

**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 2013  
and  
Symposium of Acoustics  
and  
Symposium of Robotics  
Bucharest, May 21-22, 2013**

**Session 1** →

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**Organizing Committee**

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*Session 1 – System dynamics and continuum mechanics*

(1D) Cristian TEODOSIU

*Multiscale Modelling and Simulation of the Ductile Fracture of Dual-Phase Steels*

(2D) Cai WEN, Yang CHUNYAN

*A New Transdisciplinary Science—Extenics*

(3D) Florentin SMARANDACHE

*Three Non-linear  $\alpha$ -Discounting MCDM-Method Examples*

(4D) Viorel SERBAN, George CIOCAN, Marian ANDRONE, Ana Maria ANDRONACHE,  
Tudor SIRETEANU, Ana Maria MITU, Liviu POSTOLACHE

*Mitigation of structures response to dynamic actions using Serb devices*

(5D) Mircea LUPU, Olivia FLOREA

*Stability methods for the ships or aircrafts route in the rolling oscillations case*

(6D) Nicolae POP

*The time discretization algorithm for solving the elastodynamical contact problems with friction*

- (7D) Viorel SERBAN, Madalina ZAMFIR, George CIOCAN, Marian ANDRONE,  
Ana Maria ANDRONACHE, Viorela Maria POSTOLACHE, Liviu POSTOLACHE  
*Renewable energy – New solutions to collect, store and reuse*
- (8D) Dan-Alexandru IORDACHE, Viorica IORDACHE  
*Some considerations on the mechanics and acoustics history*
- (9D) Viorel SERBAN, Madalina ZAMFIR, Marian ANDRONE, Tudor SIRETEANU, Ana Maria MITU,  
Dan TARCA, Viorela Maria POSTOLACHE  
*Cetal – Innovative solutions to isolate from noises, shocks, vibrations and seismic movements*
- (10D) Silviu NASTAC  
*An Approach Regarding Damage Detection in Beams Based on Dynamic Response*
- (11D) Silviu NASTAC  
*Correlative Approximations of Dynamic Effects in Natural Terrains due to Technological Actions*
- (12D) Daniela BARAN, Dorin LOZICI, Simion TATARU, Nicolae APOSTOLESCU  
*Visual environment for structural loads computations*
- (13D) Iulian GIRIP, Stefania DONESCU, Rodica IOAN, Migdonia GEORGESCU  
*On the structural parameter estimation for systems with hysteretic Bouc-Wen nonlinearity*
- (14D) Migdonia GEORGESCU, Ligia MUNTEANU  
*On the hysteretic characteristics of the wind-structure interaction*

- (15D) Mihaela POIENARIU, Veturia CHIROIU  
*Optimization of the hysteretic characteristics of composites with bioinspiration from fish*
- (16D) Marcel MIGDALOVICI, Daniela BARAN, Gabriela VLĂDEANU  
*Mathematical aspects on the stability zones structure of the dynamical systems with applications*
- (17D) Marcel MIGDALOVICI  
*Generalised Riemann integral and Lebesgue integral for unbounded functions by the mathematical modeling*
- (18D) Octavian D. MELINTE, Dan N. DUMITRIU  
*CARSIM software simulations of half-car vertical 2D dynamics and vehicle suspension behavior*
- (19D) Ion BULAC, Nicolae PANDREA  
*Cardan transmissions vibrations with elastic supports and excitations given by manufacturing deviations*
- (20D) Ion BULAC, Nicolae PANDREA  
*Vibrations of the tricardanic transmissions with elastic supports and excitations given by manufacturing deviations*
- (21D) Mihaela PICU  
*A whole body vibrations study on crew personnel*
- (22D) Gheorghe PANFILOIU  
*Computer monitoring model of the functional state in stable dynamic equilibrium*

- (23D) Gheorghe PANFILOIU  
*Algorithms and families of curves for identifying and tracking the functional state of machines with vibrating actions*
- (24D) Patricia MURZEA, Horea SANDI, Ion VLAD, Nausica VLAD  
*An attempt of calibration of a stochastic model of low amplitude stationary ground motion*
- (25D) Emil M. VIDEA, Tudor SIRETEANU, Ana Maria MITU  
*Optimizing a Stockbridge type damper series*
- (26D) Viorel ȘERBAN, Marian ANDRONE, Mădălina ZAMFIR, George CIOCAN, Ana Maria ANDRONACHE, Liviu Dan POSTOLACHE, Viorela Maria POSTOLACHE, Laura Elena ȘERBAN  
*Technical solutions to restore the longitudinal conectivity of a river in front of an obstacle to enable the migration of sturgeons and other aquatic organisms*
- (27D) Viorel ȘERBAN, Marian ANDRONE, Mădălina ZAMFIR, George CIOCAN, Ana Maria ANDRONACHE, Liviu Dan POSTOLACHE, Viorela Maria POSTOLACHE, Laura Elena ȘERBAN  
*Innovative equipment and technology for base soil works for sustainable agriculture*
- (28D) Margarit BAUBEC, Hristache POPESCU,  
*The calculus of a cylindrical tank floor subjected to some seismic maximum loads*

(29D) Adrian Ioan NICULESCU, Dan DUMITRIU,

*Evaluation by simulation of the "VZN" Shock absorbers roll behavior, relative to the standard ones*

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

(1R) Polidor BRATU

*Asymptotic dynamic behavior of mechanical systems with linear viscoelastic links, exposed to forced vibration and inertial excitations*

(2R) V. MOISE, I.A. TABARA, St.I. MOISE

*Contributions to kinematics analysis of bevel planetary gears by using the instantaneous axis of rotation method*

(3R) Ionel STARETU

*Redundant kinematic chains with 7 and 8 axes for robots-structural systematization*

(4R) Alexandru GAL, Luige VLADAREANU, Hongnian YU

*Application of Neutrosophic Logic Approaches in "RABOT" Real Time Control*

(5R) Alexandru VLĂDEANU, Gabriela VLĂDEANU

*The correction of the bucket position at loaders*

(6R) Dorin RUS, Lucian CAPITANU, Virgil FLORESCU

*The wear reacton of certain polymers filled with glass fibres on the steel surfaces in injecton processing*

- (7R) Gabi ROSCA FARTAT, Constantin D. STANESCU  
*Contributions for the development of a device for the decommissioning of the fuel channels in the Candu nuclear reactor (Part I)*
- (8R) Doina MARIN  
*Dynamic Testing of Milling Machines*
- (9R) Radu PANAITESCU-LIESS, Florin BAUȘIC  
*A 6 DOF human hand dynamic model*
- (10R) Florin BAUȘIC, Radu PANAITESCU-LIESS  
*A 8 DOF hand-arm dynamic model*
- (11R) Vlad Grigore LASCU, Miron ZAPCIU, Monica FLOREA, Sorin Mihai CROITORU, Luigi VLADAREANU, Cornel LALA  
*New regenerative energy device with PLC embedded*
- (12R) Eugen CORDUNEANU  
*A cinematic study of the anti-parallelogram mechanism*
- (13R) I. NIȚAN  
*Experimental study of the electrochemical pumps with liquid powered by unconventional sources*
- (14R) I. ROMANIUC  
*New devices for electret measurement*

- (15R) I. NITAN, C. UNGUREANU, D. CERNOMAZU, M. MILICI  
*Experimental study of the influence of operating position on the behavior of an electromechanical actuator with volatile liquid*
- (16R) I. ROMANIUC  
*Magnetostrictive vibromotors using Terfenol D alloy*
- (17R) Constantin Radu MIRESCU, Luige VLADAREANU, Lucian CAPITANU  
*Improvements on surface Minkowsky functionals calculus*
- (18R) Constantin TIGANESTEANU  
*Aspects of wear of the peak a nail the Ident of CMS*
- (19R) Ovidiu Ilie ȘANDRU, Antonela TOMA, Alexandra ȘANDRU, Victor VLĂDAREANU  
*An intelligent method of robot motion planning*
- (20R) Danut BUCUR, Luige VLADAREANU, Radu Adrian MUNTEANU, Stefan DUMITRU  
*Humanoid robotic hand modeling in virtual environment*
- (21R) Ovidiu Ilie ȘANDRU, Alexandra ȘANDRU, Victor VLĂDAREANU, Cristian Lucian STANCIU, Cristina STAMIN  
*Genetic Algorithm for the Learning Automata*
- (22R) Octavian MELINTE, Mihai Stelian MUNTEANU  
*Intelligent methods for compensating dynamics of impedance haptic devices*

(23R) Stefan DUMITRU, Luige VLADAREANU, Radu Ioan MUNTEANU, Danut BUCUR,  
*Obstacle avoidance method based on neutrosophic logic*

(24R) Cristian SPIRLEANU, Luige VLADAREANU, Eugen DIACONESCU  
*Multiagent control robot system with distributed architecture*

(Conference call) Ionel STARETU,  
*Grasp and gripping systems for robots - state of art*

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### ***Session 3 – Technical Acoustics***

(1A) Tiberius ZAHARIA, Svetlana SEGARCEANU, Inge GAVAT  
*Automatic speech recognition with multilingual codebook*

(2A) Svetlana SEGARCEANU, Tiberius ZAHARIA  
*Evaluation of several methods of silence or unvoiced frames elimination for speaker recognition*

(3A) Ovidiu VASILE  
*Experimental identification of elastomeric systems with high damping during harmonic regimes of low frequency*

(4A) Gabriela MINDU  
*Evaluation of the noise level reduction inside buildings due to fonoabsorbent and fonoinsulating treatments*

(5A) Alexandru RĂILEANU  
*Dynamic simulation models of the behavior of viaducts supported viscoelastically considering exterior perturbing actions*

- (6A) Silviu Emil IONESCU, Adina Cristina IONESCU, Sorin TOMESCU, Radu CODOBAN, Mihai BORZEA, Dragos MIHAI, Marius DEACONU  
*Vibro-acoustic analysis of turbo-gear instabilities in high speed power transmissions*
- (7A) Alexandru TRUȚĂ, Mihai CIUNCANU  
*Numerical and analogical evaluation of the hysteresis loops at the specialized stand test*
- (8A) Mihaela MATIU, Daniel Constantin COMEAGA, Constantin NICOLESCU  
*Control of mechanical impedance and transmissibility with electrodynamic actuator*
- (9A) Cristinel ILIE, Daniel Constantin COMEAGA, Octavian DONTU  
*Balancing system with passive magnetic couplings*
- (10A) Mihaela MATIU, Daniel Constantin COMEAGA, Dragos George ERIMIA  
*Closed loop control of electrodynamic actuators using LabVIEW*
- (11A) Ana GHEORGHE  
*Increasing noise reduction level through association of soundproofing and soundizolation materials at realisation of modular structural elements of acoustic protection*
- (12A) Sergiu BEJEAN  
*Determinant correlation between viscoelastoplastic parameters and the specific dynamic regime of the compacting process through earth vibration*

- (13A) Carmen ALEXANDRU  
*Identification of the rheological behavior of the linear visco-elastic materials modeled as Kelvin-Voigt at harmonic dynamic actions*
- (14A) Nicolae ORASANU, Andrei CRAIFALEANU, Ioan MAGHETI  
*Measurement of acoustical reflection waves by the correlation technique*
- (15A) Luminita VOICULESCU  
*The influence of rotative speeds over the vibration of shafts*
- (16A) Ioan MAGHETI, Mariana SAVU, Craita CARP-CIOCARDIA  
*Power flow measurements in complex vibration structures*
- (17A) Mihai CIUNCANU  
*The influence of the excitation signal form on the evaluation of the damping characteristics of the elastomeric antiseismic isolators*
- (18A) Cristiana VOICAN, Constantin D. STANESCU  
*Consideration on active control of portable generator noise*
- (19A) Mihaela Alexandra POPESCU, Valerica MOSNEGUTU, Ruxandra Diana ILIE  
*On the modeling of sonic composites and sonic wave-guides*

- (20A) Constantin D. STĂNESCU, Liliana CAINICEANU, Simona IONESCU, Melania TAMAȘ  
*Experimental research on improving high-power audio speaker devices performance using permanent ndfeb magnets special technology*
- (21A) Vasilică VOINEA, Cristian PREDOI  
*Aspects concerning blast acoustics*
- (22A) Daniel MIHAI, Cristian BADEA, Daniel COMEAGA  
*Simultaneous measurement of accelerations and external acoustic pressure during railway vehicle rolling*
- (23A) Sorina ILIUTA, Mihnea MAGHETI, Toma ZAPLAIC, Mihai ZAPLAIC  
*Some aspects of prognosis and management of noise in the vicinity of an airport*

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#### ***Session 4 – Ultraacoustics***

(1UA) Gh. AMZA, Adrian MITRACHE

*Contributions regarding the use of ultrasound in air depollution*

(2UA) Gh. AMZA, Bogdan IONESCU

*Contributions regarding use of ultrasound in improving the environment*

(3UA) C. PETRICEANU

*Contributions concerning ultrasound examination inside a nuclear reactor*

(4UA) O. AMZA

*Contributions on the state of stresses and strains that occur during processing curved root canals*

(5UA) Al. RUJINSKI

*Contributions regarding a set of endodontic instruments activated ultrasonic*

(6UA) Cristian RUGINA

*Dimensional analysis of high power ultrasonic transducers*

(7UA) Grigore Liviu ODOBESCU

*The efficiency of an acoustic piezoelectric system*

(8UA) G. TASCA

*Contributions concerning ultrasound examination by immersion of complex parts made of composite materials*

(9UA) Dan NITOI

*Contributions on the use of ultrasound in air purification process in auto painting*

(10UA) C. RADU

*Contributions concerning use of ultrasound in the milling process of the materials*

(11UA) L. BUTU, M. MARINESCU, C. BORDA, D. ARSENE

*Experimental research regarding the ultrasound influence under the surface of the microelectronic parts*

(12UA) C. BORDA, D. ARSENE, M. MARINESCU, L. BUTU

*The mechanical pre-stressing in ultrasonic piezotransducers*

(13UA) V. POPOVICI, C. BORDA, D. ARSENE, L. BUTU, M. MARINESCU, M. ARSENE

*Contribution regarding noise measurement acoustic procedures on board*

(14UA) Zoia APOSTOLESCU

*Contributions to use ultrasound in the cleaning natural gas*

(15UA) D. Virgil PĂUȘAN, V. POPOVICI

*Experimental stand for parameters setting and monitoring the ultrasonic processing*

(16UA) D. GARLEANU, G. GARLEANU, D. ARSENE

*Technology repair a press DREITZ*

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