddyhoff <sup>(1)</sup> , D. Nowell <sup>(1)</sup> (1) Imperial College, United Kingdom	2155
Comparison of contact parameters measured with two different friction rigs for nonlinear dynamic analysis A. Fantetti <sup>(1)</sup> , C. Pennisi <sup>(2)</sup> , D. Botto <sup>(2)</sup> , S. Zucca <sup>(2)</sup> , C. Schwingshackl <sup>(1)</sup> (1) Imperial College London, UK (2) Politecnico di Torino, Italy	2165
A time-spectral form of harmonic balance method for nonlinear dynamic analysis B. Zhou <sup>(1)</sup> , Y. Sun <sup>(1)</sup> , C. Zang <sup>(1)</sup> (1) Nanjing University of Aeronautics and Astronautics, China, People's Republic of	2175
Nonlinear dynamic analysis of gas turbine combustor leaf seal L. R. Tamatam <sup>(1)</sup> , D. Botto <sup>(1)</sup> , S. Zucca <sup>(1)</sup> , F. Funghi <sup>(2)</sup> (1) Politecnico di Torino, Italy (2) Baker Hughes, Italy	2187
ReSMILE: trading off model accuracy and complexity for linear parameter-varying systems A. Retzler <sup>(1,2)</sup> , J. Swevers <sup>(1,2)</sup> , J. Gillis <sup>(1,2)</sup> , Z. Kollár <sup>(3)</sup> (1) KU Leuven, Belgium (2) Flanders Make, Belgium (3) Budapest University of Technology and Economics, Hungary	2203
Parameter identification for nonsmooth nonlinear dynamical systems T. Kasper <sup>(1)</sup> , S. Tatzko <sup>(1)</sup> , J. Wallaschek <sup>(1)</sup> (1) Leibniz Universität Hannover, Germany	2219
Localizing nonlinear behavior from response measurements K. K. Vesterholm <sup>(1)</sup> , A. Brandt <sup>(1)</sup> (1) University of Southern Denmark, Denmark	2231
The best linear approximation of MIMO systems: simplified nonlinearity assessment using a toolbox P. Z. Csurcsia <sup>(1)</sup> , B. Peeters <sup>(2)</sup> , J. Schoukens <sup>(3,1)</sup> (1) Vrije Universiteit Brussel, Belgium (2) Siemens Industry Software NV, Belgium (3) TU Eindhoven, The Netherlands	2239

**OMCV****Session Optical Methods and Computer Vision for Vibration Engineering**

The potential of measuring spatial operating deflection shapes from still images using spectral optical flow imaging	2253
D. Gorjup <sup>(1)</sup> , J. Slavič <sup>(1)</sup> , M. Boltežar <sup>(1)</sup>	
<i>(1) University of Ljubljana, Slovenia</i>	
An interpolated FFT algorithm for full-field nonlinear modal testing with a 3D-SLDV	2261
X. Wang <sup>(1,2)</sup> , M. Szydlowski <sup>(2)</sup> , J. Yuan <sup>(2)</sup> , C. W. Schwingshackl <sup>(2)</sup>	
<i>(1) Sun-Yat-Sen University, China</i>	
<i>(2) Imperial College London, United Kingdom</i>	
Vibration measurements with multiple cameras	2275
R. Del Sal <sup>(1)</sup> , L. Dal Bo <sup>(1)</sup> , E. Turco <sup>(1)</sup> , A. Fusiello <sup>(1)</sup> , A. Zanarini <sup>(2)</sup> , R. Rinaldo <sup>(1)</sup> , P. Gardonio <sup>(1)</sup>	
<i>(1) Università degli Studi di Udine, Italy</i>	
<i>(2) Università degli Studi di Bologna, Italy</i>	
On the making of precise comparisons with optical full field technologies in NVH	2293
A. Zanarini <sup>(1)</sup>	
<i>(1) University of Bologna, Italy</i>	
A demo airplane full field modal validation using digital image correlation	2309
D. Mastrodicasa <sup>(1)</sup> , E. Di Lorenzo <sup>(1)</sup> , B. Peeters <sup>(1)</sup> , P. Guillaume <sup>(2)</sup>	
<i>(1) Siemens Industry Software NV, Belgium</i>	
<i>(2) Vrije Universiteit Brussel, Belgium</i>	
On the usability of phase-based motion magnification for defect detection in vibrating panels	2321
F. Cosco <sup>(1,2,3)</sup> , J. Cuénca <sup>(2)</sup> , W. Desmet <sup>(3,4)</sup> , K. Janssens <sup>(2)</sup> , D. Mundo <sup>(1)</sup>	
<i>(1) University of Calabria, Italy</i>	
<i>(2) Siemens Industry Software, Belgium</i>	
<i>(3) KU Leuven, Belgium</i>	
<i>(4) Flanders Make, Belgium</i>	
Accuracy and sensitivity of camera based displacement measurement with optical flow: numerical investigation	2333
F. S. Egner <sup>(1,2)</sup> , M. Kirchner <sup>(1,2)</sup> , Y. Wang <sup>(1,2,3)</sup> , W. Desmet <sup>(1,2)</sup>	
<i>(1) KU Leuven, Belgium</i>	
<i>(2) Flanders Make, Belgium</i>	
<i>(3) SIM M3 program, Belgium</i>	

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**PBNV2****Session Pass by noise**

Methods for low-noise pavement approval testing	2345
M. Haider <sup>(1)</sup> , R. Wehr <sup>(1)</sup>	
<i>(1) AIT Austrian Institute of Technology GmbH, Austria</i>	

A Frequency-Based Substructuring application on a transmission bracket J. Ortega Almirón <sup>(1,2)</sup> , F. Bianciardi <sup>(1)</sup> , P. Corbeels <sup>(1)</sup> , B. Bergen <sup>(3)</sup> , W. Desmet <sup>(2,4)</sup> (1) Siemens Industry Software NV, Belgium (2) KU Leuven, Belgium (3) Toyota Motor Europe NV/SA, Belgium (4) Flanders Make, Belgium	2351
Broadband, wide angle of incidence sound absorption enhancement using rigid-backing-free periodic composite structure via wave manipulation Z. Zhang <sup>(1,2)</sup> , E. Deckers <sup>(1,2)</sup> , C. Claeys <sup>(1,2)</sup> , W. Desmet <sup>(1,2)</sup> (1) KU Leuven, Belgium (2) Flanders Make, Belgium	2367
Improvements in Modal Parameter Estimation under the DERRP methodology N. Pandiya <sup>(1,2)</sup> , W. Desmet <sup>(1,3)</sup> (1) Department of Mechanical Engineering, KU Leuven, Belgium (2) Center of Competence for Vibration, Robert Bosch GmbH, Germany (3) DMMS Lab, Flanders Make Leuven, Belgium	2381
An investigation of allocation strategies for internalizing the impact from traffic noise J. Nygren <sup>(1)</sup> , S. Boij <sup>(1)</sup> , R. Rumpler <sup>(1)</sup> , C. J. O'Reilly <sup>(1)</sup> (1) KTH Royal Institute of Technology, Sweden	2395

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## PER

### Session Periodic structures and metamaterials

An adaptive electrodynamic metamaterial for robust absorption of vibration L. Singleton <sup>(1)</sup> , J. Cheer <sup>(1)</sup> , S. Daley <sup>(1)</sup> (1) Institute of Sound and Vibration Research, University of Southampton, United Kingdom	2405
Predicting the sound transmission through simply supported building elements using a modal periodic structure theory C. Decraene <sup>(1)</sup> , G. Lombaert <sup>(1)</sup> , E. Reynders <sup>(1)</sup> (1) KU Leuven, Belgium	2413
Numerical analysis of the stop band performance in finite partially treated resonant metamaterial plates L. Sangiuliano <sup>(1,3)</sup> , C. Claeys <sup>(1,3)</sup> , E. Deckers <sup>(1,2,3)</sup> , W. Desmet <sup>(1,3)</sup> (1) KU Leuven, Belgium (2) KU Leuven, Campus Diepenbeek, Belgium (3) Flander Make, Belgium	2425
Numerical investigation of periodic metamaterials F. Weber <sup>(1)</sup> , T. Hicks <sup>(1)</sup> , M. Miksch <sup>(1)</sup> , R. Rumpler <sup>(2)</sup> , G. Müller <sup>(1)</sup> (1) Technical University of Munich, Germany (2) KTH Royal Institute of Technology, Sweden	2441

Negative stiffness mechanisms for the broadening of low frequency bandgaps performance of Euler-Bernoulli resonators	2451
Q. Wu <sup>(1,2)</sup> , C. Droz <sup>(2,3,4)</sup> , P. Fossat <sup>(2)</sup> , M. Ichchou <sup>(2)</sup> , S. Xie <sup>(1)</sup>	
<i>(1) Xi'an Jiaotong University, China</i>	
<i>(2) Vibroacoustics and Complex Media Research Group, France</i>	
<i>(3) KU Leuven, Belgium</i>	
<i>(4) Flanders Make, Belgium</i>	
On the potential of meta-poro-elastic systems with small mass inclusions to achieve broad band a near-perfect absorption coefficient	2463
S. Ahsani <sup>(1,2)</sup> , R. Boukadia <sup>(1,2,3)</sup> , C. Droz <sup>(1,2)</sup> , T. G. Zielinski <sup>(5)</sup> , L. Jankowski <sup>(5)</sup> , C. Claeys <sup>(1,2)</sup> , W. Desmet <sup>(1,2)</sup> , E. Deckers <sup>(2,4)</sup>	
<i>(1) DMMS Lab, Flanders Make, Heverlee, Belgium</i>	
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<i>(3) Ecole Centrale de Lyon, France</i>	
<i>(4) KU Leuven, Diepenbeek Campus, Belgium</i>	
<i>(5) Institute of Fundamental Technological Research, Polish Academy of Sciences, Poland</i>	
Experimental identification of the material constitutive equation by means of forced sinusoidal excitation measurements	2473
S. Amadori <sup>(1)</sup> , G. Catania <sup>(1,2)</sup>	
<i>(1) Ciri-Mam, University of Bologna, Italy</i>	
<i>(2) Din, University of Bologna, Italy</i>	
Fast metamaterial design optimization using reduced order unit cell modeling	2487
L. Van Belle <sup>(1,2,3)</sup> , N. G. Rocha de Melo Filho <sup>(1,2)</sup> , M. Clasing Villanueva <sup>(1,2)</sup> , C. Claeys <sup>(1,2)</sup> , E. Deckers <sup>(1,4)</sup> , F. Naets <sup>(1,2)</sup> , W. Desmet <sup>(1,2)</sup>	
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<i>(3) SIM M3 program, Belgium</i>	
<i>(4) Department of Mechanical Engineering, Campus Diepenbeek, KU Leuven, Belgium</i>	
Design space exploration for resonant metamaterials using physics guided neural networks	2503
N. G. R. Melo Filho <sup>(1,2)</sup> , A. Angeli <sup>(1,2)</sup> , S. Van Ophen <sup>(1,2)</sup> , B. Pluymers <sup>(1,2)</sup> , C. Claeys <sup>(1,2)</sup> , E. Deckers <sup>(1,2)</sup> , W. Desmet <sup>(1,2)</sup>	
<i>(1) KU Leuven, Belgium</i>	
<i>(2) Flanders Make, Belgium</i>	
Optimized thermoformed metamaterial panel design with a foam core for improved noise insulation performance	2513
N. G. R. Melo Filho <sup>(1,2)</sup> , C. Claeys <sup>(1,2)</sup> , E. Deckers <sup>(1,2)</sup> , W. Desmet <sup>(1,2)</sup>	
<i>(1) KU Leuven, Belgium</i>	
<i>(2) DMMS Lab, Flanders Make</i>	
Actuation and measurement of nondispersive near-cut-on guided resonances in a sandwich structure	2525
C. Droz <sup>(1)</sup> , M. Ichchou <sup>(2)</sup> , O. Bareille <sup>(2)</sup> , W. Desmet <sup>(1)</sup>	
<i>(1) KU Leuven, Belgium</i>	
<i>(2) Ecole Centrale de Lyon, France</i>	
Modeling and analysis of a metamaterial beam with electromechanical resonators	2533
D. Martins <sup>(1)</sup> , W. M. Kuhnert <sup>(1)</sup> , P. J. P. Gonçalves <sup>(1)</sup>	
<i>(1) São Paulo State University (Unesp) Brazil</i>	

Metamaterials for groundborne vibration absorption in pillars G. Aguzzi <sup>(1)</sup> , A. Colombi <sup>(1)</sup> , V. Dertimanis <sup>(1)</sup> , E. N. Chatzi <sup>(1)</sup> <i>(1) ETH Zirich, Switzerland</i>	2545
A periodic electroacoustic waveguide for passive sound absorption A. M. Pasqual <sup>(1)</sup> , L. R. Cunha <sup>(1)</sup> , D. A. Rade <sup>(1)</sup> <i>(1) Aeronautics Institute of Technology - ITA, Brazil</i>	2555
Inertial amplified metamaterial for vibration isolation R. Zaccherini <sup>(1)</sup> , A. Colombi <sup>(1)</sup> , A. Palermo <sup>(2)</sup> , V. K. Dertimanis <sup>(1)</sup> , E. N. Chatzi <sup>(1)</sup> <i>(1) ETH Zirich, Switzerland</i> <i>(2) University of Bologna, Italy</i>	2563
<hr/>	
<b>RAIL</b>	
<b>Session Railway dynamics and ground vibrations</b>	
Wheel-track interaction in the presence of flats: dynamic modelling and experimental correlation I. Erdozain <sup>(1,2)</sup> , A. Alonso <sup>(2,3)</sup> , B. Blanco <sup>(1,2)</sup> <i>(1) Ceit, Spain</i> <i>(2) University of Navarra, Spain</i> <i>(3) CAF I+D, Spain</i>	2575
Experimental and numerical study on free field motion due to passage of high-speed train considering different types of soil A. A. Faizan <sup>(1)</sup> , O. Kirtel <sup>(1)</sup> , E. Celebi <sup>(2)</sup> , A. C. Zulfikar <sup>(4)</sup> , F. Goktepe <sup>(3)</sup> <i>(1) Sakarya University of Applied Sciences, Turkey</i> <i>(2) Sakarya University, Turkey</i> <i>(3) Bartin University, Turkey</i> <i>(4) Gebze Technical University, Turkey</i>	2585
NEOBALLAST – a new type of railway ballast – experimental validation of its vibration characteristics B. Stallaert <sup>(1)</sup> , M. Morata Royes <sup>(2)</sup> , S. Ambrosi <sup>(3)</sup> , T. Vanhonacker <sup>(1)</sup> , V. Fontserè Pujol <sup>(2)</sup> <i>(1) D2S International, Belgium</i> <i>(2) COMSA, Spain</i> <i>(3) Mapei SpA, Italy</i>	2599
A mid-frequency component of train-induced ground vibration due to scattered axle impulses and the irregularities of the soil L. Auersch <sup>(1)</sup> <i>(1) Federal Institute of Material Research and Testing, Germany</i>	2611
Track segment automated characterization via on-board vibration measurements: an Athens Metro case study I. A. Iliopoulos <sup>(1)</sup> , G. Vlachospyros <sup>(1)</sup> , N. Kaliorakis <sup>(1)</sup> , J. S. Sakellariou <sup>(1)</sup> , S. D. Fassois <sup>(1)</sup> , A. Deloukas <sup>(2)</sup> , G. Leoutsakos <sup>(2)</sup> , C. Giannakis <sup>(2)</sup> , E. Chronopoulos <sup>(2)</sup> , I. Tountas <sup>(2)</sup> , C. Mamaloukakis <sup>(3)</sup> <i>(1) University of Patras, Greece</i> <i>(2) Attiko Metro S.A., Greece</i> <i>(3) Urban Rail Transport S.A., Greece</i>	2627

On tailored signal processing tools for operational condition monitoring of railway switches and crossings	2639
--	------

M. D. G. Milosevic <sup>(1)</sup>, B. A. Pålsson <sup>(1)</sup>, A. Nissen <sup>(2)</sup>, H. Johansson <sup>(1)</sup>, J. C. O. Nielsen <sup>(1)</sup>

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Accounting for the influence of the free surface on the vibration response of underground railway tunnels: a new iterative method	2655
---	------

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## SD

### Session Structural dynamics: methods and case studies

Simulations of the dynamic behavior of a human subject to predict dynamic comfort features	2665
--	------

C. Blanchard <sup>(1,2)</sup>, T. Weisser <sup>(1)</sup>, L. Guérin <sup>(2)</sup>, A.-I. Mallet-Dacosta <sup>(2)</sup>, É. Aubry <sup>(1)</sup>

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Preliminary study on modelling and optimization of the rescue cushion system	2675
--	------

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Experimental dynamic identification of a deployable smallsat telescope	2685
--	------

J. Lanting <sup>(1)</sup>, W. De Munter <sup>(1)</sup>, T. Delabie <sup>(1)</sup>, D. Vandepitte <sup>(1)</sup>

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Reconstruction and analysis of the torsional excitation force component of a cutter suction dredger in hard rock conditions	2699
---	------

L. Vancauwenbergh <sup>(1,2)</sup>

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*(2) DEME NV, Belgium*

Model of an elevator system to characterize the influence of the isolators on the vibration transmission	2715
--	------

A. Erenchun <sup>(1)</sup>, B. Blanco <sup>(1)</sup>, B. Wang <sup>(2)</sup>, L. Kari <sup>(2)</sup>, L. Irazu <sup>(3)</sup>, N. Gil-Negrete <sup>(4)</sup>

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*(3) Orona EIC, Spain*

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Enabling harmonic balance methods to be applied for distributed geometric nonlinearities in structural dynamics	2731
---	------

S. Lian <sup>(1)</sup>, F. E. Haddad <sup>(1)</sup>, L. Salles <sup>(1)</sup>

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Dynamic modeling of a morphing beam structure using parametric nonlinear regressive method. D. Maroju <sup>(1)</sup> , S. Murugan <sup>(1)</sup> (1) Indian Institute of Technology, India	2745
Optimization of a gearbox taking into account dynamic performance and assemblability P. Eremeev <sup>(1,2)</sup> , I. Melckenbeeck <sup>(3)</sup> , A. De Cock <sup>(3)</sup> , H. Devriendt <sup>(1,2)</sup> , W. Desmet <sup>(1,2)</sup> (1) KU Leuven, Belgium (2) Flanders Make, Belgium (3) Flanders Make, Belgium	2753
Demonstration of energy harvesting with piezoelectrets in aircraft structures with a simplified structure based on a NASA wingbox model H. Holzmann <sup>(1)</sup> , J. Schmelz <sup>(1)</sup> , H. Atzrodt <sup>(2)</sup> , Y. J. Park <sup>(2)</sup> (1) Technical University Darmstadt, Germany (2) Fraunhofer Institute for Structural Durability and System Reliability LBF, Germany	2763
Electromechanical coupling and energy conversion in a PZT-coated Timoshenko beam based on acoustic black hole effect L. Zhang <sup>(1)</sup> , L. Cheng <sup>(1)</sup> , G. Kerschen <sup>(2)</sup> (1) The Hong Kong Polytechnic University, The People's Republic of China (2) University of Liège, Belgium	2775
<hr/>	
<b>SHM</b>	
<b>Session Structural health monitoring (Structures)</b>	
Constraining Gaussian processes for grey-box acoustic emission source localisation M. R. Jones <sup>(1)</sup> , T. J. Rogers <sup>(1)</sup> , P. Gardner <sup>(1)</sup> , E. J. Cross <sup>(1)</sup> (1) The University of Sheffield, United Kingdom	2789
Comparative study of time delay estimators for steady-state and transient acoustic leak signals N. Uchendu <sup>(1)</sup> , J. M. Muggleton <sup>(1)</sup> , E. Rustighi <sup>(1)</sup> , P. R. White <sup>(1)</sup> (1) Institute of Sound and Vibration Research (ISVR), University of Southampton, United Kingdom	2801
Machine learning and sensor swarm for structural health monitoring of a bridge N. Roveri <sup>(1)</sup> , S. Milana <sup>(1)</sup> , A. Culla <sup>(1)</sup> , P. Conte <sup>(1)</sup> , G. Pepe <sup>(1)</sup> , F. Mezzani <sup>(1)</sup> , A. Carcaterra <sup>(1)</sup> (1) University of Rome, Italy	2817
Automated strain-based operational modal analysis of a steel railway bridge: influence of temperature vs. influence of retrofitting D. Anastasopoulos <sup>(1)</sup> , G. De Roeck <sup>(1)</sup> , E. P. B. Reynders <sup>(1)</sup> (1) KU Leuven, Belgium	2825
Fast loose rivet detection by using Scanning Laser Doppler Vibrometry M. Stamm <sup>(1,2)</sup> , S. Schlemme-Weber <sup>(3)</sup> , S. Appl <sup>(3)</sup> , J. Köser <sup>(3)</sup> , H. Pfeiffer <sup>(1)</sup> (1) KU Leuven, Belgium (2) Brussels Airlines, Belgium (3) Optomet GmbH, Germany	2843
Simulation-assisted approach for Non-Destructive Testing of composite components. K. Minchenkov <sup>(1)</sup> , V. Leshchev <sup>(1)</sup> , A. Matveeva <sup>(2)</sup> , E. Di Lorenzo <sup>(2)</sup> , S. Nikolaev <sup>(1)</sup> (1) Skolkovo Institute of Science and Technology, Russian Federation (2) Siemens Digital Industry Software, Belgium	2855

Crack-type damage detection and localization of a thick composite sandwich structure based on Convolutional Neural Networks	2871
Z. Liu <sup>(1)</sup> , M. Ardabilian <sup>(2)</sup> , A. Zine <sup>(3)</sup> , M. Ichchou <sup>(1)</sup>	
(1) <i>Laboratory of Tribology and Systems Dynamics, Ecole Centrale Lyon, France</i>	
(2) <i>Laboratory for Image Processing and Information Systems, Ecole Centrale Lyon, France</i>	
(3) <i>Institut Camille Jordan, Ecole Centrale Lyon, France</i>	
A damage identification strategy in beams based on natural frequencies shift	2883
A. Dubey <sup>(1)</sup> , V. Denis <sup>(1)</sup> , R. Serra <sup>(1)</sup>	
(1) <i>Universite de Tours, France</i>	
Lamb wave mode separation using dispersion curves	2891
M. Haywood-Alexander <sup>(1)</sup> , K. Worden <sup>(1)</sup> , G. Dobie <sup>(2)</sup> , T. J. Rogers <sup>(1)</sup> , N. Dervilis <sup>(1)</sup>	
(1) <i>The University of Sheffield, United Kingdom</i>	
(2) <i>University of Strathclyde, United Kingdom</i>	
Coherence-based nearfield acoustic holography for damage detection in plates	2899
N. Auquier <sup>(1)</sup> , J. Cuenca <sup>(1)</sup> , L. De Ryck <sup>(1)</sup>	
(1) <i>Siemens Industry Software NV, Belgium</i>	
Classifier fusion for vibrational NDT of complex metallic turbine blades	2909
V. Yaghoubi <sup>(1,2)</sup> , L. Cheng <sup>(1,2)</sup> , W. Van Paepengem <sup>(1)</sup> , M. Kersemans <sup>(1)</sup>	
(1) <i>Ghent University, Belgium</i>	
(2) <i>SIM M3 program, Belgium</i>	
Using longitudinal metallic stringers to reduce wave attenuation for water leakage detection in plastic pipes	2921
L. P. M. Lima <sup>(1)</sup> , M. A. Bazani <sup>(1)</sup> , A. T. Paschoalini <sup>(1)</sup>	
(1) <i>São Paulo State University, Brazil</i>	
Sound-based fault isolation using end-to-end learning with convolutional-recurrent neural networks in a commercial wire bonder machine	2933
K. Anginthaya <sup>(1)</sup> , D. Kostić <sup>(2)</sup> , F. Boughorbel <sup>(2)</sup> , M. Ergin <sup>(2)</sup> , I. Lopez Arteaga <sup>(1)</sup>	
(1) <i>Eindhoven University of Technology, The Netherlands</i>	
(2) <i>ASM Center of Competency, The Netherlands</i>	
Bragg resonance in pressurized conduits anchored against longitudinal movement	2949
M. Louati <sup>(1)</sup> , D. Ferras <sup>(2)</sup> , M. S. Ghidaoui <sup>(1)</sup>	
(1) <i>Hong Kong Univ. of Science and Technology, Hong Kong</i>	
(2) <i>IHE Delft Institute for Water Education, the Netherlands</i>	
Structural health monitoring and fatigue crack growth under random loads	2961
D. Marques <sup>(1,2)</sup> , D. Vandepitte <sup>(1)</sup> , V. Tita <sup>(2)</sup>	
(1) <i>KU Leuven, Belgium</i>	
(2) <i>University of São Paulo, Brazil</i>	
Vibration-based robust damage localization under varying operating conditions via the data-based Functional Model method	2973
T.-C.I. Aravanis <sup>(1)</sup> , J. S. Sakellariou <sup>(1)</sup> , S. D. Fassois <sup>(1)</sup>	
(1) <i>University of Patras, Greece</i>	

Mahalonobis classification system for quality classification of complex metallic turbine blades	2985
---	------

L. Cheng <sup>(1,2)</sup>, V. Yaghoubi <sup>(1,2)</sup>, W. Van Paepelgem <sup>(1)</sup>, M. Kersemans <sup>(1)</sup>

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Vibration response data-based robust damage detection under assembly-induced uncertainty: Can supervised statistical time series methods boost performance?	2995
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## SC

### Session Substructuring and Coupling

Experimental results of nonlinear structure coupled through nonlinear connecting elements	3011
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F. Latini <sup>(1)</sup>, J. Brunetti <sup>(2)</sup>, M. Kwarta <sup>(3)</sup>, M. S. Allen <sup>(3)</sup>, W. D'Ambrogio <sup>(2)</sup>, A. Fregolent <sup>(1)</sup>

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Dynamic substructuring with time variant coupling conditions for the analysis of friction induced vibrations	3023
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J. Brunetti <sup>(1)</sup>, W. D'Ambrogio <sup>(1)</sup>, A. Fregolent <sup>(2)</sup>

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Dynamic substructuring for multilevel spent nuclear fuel containers with high modal density	3033
---	------

O. Ezvan <sup>(1)</sup>, X. Zeng <sup>(2)</sup>, R. Ghanem <sup>(2)</sup>, B. Gencturk <sup>(2)</sup>

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Concurrent design method for controlling resonance characteristics using frequency based substructuring	3043
---	------

S. Yoshikawa <sup>(1)</sup>, Y. Matsumura <sup>(2)</sup>, M. Inaba <sup>(3)</sup>, K. Furuya <sup>(2)</sup>, J. Semura <sup>(3)</sup>

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## TVD

### Session Tuned Vibration Absorbers and Dampers

Low rotational-speed aspects of centrifugal pendulum vibration absorbers	3053
--	------

E. R. Gomez <sup>(1,2)</sup>, I. Lopez Arteaga <sup>(2,3)</sup>, L. Kari <sup>(2)</sup>

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A coupled hybrid damper concept for the reduction of torsional vibrations and rotational irregularities	3065
---	------

G. Paillet <sup>(1)</sup>, D. Rémond <sup>(1)</sup>, S. Chesné <sup>(1)</sup>

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Tuned liquid damper for response control of a wooden mast structure A. M. Bogdan <sup>(1)</sup> , P. Lysgaard <sup>(1)</sup> , S. D. R. Amador <sup>(1)</sup> , E. Katsanos <sup>(1)</sup> , R. Brincker <sup>(1)</sup> <i>(1) Technical University of Denmark, Denmark</i>	3077
Design and implementation of TID for vibration suppression H. Dogan <sup>(1)</sup> , N. D. Sims <sup>(1)</sup> , D. J. Wagg <sup>(1)</sup> <i>(1) University of Sheffield, United Kingdom</i>	3087
Vibration control with electromagnetic and piezoelectric time-varying vibration absorbers: a comparative experimental study L. Dal Bo <sup>(1)</sup> , E. Turco <sup>(1)</sup> , P. Gardonio <sup>(1)</sup> <i>(1) Università degli Studi di Udine, Italy</i>	3097
Micro vibration mitigation in space applications T. Demerville <sup>(1)</sup> , D. Allaei <sup>(2)</sup> <i>(1) SMAC, France</i> <i>(2) Shocktech, Inc., United States of America</i>	3113
Optimal tuning strategy for chatter avoidance in thin-walled part milling by means of tuneable clamping table J. Pena-Barrio <sup>(1)</sup> , M. Sanz-Calle <sup>(1)</sup> , G. Aguirre <sup>(1)</sup> , A. Iglesias <sup>(1)</sup> , G. Stepan <sup>(2)</sup> , L. N. López de Lacalle <sup>(3)</sup> , J. Munoa <sup>(1)</sup> , Z. Dombovari <sup>(2)</sup> <i>(1) Ideko, Spain</i> <i>(2) Budapest University of Technology and Economics, Hungary</i> <i>(3) University of the Basque Country, Spain</i>	3119
Chatter control strategies using an ideal semi-active inerter M. Tipuric <sup>(1)</sup> , D. J. Wagg <sup>(1)</sup> , N. D. Sims <sup>(1)</sup> <i>(1) University of Sheffield, United Kingdom</i>	3133

---

## NVH

### Session Vehicle noise and vibration (NVH)

Time-domain response reconstruction and load identification for a bogie frame from a high-speed train M. Wang <sup>(1)</sup> , X. Sheng <sup>(2)</sup> <i>(1) Southwest Jiaotong University, China</i> <i>(2) Shanghai University of Engineering Science, China</i>	3145
AC loop NVH structure-borne performance: virtual design and validation M. Biasiolo <sup>(1)</sup> , M. Meneguzzo <sup>(1)</sup> , S. Mola <sup>(2)</sup> , R. Zanframundo <sup>(2)</sup> <i>(1) Centro Ricerche FIAT S.c.P.A., Italy</i> <i>(2) FCA S.P.A., Italy</i>	3161
On the derivation of air spring model parameters of a passenger rail vehicle suspension based on finite element model I. Menda-Garcia <sup>(1)</sup> , N. Gil-Negrete <sup>(1,2)</sup> , A. Pradera-Mallabiabarrena <sup>(1)</sup> , F. J. Nieto <sup>(2)</sup> <i>(1) Tecnun-Universidad de Navarra, Spain</i> <i>(2) CEIT, Spain</i>	3177

A numerical model for NVH analysis of gearboxes employed on agricultural equipment A. Gabrielli <sup>(1)</sup> , F. Pizzolante <sup>(1)</sup> , E. Soave <sup>(1)</sup> , M. Battarra <sup>(1)</sup> , C. Mazzeo <sup>(2)</sup> , M. Tarabra <sup>(2)</sup> , E. Fava <sup>(3)</sup> , E. Mucchi <sup>(1)</sup>	3191
(1) Università di Ferrara, Italy	
(2) FEV Italia, Italy	
(3) Comer Industries SpA, Italy	
Validation of multibody NVH gearbox calculations with order based modal analysis and measurement of operational bearing forces D. Werner <sup>(1)</sup> , L. Scurria <sup>(2)</sup> , E. Di Lorenzo <sup>(2)</sup> , B. Graf <sup>(1)</sup> , J. Neher <sup>(1)</sup> , B. Wender <sup>(1)</sup>	3205
(1) University of Applied Sciences of Ulm, Germany	
(2) Siemens Industry Software NV, Belgium	
Pointwise-constrained optimal control applied to comfort improvement in railway vehicles with adaptive pneumatic suspensions M. Felix <sup>(1)</sup> , E. Palomares <sup>(1)</sup> , A. L. Morales <sup>(1)</sup> , A. J. Nieto <sup>(1)</sup> , J. M. Chicharro <sup>(1)</sup> , P. Pintado <sup>(1)</sup>	3221
(1) University of Castilla-La Mancha, Spain	
Characterization of EV/HEV NVH issues using electrical machine tooth FRF K. Degrendele <sup>(1)</sup> , J. Le Besnerais <sup>(1)</sup> , R. Pile <sup>(1,2,3)</sup> , P. Gning <sup>(1)</sup> , E. Devillers <sup>(1)</sup>	3235
(1) EOMYS ENGINEERING, France	
(2) Univ. Lille, France	
(3) Univ. Artois, France	
Noise and vibration development in early stage of design - introduction of stiffness principal axis and its application – Y. Yabuki <sup>(1)</sup> , T. Yoshimura <sup>(1)</sup>	3251
(1) Tokyo Metropolitan University, Japan	
Low frequency vibration in Heavy Machinery – preliminary identification and control J. S. Wieckowski <sup>(1)</sup> , D. Pietrusiak <sup>(1)</sup> , W. Rafajłowicz <sup>(1)</sup>	3261
(1) Wrocław University of Science and Technology, Poland	
Clustering of vehicle door designs focused on vibration response analysis V. Iliopoulos <sup>(1)</sup> , S. Jonckheere <sup>(2)</sup> , M. Panzeri <sup>(4)</sup> , P. Eyckens <sup>(1)</sup> , C. Lopez <sup>(1)</sup> , J. Goos <sup>(1)</sup> , J. Stroobants <sup>(1)</sup> , K. De Grave <sup>(1)</sup> , B. Pluymer <sup>(2)</sup> , W. Desmet <sup>(2)</sup> , F. De Brujin <sup>(3)</sup> , J. P. Heijster <sup>(3)</sup>	3271
(1) Flanders Make, Belgium	
(2) KU Leuven, Belgium	
(3) AutomotiveNL, The Netherlands	
(4) NOESIS Solutions N.V., Belgium	
Machine learning and system identification for the estimation of data-driven models: an experimental case study illustrated on a tire-suspension system M. Elkafafy <sup>(1)</sup> , P. Z. Csurcsia <sup>(2)</sup> , B. Cornelis <sup>(1)</sup> , E. Risaliti <sup>(1)</sup> , K. Janssens <sup>(1)</sup>	3287
(1) Siemens Industry Software, Belgium	
(2) Vrije Universiteit Brussel, Belgium	
Case study on noise identification of an electric vehicle using psychoacoustic metrics G. P. Guimarães <sup>(1)</sup> , M. Schmidt <sup>(2)</sup> , T. Bartel <sup>(2)</sup> , M. Matthias <sup>(2)</sup>	3303
(1) UFOP, Brazil	
(2) Fraunhofer LBF, Germany	

Application of time domain sensitivity analysis for structural transient response K. Akazawa <sup>(1)</sup> , T. Yosimura <sup>(1)</sup> , T. Oka <sup>(2)</sup> , H. Tanaka <sup>(2)</sup> , K. Inoue <sup>(2)</sup> , T. Fujita <sup>(2)</sup> <i>(1) Tokyo Metropolitan University, Japan</i> <i>(2) Nissan Motor Co., Japan</i>	3319
Deep learning for predicting and understanding brake squeal M. Stender <sup>(1)</sup> , N. Hoffmann <sup>(1,2)</sup> <i>(1) Hamburg University of Technology, Germany</i> <i>(2) Imperial College London, United Kingdom</i>	3327
Hybrid methodology for pressure pulse prediction: hydroacoustic characterization of an active component T. Gras <sup>(1)</sup> , E. Camus <sup>(1)</sup> <i>(1) CETIM, France</i>	3339
Airborne transfer path analysis for an e-compressor T. Mueller <sup>(1)</sup> , M. Haeussler <sup>(1)</sup> , S. Sedlmair <sup>(2)</sup> , D. J. Rixen <sup>(3)</sup> <i>(1) Vibes Technology BV, Netherlands, The</i> <i>(2) BMW Group, Germany</i> <i>(3) Technical University of Munich (TUM), Germany</i>	3351
Application of dynamic substructuring in NVH design of electric drivetrains P. Wagner <sup>(1)</sup> , A. P. Hülsmann <sup>(2)</sup> , M. V. van der Seijs <sup>(3)</sup> <i>(1) AMITRONICS Angewandte Mikromechatronik GmbH, Germany</i> <i>(2) BMW Group, Germany</i> <i>(3) Vibes.Techology, The Netherlands</i>	3365
Data-based powertrain mounts characterization for driveline booming predictions utilizing virtual sensing A. Ricci <sup>(1,2)</sup> , L. Bregant <sup>(2)</sup> , F. Albertz <sup>(1)</sup> <i>(1) BMW, Germany</i> <i>(2) Università degli Studi di Trieste, Italy</i>	3383

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## VAM

### Session Vibro-acoustic modelling and prediction

Vibroacoustic modeling of a ballistic re-entry vehicle and validation through diffuse field acoustic testing M. Claeyns <sup>(1)</sup> <i>(1) CEA CESTA, France</i>	3395
Prediction of structure borne noise and vibration for resiliently coupled equipment using blocked forces and substructuring F. Cabaret <sup>(1)</sup> , A. S. Elliott <sup>(2)</sup> , O. Farrell <sup>(1)</sup> , K. Samami <sup>(1)</sup> , A. T. Moorhouse <sup>(2)</sup> <i>(1) Farrat Isolevel Ltd, United Kingdom</i> <i>(2) University of Salford, United Kingdom</i>	3407

Efficient adaptive order poroelastic material modelling within modal vibro-acoustic system models S. Jonckheere <sup>(1,2)</sup> , H. Bériot <sup>(3)</sup> , O. Dazel <sup>(4)</sup> , W. Desmet <sup>(1,2)</sup> (1) Flanders Make, Belgium (2) KU Leuven, Belgium (3) Siemens Industry Software, Belgium (4) Le Mans Université, France	3419
Accelerated vibro-acoustics of porous domains via a novel coupled multiscale finite element method A. Sreekumar <sup>(1)</sup> , S. P. Triantafyllou <sup>(2)</sup> , F.-X. Bécot <sup>(3)</sup> , F. Chevillotte <sup>(3)</sup> , L. Jaouen <sup>(3)</sup> (1) University of Nottingham, United Kingdom (2) National Technical University of Athens, Greece (3) Matelys - Research Lab, France	3435
Sound insulation prediction of double walls on elastic layers J. Van den Wyngaert <sup>(1)</sup> , M. Schevenels <sup>(1)</sup> , E. Reynders <sup>(1)</sup> (1) KU Leuven, Belgium	3451
Numerical modelling of low-frequency acoustically induced vibration in gas pipeline systems O. M. Silva <sup>(1)</sup> , D. M. Tuozzo <sup>(1)</sup> , J. G. Vargas <sup>(1)</sup> , L. V. Kulakauskas <sup>(1)</sup> , A. F. Fernandes <sup>(1)</sup> , J. L. Souza <sup>(1)</sup> , A. P. Rocha <sup>(1)</sup> , A. Lenzi <sup>(1)</sup> , R. Timbó <sup>(2)</sup> , C. O. Mendonça <sup>(2)</sup> , A. T. Brandão <sup>(2)</sup> (1) Federal University of Santa Catarina, Brazil (2) Petrobras, Brazil	3463
<hr/>	
<b>WIND</b>	
<b>Session Wind turbine dynamics</b>	
Wind turbine drive-train condition monitoring through tower vibrations measurement and processing D. Astolfi <sup>(1)</sup> , A. P. Daga <sup>(2)</sup> , F. Natili <sup>(1)</sup> , F. Castellani <sup>(1)</sup> , L. Garibaldi <sup>(2)</sup> (1) University of Perugia, Italy (2) Polytechnic University of Turin, Italy	3481
Experimental analysis of yaw by individual pitch control F. Natili <sup>(1)</sup> , F. Campagnolo <sup>(2)</sup> , F. Castellani <sup>(1)</sup> , C. L. Bottasso <sup>(2)</sup> , D. Astolfi <sup>(1)</sup> , M. Becchetti <sup>(1)</sup> (1) Università degli Studi di Perugia, Italy (2) Technische Universität München, Germany	3493
Comparison of wind turbine blade models through correlation with experimental modal data R. Janeliukstis <sup>(1,3)</sup> , R. Riva <sup>(1)</sup> , E. Di Lorenzo <sup>(2)</sup> , M. Luczak <sup>(1)</sup> , S. C. Yeniceli <sup>(1)</sup> , S. H. Madsen <sup>(1)</sup> , B. Peeters <sup>(2)</sup> (1) Technical University of Denmark, Denmark (2) Siemens Industry Software NV, Belgium (3) Riga Technical University, Latvia	3507
Vibration analysis and system identification for a vertical-axis wind turbine installation in built environment F. Castellani <sup>(1)</sup> , F. Natili <sup>(1)</sup> , D. Astolfi <sup>(1)</sup> , M. Peppoloni <sup>(2)</sup> , A. Hirschl <sup>(2)</sup> (1) University of Perugia, Italy (2) FH Technikum Wien, Austria	3515

Wind turbine blade and generator test specimen for evaluating a passive vibration reduction concept based on granular materials B. B. Prasad <sup>(1)</sup> , F. Duvigneau <sup>(1)</sup> , E. Woschke <sup>(1)</sup> , D. Juhre <sup>(1)</sup> <i>(1) Otto-von-Guericke-Universität, Germany</i>	3525
Farm-wide dynamic event classification as load input for wind turbine drivetrain lifetime prognosis P.-J. Daems <sup>(1)</sup> , T. Verstraeten <sup>(1)</sup> , C. Peeters <sup>(1)</sup> , A. Nowé <sup>(1)</sup> , J. Helsen <sup>(1)</sup> <i>(1) Vrije Universiteit Brussel, Belgium</i>	3541
Fatigue life of wind-turbine using a novel aerodynamic damping identification method C. Chen <sup>(1)</sup> , P. Fromme <sup>(2)</sup> , X. Hua <sup>(1)</sup> , P. Duffour <sup>(2)</sup> <i>(1) Hunan University, China</i> <i>(2) University College London, UK</i>	3551
Attention-guided cross-layer feature fusion convolutional neural network for vibration signal denoising D. Peng <sup>(1,2)</sup> , C. Liu <sup>(1,2)</sup> , W. Desmet <sup>(1,2)</sup> , K. Gryllias <sup>(1,2)</sup> <i>(1) KU Leuven, Belgium</i> <i>(2) Flanders Make, Belgium</i>	3563
A virtual sensing approach to operational modal analysis for wind turbine blades S. Vettori <sup>(1,2)</sup> , E. Di Lorenzo <sup>(1)</sup> , B. Peeters <sup>(1)</sup> , E. Chatzi <sup>(2)</sup> <i>(1) Siemens Digital Industries Software, Belgium</i> <i>(2) ETH Zürich, Switzerland</i>	3579

# USD2020 PAPERS

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## USDUIQ

### Session USD - Uncertainty Identification and Quantification

A spatiotemporal dual Kalman filter for the estimation of states and distributed inputs in dynamical systems	3591
K. E. Tatsis <sup>(1)</sup> , V. K. Dertimanis <sup>(1)</sup> , T. J. Rogers <sup>(2)</sup> , E. J. Cross <sup>(2)</sup> , K. Worden <sup>(2)</sup> , E. N. Chatzi <sup>(1)</sup>	
(1) ETH Zurich, Switzerland	
(2) University of Sheffield, UK	
On robust equation discovery: a sparse Bayesian and Gaussian process approach	3599
Y. C. Zhu <sup>(1)</sup> , P. Gardner <sup>(1)</sup> , R. Fuentes <sup>(1)</sup> , D. J. Wagg <sup>(1)</sup> , E. Cross <sup>(1)</sup> , R. J. Barthorpe <sup>(1)</sup>	
(1) The University of Sheffield, United Kingdom	
A grey-box model for wave loading prediction with uncertainty propagation	3611
D. J. Pitchforth <sup>(1)</sup> , T. J. Rogers <sup>(1)</sup> , U. T. Tygesen <sup>(2)</sup> , E. J. Cross <sup>(1)</sup>	
(1) University of Sheffield, United Kingdom	
(2) Ramboll Energy, Denmark	
On decision-making for adaptive models combining physics and data	3623
A. J. Hughes <sup>(1)</sup> , R. J. Barthorpe <sup>(1)</sup> , P. Gardner <sup>(1)</sup> , D. J. Wagg <sup>(1)</sup> , T. J. Rogers <sup>(1)</sup> , E. J. Cross <sup>(1)</sup> , K. Worden <sup>(1)</sup>	
(1) University of Sheffield, United Kingdom	
A sparse Bayesian approach to model structure selection and parameter estimation of dynamical systems using spike-and-slab priors	3639
R. Nayek <sup>(1)</sup> , K. Worden <sup>(1)</sup> , E. J. Cross <sup>(1)</sup> , R. Fuentes <sup>(2)</sup>	
(1) University of Sheffield, United Kingdom	
(2) Callsign, United Kingdom	
Uncertainty quantification in modal characteristics of viscoelastic damping structures by using integration approach of adaptive dimension reduction method and stochastic collocation method	3655
T. Wang <sup>(1)</sup> , C. Xu <sup>(1)</sup> , N. Guo <sup>(1)</sup>	
(1) Northwestern Polytechnical University, School of Astronautics, China	
Data-driven strain prediction models and fatigue damage accumulation	3667
S. Gibson <sup>(1)</sup> , T. J. Rogers <sup>(1)</sup> , E. J. Cross <sup>(1)</sup>	
(1) University of Sheffield, United Kingdom	
Determining fuzzy priorities for hand-held vibration experiment	3677
J. Z. Szabo <sup>(1)</sup> , P. Bakucz <sup>(1)</sup>	
(1) Óbuda University, Hungary	

**USDMP****Session USD - Uncertainty modelling and propagation**

Computational aspects of updating contact interface models in assembled structures T. Chatterjee <sup>(1)</sup> , H. Jalali <sup>(2)</sup> , H. H. Khodaparast <sup>(1)</sup> , M. I. Friswell <sup>(1)</sup>	3691
<i>(1) Swansea University, United Kingdom</i>	
<i>(2) Arak University of Technology, Iran</i>	
Imprecise stochastic dynamics via operator norm theory M. Faes <sup>(1)</sup> , M. Valdebenito <sup>(2)</sup> , D. Moens <sup>(1)</sup>	3707
<i>(1) KU Leuven, Belgium</i>	
<i>(2) Santa Maria University Valparaiso, Chile</i>	
Stochastic sensitivity analysis: determination of the best approximation of Sobol' sensitivity indices C. Hübner <sup>(1)</sup>	3719
<i>(1) Leibniz Universität Hannover, Germany</i>	
Local interval fields for spatial inhomogeneous uncertainty modelling in structural dynamics R. Callens <sup>(1)</sup> , M. Faes <sup>(1)</sup> , D. Moens <sup>(1)</sup>	3735
<i>(1) KU Leuven, Belgium</i>	
Recursive Gaussian processes for discrepancy modeling R. Feldmann <sup>(1)</sup> , C. M. Gebh <sup>(1)</sup> , M. Schaeffner <sup>(1)</sup> , T. Melz <sup>(1,2)</sup>	3749
<i>(1) Technical University Darmstadt, Germany</i>	
<i>(2) Fraunhofer Institute for Structural Durability and System Reliability LBF, Germany</i>	
Random matrix eigenvalue problems in structural dynamics: an iterative approach S. Adhikari <sup>(1)</sup>	3759
<i>(1) Swansea University, United Kingdom</i>	
On physical realizability for inverse structural designs: bounding the least eigenvalue of an unknown mass matrix P. Cheema <sup>(1)</sup> , G. A. Vio <sup>(1)</sup>	3773
<i>(1) The University of Sydney, Australia</i>	

**USDA****Session USD – Applications**

A two-dimensional lattice with band gaps robust to mechanical variability L. H. M. S. Ribeiro <sup>(1)</sup> , V. F. D. Poggetto <sup>(1)</sup> , D. Beli <sup>(2)</sup> , A. T. Fabro <sup>(3)</sup> , J. R. F. Arruda <sup>(1)</sup>	3783
<i>(1) University of Campinas, Brazil</i>	
<i>(2) University of São Paulo, Brazil</i>	
<i>(3) University of Brasília, Brazil</i>	
Investigation of the effect of non-uniform discs clearance on the drag torque of a DCT wet friction clutch N. Rogkas <sup>(1)</sup> , V. Spitas <sup>(1)</sup>	3799
<i>(1) National Technical University of Athens, Greece</i>	

Robust design of tuned mass dampers attached to host structures containing uncertainties in the form of fuzzy parameters	3811
E. Crollen-Vandromme <sup>(1)</sup> , S. Pathak <sup>(1)</sup> , P. Soltani <sup>(2)</sup> , C. Collette <sup>(1,3)</sup> , A. Deraemaeker <sup>(1)</sup>	
<i>(1) Université libre de Bruxelles, Belgium</i>	
<i>(2) Coventry University, England</i>	
<i>(3) Université de Liège, Belgium</i>	
Component-level impact performance assessment under spatially uncertain boundary conditions	3825
C. van Mierlo <sup>(1)</sup> , L. Burmberger <sup>(2)</sup> , M. Daub <sup>(2)</sup> , F. Duddeck <sup>(2)</sup> , M. Faes <sup>(1)</sup> , D. Moens <sup>(1)</sup>	
<i>(1) KU Leuven, Belgium</i>	
<i>(2) Technical University of Munich, Germany</i>	
Pragmatic uncertainty bounds on modal parameters from an offshore wind turbine and its supporting structure	3841
J. Kjeld <sup>(1,2)</sup> , A. Brandt <sup>(1)</sup>	
<i>(1) University of Southern Denmark, Denmark</i>	
<i>(2) Vattenfall Vindkraft A/S, Denmark</i>	
On the quantification of structural uncertainties of blades and their effect on wind turbine structural loads	3853
P. Gonzaga <sup>(1,2)</sup> , K. Worden <sup>(2)</sup> , N. Dervilis <sup>(2)</sup> , N. Stevanovic <sup>(1)</sup> , L. Bernhammer <sup>(1)</sup> , H. Toft <sup>(1)</sup>	
<i>(1) Siemens Gamesa Renewable Energy, Denmark</i>	
<i>(2) The University of Sheffield, United Kingdom</i>	
Power mapping: a wind turbine performance indicator in population-based structural health monitoring	3863
W. Lin <sup>(1)</sup> , K. Worden <sup>(1)</sup> , A. E. Maguire <sup>(2)</sup> , E. J. Cross <sup>(1)</sup>	
<i>(1) Dynamics Research Group, University of Sheffield, United Kingdom</i>	
<i>(2) Vattenfall Wind Power, Scotland</i>	
A new mathematical model for cracked beams with uncertain boundary conditions	3871
G.-R. Gillich <sup>(1)</sup> , D. Nedelcu <sup>(1)</sup> , M. Abdel Wahab <sup>(2)</sup> , M. Pop <sup>(1)</sup> , C. O. Hamat <sup>(1)</sup>	
<i>(1) Universitatea "Eftimie Murgu" din Resita, Romania</i>	
<i>(2) University of Ghent, Belgium</i>	
Quantification of uncertainties in nonlinear vibrations of turbine blades with underplatform dampers	3885
S. Bhatnagar <sup>(1)</sup> , J. Yuan <sup>(1)</sup> , A. Fantetti <sup>(1)</sup> , E. Denimal <sup>(1)</sup> , L. Salles <sup>(1)</sup>	
<i>(1) Imperial College London, United Kingdom</i>	