

ROMANIAN ACADEMY
Department of Technical Sciences

ACADEMY OF TECHNICAL SCIENCES



**The Annual Symposium of the
Institute of Solid Mechanics**

SISOM 2004

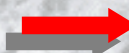
Bucharest

May 20-21, 2004

Session 1

Session 2

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Session 1 – System dynamics and continuum mechanics

(1D) *Mircea ALĂMOREANU*

Evaluation of the available resources of the self-supporting structures of hoisting machines during exploitation

(2D) *Marian ANDRONE*

3D simulation of lamb waves propagation in composite materials

(3D) *Monica BÂLDEA, Marina PANDREA, Sebastian PÂRLAC, Nicolae-Doru STĂNESCU, Jan-Cristian GRIGORE*

About the bending vibrations with random excitations of the straight bars

(4D) *Monica BÂLDEA, Marina PANDREA, Nicolae-Doru STĂNESCU*

Algorithm for the calculus of the bending vibrations with random excitations of the straight bars

(5D) *Daniela BARAN*

Virtual prototyping – stress analysis of the wing of the IAR-99

(6D) *Mărgărit BAUBEC, Aron IAROVICI*

Shapes of free vibration of a circular plate

(7D) **Florin BAUSIC, Vincent STALON**

Static analysis of a planar truss

(8D) **Silvia CODREANU, Veturia CHIROIU**

On the Control of semi-active DRY damping

(9D) **Stefania DONESCU**

On the describing the propagation of waves in DRIP media

(10D) **Rodica IOAN**

A viscoplastic model of asymmetrical cold rolling

(11D) **Dan IORDACHE, Stefan PUSCA, Viorica IORDACHE**

Numerical analysis of some experimental data concerning the size effects on fracture parameters

(12D) **Dan-Alexandru IORDACHE**

On the frequency dependence of the viscous friction coefficient corresponding to the elastic waves propagation

(13D) **Vlad Grigore LAȘCU, Cornel Mihai NICOLESCU, Nicoleta CĂRUȚAȘU**

Toolholder/ spindle interfaces for high-speed machine tools

(14D) **Silviu MACUTA**

Determining the deformations of the transition from the elastic to elastic-plastic domain

(15D) **Silviu MACUTA, Simona STOENESCU**

Approach to the tension states of imposed deformations occurring in steels subject to pure bending, used in machine manufacturing

(16D) ***Ioan MAGHETI, Nicolae ENESCU***

Analysis of the vibratory behavior of a complex structure using SEA method

(17D) ***Doina MARIN***

Error prediction and compensation for CNC machine tools

(18D) ***Oana MARIN, Veturia CHIROIU***

On the closed form solutions of the sine-gordon equation

(19D) ***Marcel MIGDALOVICI, Justin ONIȘORU, Emil VIDEA, Alexandru ALBRECHT***

Finite element method for control of vibration of overhead line conductors

(20D) ***Mircea MIȘICU***

Phenomenological analysis of dual theory of continuum. Fission – Tension and Fusion - Damage in the frame of plastic - Anticlastic proceses

(21D) ***Gheorghe MORARU***

About the new approach in obtaining the integral equations for three dimensional bodies with cracks

(22D) ***Valeria MOSNEGUTU, Ligia MUNTEANU***

On the dynamic equations of multibody systems subject to control

(23D) ***Ion NAVAL***

About some automodel solution for symmetrical axis problem in dynamic at two-component theory of elasticity

- (24D) **Grigore Liviu ODOBESCU, Rares Alexandru ODOBESCU**
“Intelligent” commands for shock absorbers based on magnetic fluid use
- (25D) **Aron IAROVICI, Lucian CĂPITANU, Justin ONIȘORU**
The THA effects on the mechanical behaviour of the femur
- (26D) **Horia PAVEN, Sandor POPOVICS**
Basic mixing rules and rheodynamic effects in ternary phase-in-phase in phase composite systems with linear viscoelastic components. I. the storage modulus
- (27D) **Horia PAVEN, Sandor POPOVICS**
Basic mixing rules and rheodynamic effects in ternary phase-in-phase in phase composite systems with linear viscoelastic components. II. the loss modulus
- (28D) **Ioan RUGINĂ, Cristian RUGINĂ**
Damping and its effects in high power ultrasonic systems
- (29D) **Vincent STALON, Florin BAUSIC**
Modal analysis of a 3d crane
- (30D) **Nicolae-Doru STĂNESCU, Nicolae PANDREA**
Determination of the moving equations for a many degrees of freedom system using kane’s equations
- (31D) **Petru STIUCA**
The eigen-value approach in modeling the propagation of waves in a viscoelastic medium
- (32D) **Gabriel TEODORESCU, Petru FUNAR**
A common approach for time of flight diffraction and classical ultrasonic NDT: uncertainties

(33D) *Nicolae CONSTANTIN, Hans Christian Götting, Dan Mihai CONSTANTINESCU, Mircea GĂVAN, Dorin ROȘU*

Drop impact monitoring – an important contribution to the integrity evaluation of composite structures

(34D) *Viorel SERBAN, Gheorghe GHITA, Florin MAILAT, Ana-Maria MITU*

A new vibration isolation method of forging hammer

(35D) *Cristian RUGINĂ*

Bidimensional simulation of elastic wave propagation with applications in nondestructive testing

(36D) *Marius GIUCLEA, Tudor SIRETEANU*

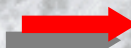
Comparative study of semi-active control strategies for vehicle suspensions equipped by magnetorheological dampers

(37D) *Daniel BALDOVIN, Dan DUMITRIU*

Experimental analysis of dynamic response of a railway car

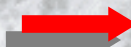
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Session 2 – Robotics, mechatronics, friction and wear investigations of the materials

(1R) ***George C. BALAN, Alexandru EPUREANU***

The monitoring of a lathe using an artificial neural network – 1st part (theoretical basis)

(2R) ***Liviu BRINDEU, Mircea FENCHEA***

Optimization of the forms of the hammer construction for material crushing

(3R) ***Lucian CAPITANU, Justin ONISORU, Aron IAROVICI***

Comparative wearing coefficient – a possible way for tribological characterization of frictional couples

(4R) ***Vicențiu CIOC***

Outcomes and apparatus for “global diagnosis” of liquid lubricants with the lubricant film extrusion phenomenon (squeeze-film)

(5R) ***Sergiu-Boris CONONOVICI, Wladimir RACOVITĂ***

An extension of a mobile robot aptitudes using a rule base obtained by genetic learning

(6R) ***Rodica COZMA***

Method to determine the friction coefficients for ball sliding bearings

(7R) ***Rodica COZMA, Vicențiu CIOC***

Experimental results on friction coefficients of ball sliding bearing

- (8R) *Adrian Cătălin DRUMEANU, Niculae Napoleon ANTONESCU, Ion NAE, Marius Gabriel PETRESCU*
Non-isothermal stress cycle parameters influence on the middle alloy steels durability
- (9R) *Adrian Cătălin DRUMEANU, Ion NAE, Marius Gabriel PETRESCU*
Great wear couples operating reliability of the r1ac type bore-hole pumps
- (10R) *Mariana ENACHE, Cristina ȚUINEA BOBE, Valerică CIMPOCĂ, Nicolae IONIȚĂ*
The dynamic modelling of adhesion based micro-manipulation
- (11R) *C.GHEORGHIES, V. PAUNOIU, D. NICOARA, S. CONDURACHE-BOTA*
Stress states in some heat exchanger plates
- (12R) *Ivan ILIUC*
Micro-pitting wear on steel surface in lubricated steel on tin friction pair
- (13R) *Eugen MERTICARU, Cezar DUCA, Viorel CIAUSU*
Aspects regarding dynamic modeling of a cam mechanism
- (14R) *Gabriel-Arin MIHALCEA*
Theoretical aspects on the microasperity lubrication
- (15R) *NAE Ion, ANTONESCU Niculae Napoleon, PETRESCU Marius Gabriel, DRUMEANU Adrian Catalin*
The simulation of multidimensional thongs' working. requirements, restrictions, analysis model (I)
- (16R) *NAE Ion, PETRESCU Marius Gabriel, DRUMEANU Adrian Catalin*
The simulation of multidimensional thongs' working. requirements, restrictions, analysis model (II)

(17R) ***Gheorghe NIȚU, Ion NIȚU, Daniel DINU***

The path tracker mobile robot RMUT-1

(18R) ***Ion NIȚU, Sergiu-Boris CONONOVICI, Wladimir RACOVITĂ***

Joint Coordinates Generation for a planar redundant robot

(19R) ***Adrian OLARU***

Virtual Labview instrumentation for the simulation of the industrial robot elements and systems

(20R) ***Adrian OLARU***

Assisted research with virtual labview instrumentation of the industrial robot electro hydraulic servo systems

(21R) ***Amedeu ORĂNESCU, Emil ROȘU, Silvia BEJENARU, Mădălina RUS***

The process of kinematic conversion in the mobile systems of rigid bodies

(22R) ***Horia PANAITOPOL, Constantin UDREA***

Profiling fingers, a means of improving the precision of the grippers

(23R) ***Nicolae PANDREA, Marina PANDREA, Nicolae-Doru STĂNESCU***

Variation of the kinetic energy at the friction collision of the rigid body

(24R) ***Marius Gabriel PETRESCU, Ion NAE, Adrian Catalin DRUMEANU***

The effect of heat treatments on the behavior of welded joints by stress corrosion cracking

(25R) ***Marius Gabriel PETRESCU, Niculae Napoleon ANTONESCU, Ion NAE, Adrian Catalin DRUMEANU***

Methods for the evaluation of the residual stress level in multiple pass welding

(26R) ***POPA Ion Florin, ARDELEANU Mihăiță, MARIN Cornel, VOICU Mihaela***
Positioning control of translation module using incremental transducers

(27R) ***Stefan RUSU, Simona GAFAR***
Mathematical simulation of the cutting force related with the rate of cutting lagging dependence

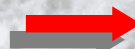
(28R) ***Laurențiu SÂRBU***
The dynamic design of equipment for road construction works

(29R) ***Luige VLADAREANU, Tudor SIRETEANU, Thomas PETERSEN***
Open architecture systems for the semi-active control of the magnetorheological dissipators dynamic systems

(30R) ***Alexandru VLĂDEANU, Gabriela VLĂDEANU***
Contributions regarding the modelling of the hydraulic hammers used in constructions

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