



Day 1	13 th July
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08:00-09:00	Registration
09:00-09:30	Opening Cerimony
09:30-11:00	Plenary session
11:00-11:30	Coffee-break
11:30-13:00	Parallel sessions
13:00-14:30	Lunch
14:30-16:00	Plenary session
16:00-16:30	Coffee-break
16:30-18:15	Parallel sessions

18:30	Bus – Reception
19:00	Reception at Círculo Universitário

Day 2	14 th July
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09:00-11:00	Plenary session
11:00-11:30	Coffee-break
11:30-13:00	Parallel sessions
13:00-14:30	Lunch
14:30-16:00	Plenary session
16:00-16:30	Coffee-break
16:30-18:00	Parallel sessions

18:15	Bus – Banquet
20:00	Banquet

Day 3	15 th July
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09:00-10:30	Plenary session
10:30-11:00	Coffee-break
11:00-13:00	Parallel sessions
13:00-14:30	Lunch
14:30-16:00	Plenary session
16:00-16:30	Coffee-break
16:30-17:45	Parallel sessions

17:45 Closing Cerimony

MONDAY, 13 JULY - MORNING**9:30-11:00 | Invited Lectures / Plenary Session (Auditorium)****Chair: W. Ostachowicz**

Radar-based measurement of deflections on bridges and large structures: advantages, limitations and possible applications

C. Gentile

Distributed sensing of strain and temperature under complex conditions

A. Güemes

Solid-state actuators with inherent sensory capabilities

H. Janocha & K. Kuhn

11:30-13:00 | Papers / Parallel Session (Auditorium) - Topic 1**Chair: H. Janocha**

Wireless sensor network design and performance validation for measurements in aircraft strength ground testing

J. Wu, S. Yuan, Z.L. Wang & Y Wang

Novel sensing head geometry based on smart composite with embedded FBGs for strain and temperature discrimination

O. Frazão, C. Frias, A. Vieira, L. Amaral, I. Dias, J. M. Baptista & A. T. Marques

Fiber Bragg Gratings application for strain measurements of Terfenol-D based composites

P. Gasior, J. Kaleta, D. Lewandowski & R. Mech

Ballistic impact monitoring of glass fibers composites by Fiber Bragg Grating Sensors

V. Antonucci, M. Giordano, A. Laudati & A. Cusano

Distributed fiber optical measurement system for localization of loss-induced perturbation

V. Spirin, S. Miridonov, E. Mitrani, S. Durazo & M. Castro

11:30-13:00 | Papers / Parallel Session (Room B032) - Topic 5**Chair: G. Feltrin**

Research on structural control at VIBEST / FEUP

C. Moutinho, A. Cunha & E. Caetano

On the characterization of damping of tuned liquid column dampers

L. Ramos & A. Cunha

Performance of SISO active control strategies for floor vibrations

I. M. Díaz & P. Reynolds

Vibration control of cable-stayed bridges using shear type MR damper

G. Heo, J. Jeon & C. Kim

Vibration nonlinear control of beam systems acted upon by nonlinear devices

F. Bourquin, M. Debbabi & F. Maceri

11:30-13:00 | Papers / Parallel Session (Room B035) - Topic 4

Chairs: U. Gabbert, F. Claeysen*Small impact drive motors based on amplified piezoelectric actuators*

C. Belly, F. Claeysen, T. Porchez & R. Le Letty

Semi-active control of magneto-rheological dampers with negative stiffness

S. Bhowmik & J. Høgsberg

Biologically-inspired morphing wing actuation

T. Adams, N. Iwabuchi, L. Benner, B. Edwards, S. Webb, J. Fulton, R. Kirk & F. G. Yuan

Optimization of location and size of piezoelectric actuators for manipulators with flexible non-prismatic links based on the maximization of dissipated control energy

V. Bottega, R. Pergher, A. Molter & J.S.O. Fonseca

Optimal Control for Musculoskeletal System

V. Bottega & R. Pergher

11:30-13:00 | Papers / Parallel Session (Room B029) - Topics 8, 9

Chair: C. Mota Soares*An autonomous surface vehicle insas for maintenance and surveillance applications*

S. Silva, S. Cunha, A. Matos & N. Cruz

Computational framework for simulation and design of adaptive lightweight structures

M. Fischer, K.-U. Bletzinger & R. Wüchner

Combining FEM simulations and infrared thermography for optimising the activation system of shape-memory polymer based devices

A. Díaz Lantada, P. Lafont, H. Lorenzo-Yustos, J. Muñoz-García, J. L. Muñoz Sanz, J. Echavarri Otero, J. M. Muñoz-Guijosa

Optimization design of composite steel-concrete structures under fire conditions

A. Landesmann, J. Câmara Neto & E. de Miranda Batista

Topology optimization of piezoelectric sensors arrays applied to modal filters design

Carlos C. Pagani Jr. & Marcelo A. Trindade

MONDAY, 13 JULY - AFTERNOON

14:30:-16:00 | Invited Lectures / Plenary Session (Auditorium)

Chair: A Preumont

Information extraction in structural health monitoring with wireless sensor networks

G. Feltrin, J. Meyer, R. Bischoff & O. Saukh

Wind turbine blade research at Risø DTU

M. McGugan & B.F. Sørensen

Morphing Aircraft: Materials, Mechanisms and Systems

J. Vale, L. Falcão, A. Gomes, F. Lau & A. Suleman

16:30:-18:15 | Project ADVICE / Parallel Session (Auditorium)

Chair: F. Lani

Autonomous Damage and Vibration Control Systems: Overview of the ADVICE project and its interest for aeronautics

D. Dumas, F. Lani, A. Nawrocki, J. Loyer, S. Grand, T. Monnier & M. Lallart

Efficient piezoelectric energy harvesting and management for self-powered sensors

M. Lallart, T. Monnier, C. Richard, P. Delatte, A. Saib, T. Kezai & P. Gérard

Communication and networking strategies for autonomous actuators and sensors

H. Boulkenafet, T. Kezai, P. Gerard, D. Flandre, M. Lallart & C. Richard

Numerical simulations of a vibrating composite panel to predict its behavior for damage detection using Lamb Waves

D. Dumas, F. Lani, K. Alexiou & T. Monnier

Validation of an autonomous vibration and damage control system on a composite panel

Stéphane Mênio, Jérôme Loyer, Sylvain Claimand, Jean-Michel Perrochat, Serge Grand, Kimon Alexiou & David Dumas

Semi-passive damping solutions for autonomous vibration control systems on aircrafts

E. Castro, F. Martin de la Escalera, M. Lallart, C. Richard, T. Monnier

16:30-18:15 | Papers / Parallel Session (Room B032) - Topics 2, 3

Chair: J.A. Güemes

Actuation modeling of ionic liquid-swollen ionic polymer transducers
N.C. Goulbourne & J.D. Davidson

Imaging analysis techniques for vibration monitoring in civil structures
S. Silva, J. Bateira & E. Caetano

Extraction of modal parameters through wavelet transform
C. Belmonte, E. Caetano, A. Cunha & P.P. Diotallevi

Design and installation of an electric based monitoring system applied to a centenary metallic bridge
Bruno J. A. Costa, C. Félix & J.A. Figueiras

Monitoring of an old metallic bridge by using of electric and optic technologies
Bruno J. A. Costa, Carlos F. Rodrigues, A.O. Dimande, J.A. Figueiras & A. Cunha

Weighing of trains in motion as a part of health monitoring system for a railway bridge
P. Kotakowski, K. Sekuła, D. Sala, A. Świercz & A. Orłowska

16:30-18:15 | Papers / Parallel Session (Room B035) - Topics 1, 4, 5

Chair: J. Holnicki-Szulc

Increasing dynamic stiffness of MIMO compliant structures by active control from auxiliary structure
M. Nečas & M. Valášek

Carbon fibre reinforced polymer as piezoresistive sensor
M.T. Silva, S. Jalali & R.M. Ferreira

Textile sensors for cardiac monitoring
A. Rente, R. Salvado & P. Araújo

Structural parameter estimation of two bridges from site data using Kalman filters and stochastic subspace algorithm
P. Banerji & S. Chikermane

Networked structural control with wireless sensing and actuation using H_∞ output feedback
H.R. Karimi, M. Zapateiro & N. Luo

Semiactive suspension for aircraft landing vibration absorption
M. Zapateiro, N. Luo & H.R. Karimi

16:30-18:15 | Papers / Parallel Session (Room B029) - Topic 7

Chair: E. Carrera

Experimental investigations of piezoelectric shear force actuated smart composites

P. Berik, H. Rapp & R. Wörndle

Piezoelectric laminated beam modelling including 3D effects. Application to control of vibrations and actuation

A. Fernandes, C. Maurini & J. Pouget

Design of piezoelectric actuator networks for framed structures utilizing Kirchhoff's plate theory with varying bending stiffness

D. Huber, M. Zellhofer, M. Krommer & H. Irschik

On-line identification of delamination - simulation and experiment

A. Ortowska & P. Kotakowski

Exact Elasticity Solution for the Density Functionally Gradient Beam with General Boundary Condition

A.R. Daneshmehr , S. Momeni & S. Salimi

Layerwise finite element analysis of laminated cylindrical shell with piezoelectric rings

MR. Saviz & M. Shakeri

TUESDAY, 14 JULY - MORNING

9:00-11:00 | Invited Lectures / Plenary Session (Auditorium)

Chair: M.I. Friswell

Mechanical to electrical energy conversion enhancement and self-powered wireless applications

D. Guyomar & M. Lallart

Identification, monitoring and control of bridges and special structures

A. Cunha, E. Caetano, F. Magalhães & C. Moutinho

Ageing of multi-riveted metallic panels and their options for acoustic wave based condition monitoring

C. Boller & M. R. Mofakhami

Active optics for large segmented mirrors: scale effects

A. Preumont, R. Bastais & G. Rodrigues

11:30-13:00 | Papers / Parallel Session (Auditorium) - Topic 3

Chair: M. McGugan

Design strategies of energy harvesting devices with piezoelectric transducers
W. Kaal, S. Herold & M. Kurch

An approach for structural health monitoring with smart sensor networks based on the random decrement method
D. Mayer, M. Kauba & A. Friedmann

Structural health monitoring of thin-walled structures by optical measurement techniques
R. Lammering & M. Neumann

Data management strategy for structural health monitoring system using smart sensors
A. Mita, S. Ogawa, H. Kameda & H. Sato

Structural health assessment of a building with passive dampers using three-dimensional vibration modes
Y. Nakamura & A. Mita

11:30-13:00 | Papers / Parallel Session (Room B032) - Topic 5

Chair: F. Weber

Passive control systems for the improvement of dynamical behaviour of tower cranes
J. de Sebastián, C.M. Casado, A. Lorenzana & A.V. Poncela

Gust load reduction concept in wind turbines
J. Grzędziński & A. Mróz

Passive vibration control with shunted modal piezoelectric transducers
C. M. A. Vasques & J. Dias Rodrigues

Low-cost and light-weight deformable mirrors for high order adaptive optics
G. Rodrigues, R. Bastaitis & A. Preumont

Feasibility investigations for a decentralized vibration control concept with embedded control nodes using the Filtered-x-Least-Mean-Squares algorithm
M. Kauba, S. Herold & D. Mayer

11:30-13:00 | Papers / Parallel Session (Room B035) - Topic 10

Chair: Y. Furuya

Development of New Iron-based Gallfenol (Fe-Ga-X) magnetostrictive alloys and their applications for smart by-wire steering system for automobile technology

Y. Furuya, T. Takahashi, T. Okazaki, C. Saito & .M. Shimada

Characterisation of NiTi Shape Memory Alloy coating for tribological applications

T.A.A. Bakar, J.Stokes, M.S.J.Hashmi, M.Rahman & D.P.Dowling

Relationships between compressive and tensile stresses of magnetorheological fluids

S. A. Mazlan, I. Ismail & A. G. Olabi

Conventional and contact-less triggering of shape memory polyalkenamers

J.M. Cuevas, L. German, M. Iturrondobeitia, J.M. Laza, J. Alonso, J. L. Vilas & L.M. León

Characterization of smart MARFOS NiTi shape memory alloys

F. Neves, F. M. Braz Fernandes, F. Neves, I. Martins, J. B. Correia, M. Oliveira, E. Gaffet, N. Boucharat, M. Lattemann, J. Suffner & H. Hahn

11:30-13:00 | Papers / Parallel Session (Room B029) - Topics 11, 13

Chair: D. Guyomar

PCL/MWCNT nanocomposites as nanosensors

A. Grozdanov, A. Buzarovska, M. Avella, M.E. Errico & G. Gentile

Large field induced strain in carbon nano-filled composite polyurethane (PU)

M. Kanda, K. Yuse, B. Guiffard & D. Guyomar

Nanotube and nanocomposite mechanics: A guide to the perplexed

H.D. Wagner & X.-M. Sui

Quantitative guidelines for modifying periodic ordered nanostructures: shape-evolution and shape- control during precipitation of inorganic precursors and urea

S. Bakardjieva, V. Štengl & J. Šubrt

Rapid prototyping and rapid tooling technologies for developing shape memory polymer-based devices

A. Díaz Lantada, P. Lafont, H. Lorenzo-Yustos, J. Muñoz-García, J. L. Muñoz Sanz, J. Echavarri Otero & J. M. Munoz-Guijosa

TUESDAY, 14 JULY - AFTERNOON**14:30:-16:00 | Invited Lectures / Plenary Session (Auditorium)****Chair: C. Boller***Guided wave propagation methods in composite structures for damage identification*

W. Ostachowicz & P. Kudela

Cable damping with friction and combined viscous-friction dampers

F. Weber, C. Boston, G. Feltrin & M. Motavalli

The prospects for morphing aircraft

M.I. Friswell

16:30-18:00 | Papers / Parallel Session (Auditorium) - Topic 3**Chairs: C. Gentile, J. Rodellar***Modern remote structural health monitoring: an overview of available systems today*

T. Spuler, G. Moor & R. Berger

Short-term Automated Monitoring of the Danube Bridge in Sinzing

T. Spuler, G. Moor & R. Berger

Structural health monitoring using wireless sensor networks

S. Deix, M. Ralbovsky, R. Stütz & S. M. Wittmann

Contribution plots on PCA based indices for damage identification on structures

L.E. Mujica, M. Ruiz, A. Güemes & J. Rodellar

Monitoring and sub-structuring of large massive structures

S. Casciati

16:30-18:00 | Papers / Parallel Session (Room B032) - Topic 5**Chair: A. Preumont***Vibration reduction of structural-acoustic coupled system by piezoelectric semi-passive techniques*

W. Larbi, J.-F. Deü & R. Ohayon

Vibration control of a rotor by magnetic shape memory actuators

K. Majewska, A. Żak & W. Ostachowicz

Adaptive wing for small aircraft applications

M. Mieloszyk, T. Wandowski, A. Żak, M. Krawczuk & W. Ostachowicz

Stochastic modeling of active-passive piezoelectric networks for structural vibration control

H.F.L. Santos & M.A. Trindade

Bounded vibration controls of distributed-parameter systems with applications to a beam on viscoelastic supports

M. Mahinzaeim, D.C. Swailes & J.M. Hale

16:30-18:00 | Papers / Parallel Session (Room B035) - Topic 10

Chair: J. Dias Rodrigues*Modeling the frequency and temperature dependent constitutive relation for damping materials*

R.A.S. Moreira, J.D. Corte-Real & J.Dias Rodrigues

Micro material property measurement of nickel (99.9%) thin film using vision strain measuring module

H.-J. Lee, N.-K. Lee, G.-A. Lee, J.-H. Song, S.-M. Bae, H.-W. Lee & A-R. Han

Optimal location of piezoelectric patches and identification of material properties in laminated composite structures

A.L. Araújo, C.M. Mota Soares, H. Friedmann, J. Röhner & F.-O. Henkel

An experimental study of the electro-thermomechanical behavior of linear NiTi shape memory actuators

L. F. A. Rodrigues, J. B. Simões, C. J. De Araújo & J. F. Coutinho Neto

Mechanical properties of magnetorheological elastomers

A. Boczkowska & S.F. Awietjan

16:30-18:00 | Papers / Parallel Session (Room B029) - Topic 14

Chair: H.H. Hilton*Temperature impact on MR devices behaviour*

J. Bajkowski, M. Bajkowski, W. Grzesikiewicz & R. Zalewski

On the use of SMA for impact absorption: numerical implementation of RL model including thermal effects

M. Collet, M. Ouisse, E. Foltête & C. LExcellent

Novel protocols of matching optimized designer aero-servocontrols with engineered viscoelastic material properties

H.H. Hilton, D.H. Lee & C.G. Merrett

One dimensional finite element implementation of a thermomechanics multimechanism constitutive equation for shape memory alloys
C. J. Gomes

A perfluorinated polyether-based magneto-rheological fluid in a prosthetic knee
K. H. Gudmundsson, F. Jonsdottir, F. Thorsteinsson & O. Gutfleisch

WEDNESDAY, 15 JULY- MORNING

9:00-10:30 | Invited Lectures / Plenary Session (Auditorium)

Chair: U. Gabbert

Dynamic architecture vs. structural control
F. Casciati, L. Faravelli & R. Al Saleh

Sensors and actuators for active structural acoustic and active vibration feedback control
P. Gardonio

Adaptive impact absorption - the concept, innovative solutions, applications
J. Holnicki-Szulc, C. Graczykowski, G. Mikułowski, A. Mróz & M. Ostrowski

11:00-13:00 | Papers / Parallel Session (Auditorium) - Topic 3

Chairs: C. Boller, R. Lammering

The Uniovi Benchmark
J.L. Zapico-Vallea, M.P. González-Martínez, M. García-Diéguez & J. Abad-Blasco

A migration model for impact localization on carbon-fiber-reinforced plastic plates
A. Ungethuem & R. Lammering

Dynamic stress monitoring with ultrasonic technique
J. Szelaźek, P. Gutkiewicz & S. Mackiewicz

On development of PZT array based structural health monitoring scanning system and its experimental research on UAV wing box
L. Qiu, S. Yuan, Q. Wang, Y. Sun & W. Yang

Baseline-free damage imaging method for lamb wave based structural health monitoring
Q. Wang & S. Yuan

Leak detection in a pipeline by cepstrum analysis of a pressure transient
J.D. Shucksmith, S.B.M. Beck, W.J. Staszewski, J.B. Boxall & A. Seth

Laboratory tests on damage detection in Unmanned Aerial Vehicles composite sheathing

M. Jurek, P. Nazarko & L. Ziemiański

11:00-13:00 | Papers / Parallel Session (Room B032) - Topic 5

Chair: P. Gardonio

On a pneumatic adaptive landing gear system for a small aerial vehicle

G. Mikulowski, P. Pawłowski, C. Graczykowski, R. Wiszowaty & J. Holnicki-Szulc

Electrical resistance measurements in shape memory alloy actuators for the position control of flexible systems - application to the case of an aluminum beam

W.M. Lima, C.J. de Araújo, W.A.V. Valenzuela & J.S. da Rocha Neto

PID controller project and analysis using shape memory alloys actuators

C.T. Faria, H.G. Borduqui, V.R. Franco & V. Lopes Jr

Noise control of plates featuring periodic arrays of shunted piezoelectric patches

F. Casadei, M. Ruzzene & L. Dozio

Improvement of dimensional accuracy and machine service life in sheet metal forming by control systems based on MR fluids

P. Regazzo & A. Ghiotti

Power controller for small - scale magnetorheological dampers

M. Rosół & B. Sapiński

Shunt damping of vibrating structures - design and implementation

T. Uhl & M. Rosiek

11:00-13:00 | Papers / Parallel Session (Room B035) - Topics 10, 12

Chair: W. Ostachowicz

Anisotropic solutions applied to a smart damper

T.A.N. Silva, C.R. Leal, A. Rodrigues, M.F. Bento & J.M.C. Travassos

Rheological model for special granular structures (SGS)

R. Zalewski

Numerical simulation of anisotropic magneto-rheological fluids

M. Barski

Characterization of the dynamic mechanical behavior of magnetoelastomers for vibration damping applications

Z. Major & B. Schrittester

Phase transformation yield surfaces for anisotropic shape memory alloys and surfaces transport

R.M. Laydi, K. Laverhne-Taillard, E. Gibeau & C. LExcellent

Application of quartz made SAW devices as strain sensors: practical aspects

G. Obieta & M. Martinez-Esnaola

11:00-13:00 | Papers / Parallel Session (Room B029) - Topic 14

Chair: T. Kundu

Temporary repair of concrete beams by embedded shape memory alloy actuators

F. Daghia, A. Giammarruto, R. Carli & G. Pascale

Discrepancy between test and FE analysis for dynamic characteristics of tall buildings

S.H. Cho

Natural seismic protection peculiarities of historical "Walled Obelisk" structure in Istanbul: modeling and numerical approach

A.A. Kasimzade, S. Tuhta & S. Bal

A linear-in-parameter modified Bouc-Wen model

L. Acho & F. Pozo

Energy flow approach to analysis of progressive collapse

S. Szymszewski

Smart device for extracting environmental energy providing continuous control of sun light

J. Cavalheiro

2-D approximation of multilayered composite structures with piezoelectric actuators - problems of optimal design

P. Kędziora

WEDNESDAY, 15 JULY- AFTERNOON

14:30-16:00 | Invited Lectures / Plenary Session (Auditorium)

Chair: F. Casciati

Classical and advanced computational plate/shell models for piezoelectric laminated structures

E. Carrera, S. Brischetto & M. Cinefra

Active noise control of thin-walled structures

U. Gabbert, J. Lefèvre & S. Ringwelski

Ultrasonic guided wave for structural health monitoring

T. Kundu

16:30-17:45 | Papers / Parallel Session (Auditorium) - Topics 3, 6

Chair: M.I. Friswell

Novelty detection and damage evaluation in laboratory models

P. Nazarko & L. Ziemiński

An experimental study of damage propagation in smart structures

V.R. Franco, A.A. Cavalini Junior, C.G. Gonzalez & V. Lopes Junior

Wireless 3D magnetic field digitizer for inspection of parts constructed using smart magnetic materials

J. Kaleta & P. Wiewiórski

Configurable thermal-induced triggers for crashworthiness applications

D.M. Dimas, A. Alves, N. Peixinho, D. Soares & C. Vilarinho

16:30-17:45 | Papers / Parallel Session (Room B032) - Topic 5

Chair: C. Moutinho

Advanced piezoelectric sensor for shape control

M.Smrž & M. Valášek

Active vibration control of a clamped composite plate subjected to blast loading by using genetic algorithm

H. Uyanik

Vibration characteristics of a steel frame using piezoelectric crystals as dampers

M.S. Rakesh & Ashok Kumar

Theoretical analysis of cantilever box beam excited by patches of piezoelectric actuators

M. Alhazmi & H. Ghulman

16:30-17:45 | Papers / Parallel Session (Room B035) - Topic 12

Chair: F. Magalhães

Vibration control of offshore platforms using magneto-rheological dampers
L.A. Lamont, L. El Chaar & M. Karkoub

Monitoring technologies: progressing from theory to application
T.B. Messervey, D. Zangani & S. Casciati

Use of magnetorheological elastomer materials in an adaptive vibration absorber for a propeller shaft
W.J. Choi, Y.P. Xiong & R.A. Shenoi

Die castings with integrated PZT-modules - fabrication and functionalities
M. Rübner, C. Körner & R.F. Singer

16:30-17:45 Papers / Parallel Session (Room B029) - Topic 14

Chair: C. Vasques

The Dipole Contouring Method as a tool for magnetic field distribution in premagnetization zone in SMART actuator
J. Kaleta & P. Wiewiórski

Three-dimensional elasticity solution of functionally graded piezoelectric cylindrical panel under dynamic loading
M. Shakeri & M.R. Sedighi

The effect of various boundary conditions on phase transformation in shape memory alloy cylindrical panels
M. Shakeri, R. Mirzaeifar & M. Sadighi

Static behavior of functionally graded cylindrical shell with piezoelectric ring
M.H. Yas, K. Garmsiri, M.Shakeri & M. Khanjani

17:45 Closing Session (Auditorium)