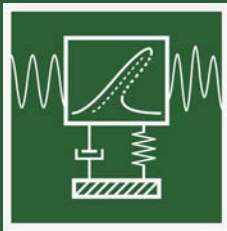


The 37th International Conference on VIBROENGINEERING

Bratislava, Slovakia
April 25-26th, 2019



JVE INTERNATIONAL

www.jvejournals.com

www.jveconferences.com



JVE INTERNATIONAL

www.jvejournals.com
www.jveconferences.com

The 37th International JVE Conference

New Trends in Dynamics of Structures

25-26th April 2019, Bratislava, Slovakia



The 37th International JVE Conference will be held Bratislava, Slovakia. Its purpose is to provide a platform for scientists, engineers and practitioners throughout the world to exchange ideas and present their latest research results in order to further promote the Vibroengineering and its applications to the aerospace, automobile, energy and other industries. The Conference is organized by **JVE International** in partnership with **Slovak Society for Mechanics** and **Slovak University of Technology in Bratislava, Slovakia**.

The main theme of the conference focuses on (but not limited to):
New Trends in Dynamics of Structures

General Topics of the Conference:

- Materials and Measurements in Engineering
- Mathematical Models in Engineering
- Acoustics, Noise Control and Engineering Applications
- Mechanical Vibrations and Applications
- Fault Diagnosis Based on Vibration Signal Analysis
- Vibration Generation and Control
- Seismic Engineering and Applications
- Modal Analysis and Applications
- Vibration in Transportation Engineering
- Flow-induced Structural Vibrations
- Biomechanics and Biomedical Engineering
- Chaos, Non-linear Dynamics and Applications
- Dynamics and Oscillations in Electrical and Electronics Engineering
- Fractional Dynamics and Applications
- System Dynamics in Manufacturing System Modeling
- Dynamics of Smart and Functionally Graded Materials

Internationally renowned invited speakers and contributing authors from all over the world will present the latest advances in the area of Vibroengineering. This conference will feature a broad range of high-level technical presentations including invited distinguished experts. The conference will provide an opportunity to communicate your recent research advances, exchange ideas in innovative engineering technologies, meet old friends and make new business partners in the area of Vibroengineering. With your participation, this Conference will prove to be an exciting scientific event, a fruitful opportunity to promote scientific research and technological development of Vibroengineering and its applications.

With your participation, this conference will prove to be a very exciting event, a fruitful opportunity, to promote scientific research and technological development of vibration engineering and its applications.

All papers presented at JVE Conferences are published as short Conference papers in Vibroengineering Procedia. Conference papers published in Vibroengineering Procedia are indexed in EI Compendex, Scopus, Inspec, Gale Cengage, EBSCO, Google Scholar and CNKI Scholar.

The authors of best papers presented at the Conference will be invited to prepare the extended version of their papers (10-20 pages) which will be considered for publication in Journal of Vibroengineering (indexed in Web of Science, EI Compendex, EBSCO, Gale Cengage and Inspec), Journal of Measurements in Engineering (indexed in Web of Science, EI Compendex, EBSCO, Gale Cengage and Inspec) and Journal of Mathematical Models in Engineering (indexed in EBSCO, Gale Cengage).

The Conference Venue is at Faculty of Civil Engineering, Slovak University of Technology (STU).
Bratislava, Slovakia
48°09'07.6"N 17°06'55.8"E

On behalf of the Organizing Committee, we would like to welcome the delegates to the 37th International JVE Conference. We hope that you would enjoy the conference and find the program of the Conference exciting. We look forward to meeting you in April 2019 in Bratislava.



Chairs:

Prof. **Milan Sokol** Department of Structural Mechanics, Faculty of Civil Engineering,
Slovak University of Technology in Bratislava, Slovakia

Prof. **Minvydas Ragulskis** JVE International, Lithuania

Scientific Organizing Committee:

K. J. Bathe	Massachusetts Institute of Technology, Massachusetts, USA
T. J. R. Hughes	The University of Texas at Austin, USA
H. Mang	Vienna University of Technology, Austria
J. Maca	Czech Technical University in Prague, Czech Republic
D. Novak	Brno University of Technology, Czech Republic
E. J. Sapountzakis	National Technical University of Athens, Greece
A. Strauss	University of Natural Resources and Life Sciences, Austria
J. Murin	Slovak University of Technology in Bratislava, Slovakia
J. Ravinger	Slovak University of Technology in Bratislava, Slovakia
V. Sladek	Slovak Academy of Sciences, Slovakia
G. Georgoussis	School of Pedagogical and Technological Education, Greece
J. García García Sanz-Calcedo	University of Extremadura, Spain
M. Aminbaghai	Technical University Vienna, Austria
M. X. Rodríguez-Paz	Technologico de Monterrey, Mexico
M. Zmindak	University of Zilina, Slovakia
N. Jendzelovsky	Slovak University of Technology in Bratislava, Slovakia
J. Kralik	Slovak University of Technology in Bratislava, Slovakia
J. Melcer	University of Zilina, Slovakia
E. Kormanikova	Technical University of Kosice, Slovakia

Organizing Committee:

V. Babitsky	Loughborough University, UK
M. Bayat	Roudehen Branch, Islamic Azad University, Iran
I. Blekhman	Mekhanobr – Tekhnika Corporation, Russia
K. Bousson	University of Beira Interior, Portugal
M. Brennan	University of Southampton, UK
Prof. Rafał Burdzik	Silesian University of Technology, Faculty of Transport, Poland
Prof. M. S. Cao	Department of Engineering Mechanics, Hohai University, China
Lu Chen	Beihang University, China
F. Chernousko	Institute for Problems in Mechanics, Russia
Z. Dabrowski	Warsaw University of Technology, Poland
Y. Davydov	Institute of Machine Building Mechanics, Russia
J. Duhovnik	University of Ljubljana, Slovenia
A. El Sinawi	The Petroleum Institute, United Arab Emirates
R. Ganiev	Blagonravov Mechanical Engineering Research Institute, Russia
W. H. Hsieh	National Formosa University, Taiwan
V. Lyalin	Izhevsk State Technical University, Russia
R. Maskeliūnas	Vilnius Gediminas Technical University, Lithuania



L. E. Muñoz	Universidad de los Andes, Colombia
G. Panovko	Blagonravov Mechanical Engineering Research Institute, Russia
N. Perkins	University of Michigan, USA
L. Qiu	Nanjing University of Aeronautics and Astronautics, China
S. Rakheja	Concordia University, Canada
M. A. F. Sanjuan	University Rey Juan Carlos, Spain
G. Song	University of Houston, USA
S. Toyama	Tokyo A&T University, Japan
K. Uchino	The Pennsylvania State University, USA
A. Vakhguel't	Nazarbayev University, Kazakhstan
P. Vasiljev	Lithuanian University of Educational Sciences, Lithuania
V. Veikutis	Lithuanian University of Health Sciences, Lithuania
J. Viba	Riga Technical University, Latvia
V. Volkovas	Kaunas University of Technology, Lithuania
J. Wallaschek	Leibniz University Hannover, Germany
Mao Yuxin	Zhejiang Gongshang University, China
M. Zakrzhevsky	Riga Technical University, Latvia



Conference Program

Day 1: April 25

Location: Faculty of Civil Engineering, STU, Room B-105

08:30-09:30	Registration
-------------	--------------

Day 1: April 25

Location: Faculty of Civil Engineering, STU, Room B-105

	PLENARY SESSION Session Chairs: Prof. Minvydas Ragulskis and Prof. Milan Sokol
09:30-09:40	Conference Opening Ceremony
09:40-10:00	Welcome Speech: Prof. Minvydas Ragulskis. Vibroengineering – past, present and the future
10:00-10:15	Dr. George Georgoussis. Mass eccentricity effects on the torsional response of inelastic buildings
10:15-10:30	Dr. Márfoldi Monika. Considering of a simplified model of passing train causing dynamic effects on railway bridge for SHM purposes
10:30-10:50	Presentation by Vibration Research: Pavel Fišer, Method to accelerate vibration tests

Day 1: April 25

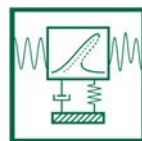
Location: Faculty of Civil Engineering, STU, Room B-105

10:50-11:15	Coffee Break
-------------	--------------

Day 1: April 25

Location: Faculty of Civil Engineering, STU, Room B-105

	ORAL SESSION 1 Session Chairs: Prof. Minvydas Ragulskis and Dr. Ladislav Sator
11:15-11:30	Malin Cristian-Tatian. Comparison of the performance of friction pendulums with uniform and variable radii
11:30-11:45	Cristian Tufisi. The effect of a crack near the fixed end on the natural frequencies of a cantilever beam



11:45-11:00	Gilbert-Rainer Gillich. Assessing multiple cracks in beams by a method based on the damage location coefficients
12:00-12:15	Jozef Melcer. Two span bridge under moving load

Day 1: April 25 **Location: Faculty of Civil Engineering, STU, Room B-105**

12:15-13:30	Break for lunch refreshment
-------------	------------------------------------

Day 1: April 25 **Location: Faculty of Civil Engineering, STU, Room B-105**

	ORAL SESSION 2 Session Chairs: Prof. Milan Sokol and Prof. Gilbert-Rainer Gillich
13:30-13:45	Katarína Lamperová. Dynamic response of bridges tested by radar interferometry
13:45-14:00	Eva Kormanikova. Modal analysis of sandwich panel with composite laminated faces
14:00-14:15	Abdollah Malekjafarian. On the estimation of foundation damping of mono pile-supported offshore wind turbines
14:15-14:30	Michal Venglár. Experimental modal analysis of diagonal members
14:30-14:45	Jan Štěpánek. Dynamic response of structures with tuned mass dampers in modal coordinates
14:45-15:00	Guifeng Zhao. Topology optimization for vibrating structures with the BESO method

Day 1: April 25 **Location: Faculty of Civil Engineering, STU, Room B-105**

15:00-15:30	Coffee Break
-------------	---------------------

Day 1: April 25 **Location: Faculty of Civil Engineering, STU, Room B-105**

	ORAL SESSION 3 Session Chairs: Prof. Jiří Máca and Dr. George Georgoussis
15:30-15:45	Olga Hubova. Wind loads and their reduction on mesh fabrics
15:45-16:00	Luis Fernando Garzón Amortegui. Use of viscous fluid dampers for the improvement of the seismic response of RC structures
16:00-16:15	Ladislav Sator. Vibration of thin elastic FGM plates with multi-gradation effects
16:15-16:30	Filip Pachla. The impact of predicted vibrations from mining shocks on the viaduct – case study



JVE INTERNATIONAL

www.jvejournals.com
www.jveconferences.com

16:30-16:45	Pornporm Boonporm. Vertical Vibration Attenuation for Truck's Suspension Seat by Adjusting Air Spring Stiffness
16:45-17:00	Feng Yu. The vibration reduction design of single-cylinder engine based on the balance shaft

Day 1: April 25 **Location: Faculty of Civil Engineering, STU, Room B-105**

	CLOSING SESSION
17:00-17:15	Closing Ceremony

Day 1: April 25 **Location: Faculty of Civil Engineering, STU**

18:00-19:00	Transfer from Conference Venue to Conference Dinner
-------------	--

Day 1: April 25 **Location: Restaurant Altitude: 48.1825, 17.0948**

19:00-22:00	Conference Dinner
-------------	--------------------------

Day 2: April 26 **Location: Danube River Pontoon No. 40: 48°08'22.3"N 17°06'59.7"E**

09:30-12:00	Technical tour – “Bridges across the Danube River” (boat trip)
-------------	---



JVE INTERNATIONAL
www.jvejournals.com
www.jveconferences.com

Sponsors and Partners



Slovak Society for Mechanics

The **Slovak Society for Mechanics** of Slovak Academy of Sciences has a long history of cooperation between experts within the field of Applied Mechanics. The Society organizes many different specialized events: invited lectures of internationally renowned experts; the international conferences, the most successful one has been the International Conference “New Trends in Statics and Dynamics of Buildings” which has a 15-year long tradition. The Society also provides support of young scientists in the field.



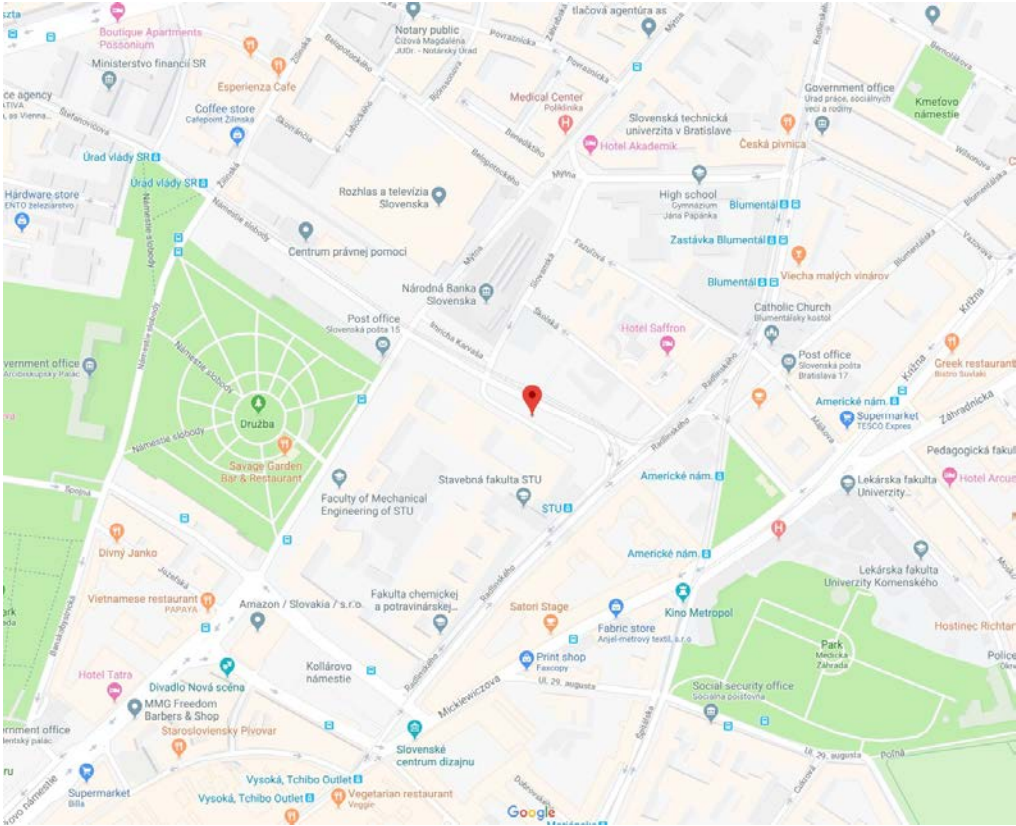
The **Slovak University of Technology** in Bratislava strives to be an internationally recognized and important, research-oriented technical university. It seeks to provide a high quality, internationally comparable education to a broad spectrum of students from the young generation in promising fields, based on independent and critical thinking, entrepreneurship and creativity, with a view to practical application and success in life, and taking into account the human aspects of education and technological progress. The university aims to contribute to the economic and social development of the region.



Celebrating 23 years in business, U.S. based **Vibration Research** (VR) is the innovator in vibration control. We listen to our customers’ needs and offer testing products, software and support that deliver unrivaled value. Our VR9500 Revolution Vibration Controller and easy-to-use VibrationVIEW software includes patented innovations used by testing labs and engineers in a wide range of sectors across the world. iDOF™, FDS, FDR, and Kurtosion® are a few of VR's applications that accurately and quickly solve troublesome industry issues like over-and-under testing and predicting a product's point of fatigue. We also now offer our new data acquisition and analysis tool, the ObserVR1000. We have satellite offices in China, Germany, Russia, the Czech Republic, India and the United Kingdom. Visit us to learn more about our products and latest innovations!



Conference Location

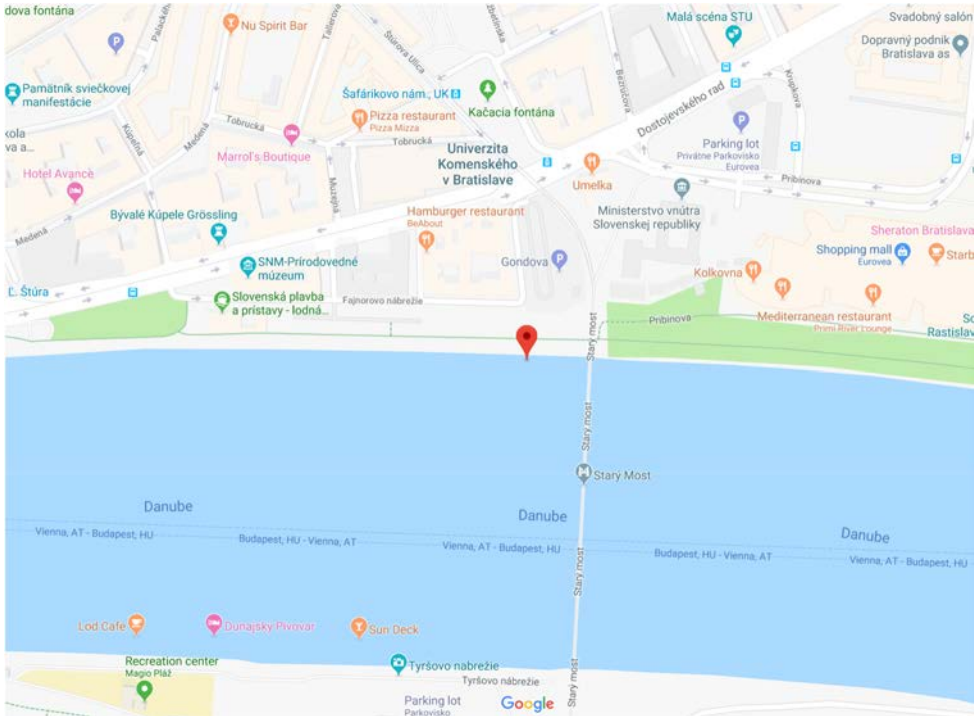


Faculty of Civil Engineering, Slovak University of Technology (STU).
Bratislava, Slovakia

48°09'07.6"N 17°06'55.8"E



Technical Tour Location



Danube River, Pontoon No.40
48°08'22.3"N 17°06'59.7"E