

**ROMANIAN ACADEMY**  
*Department of Technical Sciences*

ACADEMY OF TECHNICAL SCIENCES



The Annual Symposium of the  
*Institute of Solid Mechanics*

***SISOM 2003***

*Bucharest*

*May 15-16, 2003*

**Session 1** 

**Session 2** 

**Organizing Committee** 

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## ***Session 1 – Mechanical system dynamics and continuum mechanics***

(1D) ***Boris RYBAKIN, Grigory SECRIERU,***

“ Mathematical simulation of non-stationary interaction of detonation waves and elastoplastic body “

(2D) ***Gheorghe Moraru,***

“ Displacements and stresses due to dislocations on using discontinuous solutions “

(3D) ***Mircea MISICU,***

“ Structural fission and damage in fractured media “

(4D) ***Cornel Mihai NICOLESCU, Veturia CHIROIU, Traian BADEA, Oana MARIN,***

“ On the modeling the damping across the length scales by using Tzitzeica surfaces “

(5D) ***Ion NAVAL,***

“ About one explicit-difference scheme for solving the plane problem for two-component medium “

(6D) ***Dinu BRATOSIN,***

“ Nonlinear model for antivibratory materials “

(7D) ***Ioan RUGINA, Cristian RUGINA,***

“ Resonant methods used in dissipative characteristic determination of ultrasonic system components “

- (8D) ***Nicolae POP,***  
“ On the convergence of the Uzawa type algorithm used in contact problems with friction “
- (9D) ***Marcel MIGDALOVICI, J. ONISORU, E.VIDEA, Al. ALBRECHT***  
“ Aspects concerning dynamical analysis of overhead line conductors”
- (10D) ***Veturia CHIROIU, Goran KARLSSON, Ligia MUNTEANU***  
“ On the active truss with piezoelectric linear actuators “
- (11D) ***Petre STIUCA, Veturia CHIROIU, Ligia MUNTEANU, Calin CHIROIU***  
“ On the acoustic solitons propagating in a crystalline lattice ”
- (12D) ***Dan RECEANU,***  
“ A new method for the dynamical simulation of mechanical systems using a graphic programme “
- (13D) ***Cornel BALAS, Emil VIDEA,***  
“ Computer Hard Disk Drive Performances Improvement Using an Active Damping System “
- (14D) ***Mihai NICOLAE, Ioan RUGINA,***  
“ Electric Active Energy Meter “
- (15D) ***Horia PAVEN, Sandor POPOVICS,***  
“ On some basic frequency effects within the AB- (2,2) linear viscoelastic solid- like behaviour.  
I. Strain-controlled rheodynamic processes ”
- (16D) ***, Horia PAVEN, Sandor POPOVICS,***  
“ On some basic frequency effects within the AB- (2,2) linear viscoelastic solid- like behaviour.  
II. Strain-controlled rheodynamic processes “

- (17D) *Cornel MARIN, Ion Florin POPA, Mihaita ARDELEANU,*  
“ Influence of the natural modes vibration on the magnitude of basis acceleration “
- (18D) *Stefania DONESCU,*  
“ Deformation of active flexible rods with memory shape alloy fibers “
- (19D) *Florin FRUNZULICA, Marius STOIA-DJESKA,*  
“ A typical fluid-structure interaction problem “
- (20D) *Ioana BUSUIOCEANU, Daniel COMEAGA, Ioan MAGHETI,*  
“ Transmission of vibration from tool handle to the wrist and to the elbow ”
- (21D) *Marcel MIGDALOVICI, Daniela BARAN,*  
“ The parametric stability of motion for two sprung superposed masses ”
- (22D) *Margarit BAUBEC, Aron IAROVICI,*  
“ On the calculation of eigenvalues for circular “MINDLIN” plates ”
- (23D) *Aron IAROVICI, Margarit BAUBEC,*  
“ Modified Legendre polynomials with applications to differential equation systems ”
- (24D) *Grigore ODOBESCU, Cornel LALA,*  
“ The influence of acoustic charge on power debited from a piezoelectric transducer ”
- (25D) *Grigore ODOBESCU, Cornel LALA,*  
“ The variation of ultra-acoustic system efficiency in function of acoustic charge “

- (26D) ***Ligia MUNTEANU, Traian BADEA, Eugen BARONCEA,***  
“ Exponential asymptotic expansions for a damped pendulum equation ”
- (27D) ***Marian ANDRONE, Veturia CHIROIU,***  
“ On the attenuation and damping in soils ”
- (28D) ***Gabriel TEODORESCU,***  
“ Ultrasonic NDT problem, solved with virtual instrumentation”
- (29D) ***Florin MAILAT, Gheorghe GHITA, Veturia CHIROIU,***  
“ On the heat generation and dissipation in MR fluid dampers”
- (30D) ***Viorel SERBAN, Tudor SIRETEANU, Ana Maria MITU, Florin MAILAT, Danut STANCIOIU***  
“ Experimental assessment of a new base isolation system for buildings “
- (31D) ***Danut STANCIOIU, Tudor SIRETEANU, Marius GIUCLEA, Ana Maria MITU***  
“Simulation of random road profiles with specified spectral density”
- (32D) ***Lidia Elena KOZMA***  
“ A possible visual image of the extended monogenous function “
- (33D) ***Radu Dan RUGESCU***  
“ Bound vectors and spectra of rigid rotations vs. symmetry matrices “

**Session 1** 

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**Session 2** 

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## *Session 2 – Mechatronics, robotics, friction and wear investigations*

- (1R) *Gunter VOGELSANG, Luige VLADAREANU, Lucian Marius VELEA*  
“Hierarchical structures based on plc with radio-modem monitoring of distributed systems ”
- (2R) *Dumitru MIHAI, Silviu MACUTA*  
“ The experimental analysis re the evolution of some mechanical characteristics for a steel used in construction of conduits for steam transfer”
- (3R) *Nicolae CANANAU, Alexandru IVANESCU, Silviu MACUTA,*  
“ Researches regarding the viscoplastic behaviour of some continuous cast steel “
- (4R) *Dan Mihai CONSTANTINESCU, Nicolae CONSTANTIN, Thomas GOSS,*  
“ Interlaminar fracture toughness and intralaminar damage of layered and sandwich textile composites “
- (5R) *Ion CRUDU, C. ZAHARIA,*  
“ Un model de conducere a procesului de laminare a benzilor de otel “
- (6R) *Alexandru IVANESCU, Antoaneta ENE, Nicolae CANANAU, Silviu MACUTA,*  
“ Mathematical model of the LD steel deoxidation kinetics with manganese and aluminium “
- (7R) *Lilica IVANESCU, Nicolae CANANAU, Alexandru IVANESCU, Silviu MACUTA,*  
“ Determination of temperature field into rotoric jacket of the induction electromagnetic coupling by technical pure iron ”
- (8R) *George C. BALAN,*  
“ The improvement of machine-tools dynamic behaviour with adaptive fuzzy control systems ( 8 –th part)”

- (9R) *George C. BALAN, Gheorghe PUSCASU,*  
“ The study of machine-tools dynamic by using artificial intelligence methods “
- (10R) *Amedeu ORANESCU, Elena MEREUTA, Gabriel STROE,*  
“ Topologie sur des structures mobiles en plans multiples “
- (11R) *Ivan ILIUC, Sergiu CONONOVICI, Zaneli GHEORGHIU, Paul BECA, Cristina MARINESCU*  
“Computerized equipment for determination of run out and tension in circular saw blade for stone cutting”
- (12R) *Laurentiu RECE, Gheorghe SOARE,*  
“Strategie d’implementation des theorie des graphes ordonnees dans l’optimisation des processus d’usinage”
- (13R) *Sergiu-Boris CONONOVICI, Wladimir RACOVITA, Daniel DINU,*  
“ A Sensor- Based Reactive Behaviour of a Mobile Robot Obtained By a Genetic Algorithm”
- (14R) *Lucian CAPITANU, Aron IAROVICI ,*  
“ Tribological processes on composite plastic materials\ steel surfaces contact. I – Wear testing.”
- (15R) *Lucian CAPITANU, Aron IAROVICI ,*  
“ Tribological processes on composite plastic materials\ steel surfaces contact. I I– Wear processes.”
- (16R) *Adrian OLARU ,*  
“ Assisted research of the dynamic behaviour in the frequency domain of the portal GANTRY robot”
- (17R) *Adrian OLARU,*  
“Dynamic behaviour assisted optimization of the hydraulic linear motor in the industrial robots construction”



(18R) *Ivona PETRE*

“ Study regarding the sratch wear of the couplings with translation motion ”

(19R) *Carmen TACHE, Antonio TACHE*

“ Atheoretical model concerning the diffusional wear of the turning cutting tool “

(20R) *Horia PANAITOPOL, Constantin UDREA*

“ Des aspects concernant la manipulation des plaquettes en siliciu avec les robots “

(21R) *Ivan ILIUC*

“ Wear Fatigue Investigation of Diamond like Carbon Layer using Atomic Force Microscope”

(22R) *Alexandru VLADDEANU, Gabriela VLADDEANU,*

“ Contributions at the study of the starting up process at the earth-moving machinery with hydrostatic driving”

(23R) *I. NITU, Daniel DINU*

“ A simplified method using directed graphs for the kinematic study of planetary mechanisms with cylindrical gears “

(24R) *Ion Florin POPA, Cornel MARIN, Mihaita ARDELEANU,*

“An analyssis method of the roller-bearing assembly”

(25R) *Horia VIRGOLICI, Vasile ZAMFIR, Gabriel DIMIRACHE,*

“Searching for an optimum solutions for mechanisms containing the active modular group with hydraulic or pneumatic cylinder”

(26R) *Mariana ENACHE, Cristina TUINEA BOBE,*  
“ Optical sensors-construction alternatives “

(27R) *Cristina-Luminita TUINEA BOBE, Mariana ENACHE,*  
“ Etching technics in microsystems technologies”

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