

PROGRAM AVMS-2025

Friday, 30.05.2025

8.00-9.00 Registration of participants - Romanian Academy, Branch of Timisoara, Bd. M. Viteazu, 24

9.00-9.30 Opening ceremony - Romanian Academy Amphitheater

9.30-11.30 Plenary lectures

- Plenary speaker 1

Jan Awrejcewicz – Łódź University of Technology, Poland

Control of self-excited vibrations in smooth and non-smooth systems

- Plenary speaker 2

Dumitru Caruntu – University of Texas-Rio Grande Valley, USA

Inverse dynamics modeling of high-impact plyometric exercises: Vertical jump and drop-landing analysis

- Plenary speaker 3

Livija Cveticanin – University of Novi Sad, Serbia

Truly nonlinear oscillator with position-dependent mass: Theory and application

- Plenary speaker 4

Mehmet Pakdemirli – Manisa Celal Bayar University, Turkey

New developments in perturbation based analytical techniques with applications to nonlinear dynamics

11.30-12.00 Coffee break, refreshment

Session 1 – Vibration I

Friday, 30.05.2025, 12.00-14.00, Academy amphitheater

Chairman: Dumitru I. CARUNTU

Dumitru I. Caruntu, Alfirio Trejo

Gait deviation index for assessing kinematic adaptations to speed variations in human walking

Polidor Bratu, Ovidiu Vasile, Cornelia Dobrescu, Patricia Murzea, Aurora Potârniche

Dynamic response to seismic action for a foundation isolated building with different elastomeric devices

Dumitru I. Caruntu, Miguel Martinez

Models of electrostatically fringe field actuated MEMS resonators: Voltage-amplitude response of parametric resonance

Valentin Racasan, Nicolae-Doru Stanescu

Some aspects concerning the optimization of deformations for a system of spatial bars connected by spherical joints and having one common end

Andrei Tudor, Polidor Bratu

Exterior structural systems with FVDs: A retrofit strategy for resilient and functional buildings

Alexandru-Cristian Popa, Nicolae-Doru Stanescu

Some aspects concerning the dynamics of a half of automotive with non-linear polynomial stiffness

Nicolae-Doru Stanescu

On a spatial system of cantilever bars with one common end

Session 2 – Acoustics & Vibration

Friday, 30.05.2025, 12.00-14.00, Academy Conference Room

Chairman: Momir PRAŠČEVIĆ

Momir Praščević, Darko Mihajlov, Roumen Iankov, Petar Jovanović

Selection of materials for calibration samples and tube terminations for acoustic testing in impedance tube

Marko Mančić, Dragan Jovanović, Milena Mančić, Milena Medenica, Miomir Raos

Vibrations level analysis of the electric motor and reducer for the three-roller machine in rubber make industry-a case study

Nodira Abed, Roumen Iankov, Alexander Alexiev, Maria Datcheva, Sayibjan Negmatov, Momir Praščević

Key aspects in the creation of new acoustic multi-functional composites for environmental risks and health hazards reduction

Iva Salom, Dejan Todorović, Jovana Novaković, Mirjana Mihajlović, Milica Raičković, Vladimir Čelebić

A novel instrument for in-situ measurement of acoustic characteristics of noise barriers

Violeta Stojanović, Zoran Milivojević, Bojan Prlinčević, Dijana Kostić

Comparative analysis of the regression error in STI estimation for a lecture hall

Valentina Golubović-Bugarski, Gordana Tošić

Sound power determination for vibrating screen machine intended for construction waste separation

Session 3 – Bioengineering & Bioacoustics

Friday, 30.05.2025, 12.00-14.00, B1, Room M104

Chairman: Dan B. MARGHITU

Andreea Stoia, Ramona Nagy, Karoly Menyhardt, Dan Ioan Stoia

Fourier approximation in altered human gait

Flavius-Andrei Barbulescu-Petrescu, Iulia Concioiu, Alexandru Andrei

Pahontiu, Alin-Florin Totorean, Daniel Malita

Computational fluid dynamics of blood flow in aorta and branches in the presence of right iliac aneurysm

Lucian Rusu, Ana Cotoarba

Design and implementation of an articulated arm for measuring the spine coordinates

Ionut Geonea, Nicolae Dumitru, Andrei Corzanu, Daniela Tarnita

Kinematic design and simulation-based evaluation of lower limb mechanisms for a rehabilitation exoskeleton

Mihaela Galescu, Laura Jurca, Dan Ioan Stoia, Alin-Florin Totorean

Body balance modification during virtual reality session with applications in education

Jinghua Cao, John Schumacher, Dan B. Marghitu

Horse gait sound using sample entropy

Alexandru-Vasile-Ioan Onaci, Alin-Florin Totorean, Ovidiu-Horea Bedreag, Marius Papurica

Numerical analysis of airflow in a patient-specific 3D reconstructed trachea and bronchi model

14.00-15.30 Lunch – Restaurant

Session 4 – Vibration II

Friday, 30.05.2025, 15.30-17.30, Academy amphitheater

Chairman: Gilbert-Rainer GILLICH

Dan B. Marghitu – Auburn University, USA

Audio dynamics for equine locomotion

Codruța Oana Hamat, Rusalin Lucian Paun, Gilbert-Rainer Gillich

Iterative frequency excitation technique for accurate modal analysis

Ionut Geonea, Nicolae Dumitru, Valeriu Ionica, Leonard Ciurezu-Gherghe

Analytical modelling of connecting rod vibrations in a flexible crank-slider mechanism

Dan Alexandru Pîrșan, Patric Timotei Stan, Zeno-Iosif Praisach, Cornel Hațiegan

Natural frequency of a warren truss using FEM and experimental measurement in LabView

Ionela Harea, Zeno-Iosif Praisach, Cristian Tufiși

Damage assessment on a thin circular plate using artificial intelligence

Carmen Nicoleta Debeleac, Daniel Sorin Miron

Methods for identifying and characterizing the response of soils to dynamic actions in the compaction process

Poster presentation

Miljana Prica

SUNDANSE – Innovative sediment management framework for a SUsustainNable DANube black SEa system - (HORIZON-MISS-2023-OCEAN-01-02)

Session 5 – Vibration III

Friday, 30.05.2025, 15.30-17.30, B1, Room 002

Chairman: Nicolae HERISANU

Nicolae Herisanu, Bogdan Marinca, Vasile Marinca

Nonlinear vibration of piezoelectric energy harvester under mechanical impact

Bogdan Marinca, Nicolae Herisanu, Vasile Marinca

Analytical solution for carbon nanotube-reinforced composite beam using nonlocal beam theory

Vasile Bacria, Sebastian Capotescu, Cristina Chilibaru-Opritescu, Nicolae Herisanu

Ensuring acoustic comfort in interior spaces using efficient freestanding acoustic partition walls

Mihaela Picu

A study of hand arm vibrations action on embankment compactor operators

Gina Diana Muscă (Anghelache)

Pneumatic conveyor used in agriculture-modelling and study with finite elements

Aurora Potirniche, Gigel Capatana

Considerations on 3D modeling and finite element analysis for a tree transplanting equipment

18.00 – Conference dinner

Saturday, 31.05.2025

Session 6 – Vibrations IV

Saturday, 31.05.2025, 9.00-12.00, B1, Room M204

Chairman: Nicolae HERISANU

Dmytro Savielov, Viktoriia Kulynych, Elena Kobilskaya, Ruslan Puzyr

Determination of rheological characteristics of vibrating metal powder

Ciprian Dragne

AI in detection, localization and quantifying of damages under vibrations

Maciej Dutkiewicz

Vibration analysis of substation rigid-bus structure

Teofil-Alin Oncescu, Carmen Brăcăcescu, Daniela Tarnita, Nicolae-Valentin Vlăduț, Iuliana Găgeanu, Ioan Catalin Persu

Analysis of vibration impact on tractor drivers on plowed land

Sorin Simion, Angelica Gaman, Marius Kovacs, Alexandru Simion, Izabella Kovacs

Dosimeters versus sound level meters. Case study

Nicoleta Olărescu, Dinel POPA, Claudia-Mari POPA

Seven degree of freedom model for studying the influence of anti-roll bars

Maria Luminita Scutaru, Mihaela Violeta Munteanu, Vasile Gheorghe, Sorin Vlase

Behavior of a multiple speed regulator

Sorin Vlase, Iuliu Negrean

Alternative analytical formulations in vibration analysis of multibody systems

13.00 - Cultural program