

ROMANIAN ACADEMY
Department of Technical Sciences

ACADEMY OF TECHNICAL SCIENCES

**COMMISSION OF ACOUSTICS
OF ROMANIAN ACADEMY**



**THE ANNUAL SYMPOSIUM
OF THE INSTITUTE OF SOLID MECHANICS
SISOM 2011
and
SESSION OF THE COMMISSION OF ACOUSTICS**

Bucharest, May 25-26, 2011

Session 1 →

Session 3 →

Session 2 →

Session 4 →

Organizing Committee

ORGANIZING COMMITTEE

Chair, Local: Prof. Tudor Sireteanu, Institute of Solid Mechanics

Chair, Local: Prof. Radu Munteanu, Rector Tech. University of Cluj-Napoca

Chair, International: Prof. Florentin Smarandache, University of New Mexico, USA

Vice-chairman

Prof. Veturia Chiroiu, Institute of Solid Mechanics

Prof. Ioan Magheti, Politechnica Univ., Bucharest

Prof. Luige Vladareanu, Institute of Solid Mechanics

Prof. Doina Frunzăverde, Rector Univ. Reșița

Members

Prof. Charles W. Stammers, Univ. of Bath, UK

Prof. Pier Paolo Delsanto, Politecnico. di Torino, Italy

Prof. Hongnian Yu, Stafford University, England

Prof.hab. Vasile Marina, Tech. Univ. of Moldova

Prof.hab. Gheorghe Moraru, Tech. Univ. of Moldova

Prof. Petre P. Teodorescu, Univ. of Bucharest

Prof. Dan Iordache, Politechnica Univ., Bucharest

Prof. Polidor Bratu, ICECON, Bucharest

Prof. Dinel Popa, Univ. from Pitești

Prof. Dumitru Stanomir, Politechnica Univ., Bucharest

Prof. Gheorghe Amza, Politechnica Univ., Bucharest

Prof. Inge Gavvat, Politechnica Univ., Bucharest

Prof. Ion Stroe, Politechnica Univ., Bucharest

Prof. Ovidiu Ilie Sandru, Politechnica Univ., Bucharest

Prof. Gilbert-Rainer Gillich, E. Murgu Univ., Reșița

Prof. Nicolae Enescu, Politechnica Univ., Bucharest

Prof. Daniel Condurache, Gh. Asachi Univ., Iasi

Prof. Nicolae Pop, Univ. of Baia Mare

Prof. Ionel Starețu, Transilvania Univ. of Brasov

Dr. Ionel Iorga, INCDPM

Prof. Marcel Migdalovici, Inst. of Solid Mechanics

Secretary :

dr. Marcel MIGDALOVICI
dr. eng. Cristian RUGINA
eng. Gabriela VLADANU

Special thanks to the sponsors:

- **NASR (ANCS)-National Authority for Scientific Research**
- **RATS (ASTR)-Academy for Technical Sciences of Romania**
- **Novel Mediamira Publishing House Cluj-Napoca**
- **AGIR - General Association of Romanian Engineers**
- **VTC – SRL (Engineering and Industrial Technologies, Engineering & Dealer – ABB)**

Session 1 – System dynamics and continuum mechanics

(1D) Marius-Florinel IONESCU, Ligia MUNTEANU, Veturia CHIROIU

On the hysteresis operators

(2D) Mihaela POIENARIU, Marius-Florinel IONESCU, Iulian GIRIP, Veturia CHIROIU

Numerical modelling and analysing of the damped beams with hysteresis

(3D) Petre P. TEODORESCU, Ligia MUNTEANU, Valeria MOȘNEGUȚU, Migdonia GEORGESCU

A genetic approach for nonlinear inverse problems of the form $F(x) = y$

(4D) Marinică STAN, Petre STAN

The spectral response of duffing oscillator with nonlinear elastic characteristic of exponential type

(5D) Petre STAN, Marinică STAN

The response for n random excitations with white noise of the duffing oscillator

(6D) Marcel MIGDALOVICI, Tudor SIRETEANU, Emil Matei VIDEA, Ana Maria MITU

Theoretical and experimental considerations on the Euler-Bernoulli cables vibration

(7D) Ștefan SOROHAN, Nicolae CONSTANTIN, Viorel ANGHEL, Mircea GĂVAN

Vibration test of damaged and repaired panels

(8D) Nicolae CONSTANTIN, Ștefan SOROHAN, Mircea GĂVAN, Viorel ANGHEL

Assessment of the repair efficiency of damaged Al panels

- (9D) Ion APOSTOL, Dan Alexandru IORDACHE, Ionel TUNARU
From increasing distortions to instabilities in the FD simulations of KDV solitons propagation
- (10D) Gilbert Rainer GILLICH, Doina FRUNZĂVERDE, Zeno Iosif PRAISACH, Petru Florin MINDA
A new method to detect, locate and evaluate the severity of damages using natural frequencies
- (11D) Amalia ȚÎRDEA, Cristina OPRÎTESCU, Mihai Ilie TOADER
Considerations about influence of the dynamic loads on the isolation pads with different configurations
- (12D) Gabriel-Petru ANTON, Mihai PAVAL, Fabien SOREL
Application on an updated finite element model of an engine in the automotive industry
- (13D) Dan-Alexandru IORDACHE, Viorica IORDACHE
Study of the physical meaning of the parameters of the second (U2) universality class processes
- (14D) Ligia MUNTEANU
On the predicting of size effects in the buckling of carbon nanotubes
- (15D) Ileana TOMA
An Ogden type model treated by LEM
- (16D) Viorel ANGHEL, Ștefan SOROHAN, Nicolae CONSTANTIN, Mircea GĂVAN, Andreea BORÎTU
Numerical study of the lateral buckling of thin walled open cross section beams
- (17D) Dan STANCIOIU, Huajiang OUYANG
Structural modifications by the method of receptances

- (18D) Dinu BRATOSIN
Local soil deposit - a nonlinear oscillating system
- (19D) Horia PAVEN, Zina VULUGA, Raluca GABOR, Andy Cristian NICOLAE
Dynamic mechanical thermal effects in case of polypropylene/glass fibre composites
- (20D) Ion CRACIUN
On a Boundary Value Problem of the Micropolar Thermoelastic Half-Space
- (21D) Tudor SIRETEANU, Ana-Maria MITU, Cornel BALAS, Emil Matei VIDEA, Cornel LALA
Experimental assessment of a novel variable stiffness device for vibration control
- (22D) Ovidiu SOLOMON, C.W. STAMMERS, Tudor SIRETEANU
Comparative analysis of three simulation methods for band-limited white noise samples
- (23D) Ana-Maria MITU, Polidor BRATU, Viorel SERBAN, Marius GIUCLEA
Analytical Models for Anti-Seismic Devices with Hysteretic Characteristics
- (24D) Camil CRACIUN, Ana-Maria MITU
Modeling of Experimental Hysteretic Loops for Railway Vehicles Buffers
- (25D) A. BARRAÑÓN, J.A. LÓPEZ-GALLARDO, F. de L. CASTILLO-ALVARADO
Computational Study of Liquid-Gas Phase Transition in Heavy Ion Collisions
- (26D) Ion SANDRU
Dynamic Systems in General Relativity

- (27D) Adrian NICULESCU
The aerial vehicles protection increasing with the novel „VZN“ damper
- (28D) Daniel BALDOVIN, Simona BALDOVIN
The elasticity influence in transversal movement stabilization of railway wheelset for high speed running Trains
- (29D) L. MARIN
Stable boundary data reconstruction in two-dimensional linear elasticity from incomplete measurements via regularized meshless methods
- (30D) Gheorghe MORARU
The reduction of the basic problems of plates to the integral equations by discontinuous solutions
- (31D) Nicolae POP, Constantin GHITA
An elastic frictional quasistatic contact problem with damage
- (32D) Marius STOIA-DJESKA, Florin FRUNZULICA
The numerical analysis of the supersonic panel flutter
- (33D) Dan DUMITRIU, Cristian RUGINA
Quasi-static normal indentation of an elastic material with a rigid spherical tip indenter
- (34D) Vlad Grigore LASCU, Tudor SIRETEANU, Grigore SECRIERU, Gheorghe MORARU, Radu CIUPERCA, Cornel LALA, Constantin CHIRITA
New experimental stand for variable geometry wind power turbines studies

(35D) Cornel BALAS, Viorica BOGDANESCU

Fatigue – as continuum damage

(36D) Aurora POTIRNICHE, Silviu NASTAC, Adrian LEOPA

On Hysteretic Dynamics of Passive Isolators at Dynamic Actions

(37D) Polidor BRATU, Ana GHEORGHE

Hysteretic damping for isolation systems consisting of elastomeric devices. Experimental analysis.

(38D) Cristian SPIRLEANU, Eugen DIACONESCU

Multifunctional control system for robotic cells and intelligent building automation with integrated agents

Session 1 

Home Page Sisom & Acoustics 2011 

Session 2 

Organizing Committee 

Session 3 

Session 4 

Session 2 – Robotics, mechatronics, biomechanics, wear investigations of materials

(1R) Ionel STARETU

Anthropomorphic modular reconfigurable gripper with three fingers-design and prototype

(2R) Mihaela PICU, Silviu NASTAC

Experimental determinations of palmar sensibility of workers exposed to HAV

(3R) Adriana SANDU, Marin SANDU, Marian Bogdan NEAGOE, Raluca MADAN

Possibilities to enhance the strength of unsymmetrical adhesively bonded joints

(4R) Liliana-Laura BADITA, Dumitru Catalin BURSUC, Lucian CAPITANU

About the wear process of the Co-Cr-Mo femoral head of a total hip prosthesis

(5R) Alexandru VLADDEANU, Gabriela VLADDEANU

The control of the bucket position at the hydraulic excavators with backhoe attachment

(6R) Yang LIU, Hongnian YU, Luige VLADAREANU, Shuang CANG, T.C YANG

Trajectory Optimization of a Pendulum-Driven Underactuated Cart

(7R) Ovidiu Ilie ȘANDRU, Luige VLĂDĂREANU, Alexandra ȘANDRU

Dynamical systems determinable by discrete samples

(8R) Stefan DUMITRU, Abdellatif MIRAOU, Luige VLADAREANU, Adrian D. BUCUR

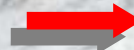
Intelligent control of walking mobile robot with obstacles avoidances

- (9R) Adrian D. BUCUR, Hongnian YU, Luige VLADAREANU, Stefan DUMITRU
Genetic algorithm for walking robot motion optimization
- (10R) Alexandru GAL, Octavian MELINTE, Cornel SECARA, Doina MARIN
Hybrid force-position control for manipulators with 4 degrees of freedom
- (11R) Octavian MELINTE, Luige VLADAREANU, A. BARRAÑÓN, Alexandru GAL
The haptic impedance control through virtual environment force compensation
- (12R) Gigi NAIDIN, Silviu NASTAC, Carmen DEBELEAC
Computational Dynamics of a Manipulator for Emergency Cases Interventions
- (13R) Gigel CAPATANA, Carmen DEBELEAC, Silviu NASTAC
On Dynamics of Vibratory Compactors based on Complex Interaction with Terrain
- (14R) Constantin TIGANESTEANU
Experimental apparatus used to study the impact wear
- (15R) Gabriela TONȚ
Markov Blanket Approach for State Estimation and Robot Behaviour Selection in Heterogeneous Dynamic Environments
- (16R) Florentin SMARANDACHE
Plenary lecture: Advances and Applications of DSMT for Information Fusion

Session 1



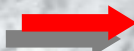
Home Page Sisom & Acoustics 2011



Session 2



Organizing Committee



Session 3



Session 4



Session 3 – Technical Acoustics

- (1A) Cristiana VOICAN, C.D. STANESCU, Carmen GHEATA
Considerations on active reduction noise at a diesel generator
- (2A) Cristiana VOICAN, C.D.STANESCU, Carmen GHEATA
Treatment and active control design performance of noise at diesel generator
- (3A) Liliana CĂINICEANU, Constantin D.STĂNESCU, Tudor BURLAN
Considerations of reflection coefficient as a function of frequency for wedges of different materials
- (4A) Liliana CĂINICEANU, Constantin D.STĂNESCU, Tudor BURLAN
Consideration of anechoic chambers
- (5A) Cristina PACHIU, Victor MOAGAR
Wave propagation in two-dimensional phononic crystal plate
- (6A) Silviu IONESCU, Valentin SILIVESTRU, Adina IONESCU, Nicolae ENESCU, Ioan MAGHETI
Approach to reduce centrifugal compressor noise
- (7A) Ovidiu VASILE
Attenuation of the acoustic energy for absorptive muffler
- (8A) Nicolae ORASANU, Andrei CRAIFALEANU
Theoretical and experimental analysis of the vibrations of an elastic beam with four concentrated masses

- (9A) Vasile N. IGNAT
*Considerations in reducing the direct reverberation influence in sonar systems –
Line array with successive multiplication and range asymmetrical beam pattern*
- (10A) Ionel IORGA, Silviu Nicolae PLATON, Andrei IORGA
Noise control in music and entertainment sector in Romania . General guidelines for workers protection
- (11A) Sorina ILIUTA, Toma ZAPLAIC, Mihai ZAPLAIC
Industrial noise: a preventive approach. Case study for a power plant
- (12A) Christian FRENEAT
*Research and management of environmental and occupational noise measurement using acoustic and
vibration equipment*
- (13A) Razvan OPREA, Mihai MIHAILESCU
Oscillations of the vehicles with dry friction damping
- (14A) Florin RASTOCEANU, Marilena LAZAR
Fusion of Spectral Feature Sets for Improving Speaker Verification Performance
- (15A) Dumitru RUIICU, George-Cosmin BIVOL, Ion COPAE
Considerations regarding the analysis and synthesis of vehicle acoustic field
- (16A) Daniel-Marius MIHAI, Nicolae ENESCU, Daniel COMEAGA, Cristian BADEA
Relevant aspects of the railway track structure influence on rolling noise

- (17A) Claudia BORDA, Larisa BUTU Marinela MARINESCU, Delicia ARSENE, Mihai ARSENE
The acoustic coupling of the pre-stressed piezoelectric ceramics
- (18A) Larisa BUTU, Marinela MARINESCU Delicia ARSENE, Claudia BORDA
Deburring of microelectronic components in acoustic field
- (19A) Carmen CIRNU, Anca STEFAN, George BALAN
Acoustic parameters of the air- jet flat generator with two swirl resonators
- (20A) Florin BABARADA
High performance switching power supply
- (21A) Daniel-Marius MIHAI, Nicolae ENESCU, Cristian BADEA, Silviu IONESCU
Contributions to the study of the interdependence between the railway track defects and sound pressure level onboard the railway vehicles
- (22A) Nicolae ZEMTEV
Seismic Analysis of a Vertical Water Tank
- (23A) Mariana SAVU, Alina OVANISOF, Ioan MAGHETI
Sound Power Determination at Low Frequencies
- (24A) Luminita VOICULESCU
Mechanic – acoustic analogies at the research of acoustic filters

- (25A) Cristian BADEA, Craita CARP-CIOCARDIA
OmniPower Sound Source
- (26A) Tiberiu ZAHARIA, Svetlana SEGARCEANU, Marius COTESCU, Inge GAVAT
Dynamic Time Warping in Speech Processing
- (27A) Mihnea MAGHETI, Cristian BADEA, Nicolae ENESCU
Remote surveillance mechanical vibrations for surveillance turbogenerators
- (28A) Polidor BRATU, Aurelia MIHALCEA, Ovidiu VASILE
Changing of the damping characteristics due to the addition/decrease of the elastomeric devices in a structural system
- (29A) George Catalin ION
The sound cancellation system for air –conditioning ducts
- (30A) Sorina ILIUTA, Toma ZAPLAIC, Mihai ZAPLAIC
Reduction of rail traffic noise in an inhabited area
- (31A) Polidor BRATU, Aurelia MIHALCEA, Ovidiu VASILE
Evaluation of the dissipation capacity in case of structural system consisting of elastomeric anti-seismic devices tested under laboratory conditions
- (32A) Stefan STAICU, Ion STROE, Andrei CRAIFALEANU
Dynamics of compass robotic arm using principle of virtual work
- (33A) Marius COTESCU
Excitation Source Modeling for HMM-based Speech Synthesis

(34A) Ovidiu GRIGORE, Valentin VELICAN, Inge GAVAT
Computer Assisted Speech Therapy

(35A) Gabriel OPREA
A graphic study of the wave fronts and the catacaustic phenomena arised in architectural acoustics

(36A) Constantin - Daniel COMEAGA, Ioan MAGHETI, Serban FERARU
Actual Romanian legislative framework in acoustic and vibration and steps for adjustment in respect with the european and international tendencies

(37A) Constantin - Daniel COMEAGA, Georgeta IONASCU
Modal analysis of microaccelerometers - comparison of methods

(38A) Mihai ZAPLAIC
Some aspects on the implementation of Directive 2002/49/EC in Romania

Session 1 

Home Page Sisom & Acoustics 2011 

Session 2 

Organizing Committee 

Session 3 

Session 4 

Session 4 – Ultraacoustics

(1U) Oana CHIVU

Theoretical and experimental contributions regarding construction, mode of operation and technical characteristics of linear ultrasonic engines

(2U) Oana CHIVU, Gh. AMZA

Contributions regarding modeling thereby method of finite elements of rotary ultrasonic motors active elements, model MUR - 10C

(3U) Grigore Liviu ODOBESCU

Considerations between an excitation generator and piezoelectric transducer parameters to optimize the energy transfer.

(4U) Cornelia LUCHIAN, Delia GÂRLEANU, Gabriel GARLEANU, Florea DUMITRACHE,

Researches for the optimization of the ultrasound welding parameters of electric contacts

(5U) Gabriel GARLEANU, Constantin DUMITRASCU, Delia GÂRLEANU, Cornelia LUCHIAN

The evaluation of corrosion of pipes for fluid transport through the thermal imaging technology

(6U) Gheorghe AMZA, Zoia APOSTOLESCU, Sanda Liana PAISE

Contributions to reduce the environmental impact of natural gas use

(7U) Mihai ARSENE, Delicia ARSENE, Claudia BORDA, Marinela MARINESCU, Larisa BUTU

Estimating the quality materials factors for high-power ultrasonic vibration systems

(8U) Doru Virgil PĂUȘAN, Victor POPOVICI

Modeling using the finite element method of an ultrasonic stack used for ultrasonic welding-staking process

- (9U) Dan Florin NITOI, Gheorghe AMZA, ACHIM Veronica
Determination of vibration modes used in ultrasonic welding of wires of gold and aluminum
- (10U) Gheorghe AMZA, Zoia APOSTOLESCU, Maria DRAGOMIR GROZA
Ultrasonic gas filtration
- (11U) Gheorghe AMZA, Adrian MILICĂ
Manufacturing electronic worm memory on flexible foil substrate by depositing electro-polymer using ultrasonic technology
- (12U) Gheorghe AMZA, Robert BENDIC
Utilization of ultrasound emulsification in complex coacervation of polymer microcapsules
- (13U) Gheorghe AMZA, Gabriel Dan TASCĂ
Research regarding ultrasonic evaluation of polyethylene parts used in medical prostheses
- (14U) Delia GARLEANU, Gabriel GARLEANU, Delicia ARSENE, Cornelia LUCHIAN
Butt welding into joint narrow bar steel MAG- process

[Session 1](#) 

[Home Page Sisom & Acoustics 2011](#) 

[Session 2](#) 

[Organizing Committee](#) 

[Session 3](#) 

[Session 4](#) 