

International Conference of Engineering Vibration (ICoEV-2017)

Preface

The International Conference of Engineering Vibration (ICoEV) originates from a long-running series called the International Conference of Vibrational Problems (ICoVP), which was founded in India over 20 years ago. The last conference organised in Lubljana in 2015, was renamed as International Conference of Engineering Vibration (ICoEV). The ICoEV-2017 was organised by the Institute of Information and Communication Technology and by the Institute of Mechanics at the Bulgarian Academy of Sciences and held between 4 and 7 September 2017 in Sofia, the capital of Bulgaria. The conference has attracted more than 150 participants from 34 countries including senior scientists, PhD students and practicing vibration engineers.

The conference was based on two full days and two half days of technical presentations, structured into four parallel sessions. Six invited lectures gave plenary talks on important and state of the art problems on dynamics and vibrations.

The topics of the conference included Structural Dynamics, Wave Propagation, Fluid-Structure Interactions, Dynamics of Rotating Systems, Structural Health Monitoring, Vibration Control and Isolation, Experimental Techniques, Energy harvesting systems, Vibration and control in technological process, Biomechanics and other vibration themes.

The scientific program was organized into 16 mini-symposia and one other with general topics:

- Mitigation of Vibrations of Mechanical and Structural Systems;
- Nonlinear Oscillations and Controls of Mechanical, Civil, Aerospace and Naval Structures
- Modelling, Methodologies and Engineering Applications of Nonlinear Dynamical Systems;
- Vibration of Solids and Structures under Moving Loads: Modelling and Analysis;
- Dynamics of Composite and Smart Structures
- Nonlinear Dynamics of MEMS & NEMS
- Vibration of Beams, Plates and Shells, from Nano to Macro
- Nonlinearity and Stochasticity in Vibrating Systems
- Vibration in Mechanical and Biomechanical Systems
- Modelling of Friction and Dynamics of Frictional Oscillators
- Active Vibration Control
- Nonlinear Effects in Broadband Energy Harvesting from Mechanical Vibrations
- New Trends in Analytical Approaches to Nonlinear Vibration
- Vibration-Based Structural Health Monitoring Data Analysis and Time Series Methods
- Wave Mechanics: Generation and Propagation of Waves in Fluids, Solids and Structures
- Vibration and Control in Downhole Drilling Processes

During the conference the advanced scientific achievements in the field of dynamics and stability of mechanical systems were presented. We believe that the scientific results presented at ICoEV-2017 will contribute to the clarification of many scientific issues related to vibrations and the further development of analytical, numerical and experimental modelling of dynamic processes in mechanical systems.

In the current Proceedings of ICoEV-2017 a part of the contribution presented at the conference are published.

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