ICOVIS 2013 - SCIENTIFIC PROGRAMME

Key-Note Lectures		
Monday, 15:00 - 16:00		
Tuesday - Friday, 09:00 - 10:00		
Ibrahim, Raouf A.	Wayne State University, Detroit	Recent Advances in Vibro-Impact Dynamics
Babitsky, Vladimir; Hiwarkar, Vikrant	Loughborough University/ Nottingham University	Monitoring and Control of Structures with Developing Discontinuity
Manevitch, Leonid	Institute of Chemical Physics, Moscow	New approach to description of strongly modulated processes
Okuma, Masaaki	Tokyo Institute of Technology	Vibration damping material composed of polyurethane foam and water
Fidlin, Alexander	Karlsruhe Institute of Technology	Dynamic friction effects in automotive transmissions

Opening	
Monday, 14:00 - 15:00	

Fundamentals of non-smooth interaction		
Monday, 16:30 - 18:30		
Blekhman, Iliya	Russian Academy of Sciences, St. Petersburg	Complexity ("chaos") as a result of multimode character of vibro-impact and some other dynamical systems
Astashev, Vladimir; Semenova, Elena	Institute of Machine Studies, Russian Academy of Sciences, Moscow	Constrained oblique impact in models of vibro-impact systems
Sherbakov, Sergei S.	Belarusian State University	Mechanical States of Multielement Tribo-fatigue System with the Account of Contact Interaction and Dynamic Effects
Sosnovskiy L.A., Sherbakov S.S.	S&P Group "TRIBO-FATIGUE", Gomel, Belarus	Non-Cassical Formulation of Dynamic Problem

Stability and bifurcation of non-smooth problems

Tuesday, 10:30 - 13:00

Hogan, S. John	Department of Engineering Mathematics, University of Bristol	Piecewise smooth systems: challenges and open problems
Ivanov, Alexander P.	Moscow Institute of Physics and Technology (State University)	A Method of "Step Smoothening" in the Analysis of Discontinuous Bifurcations
Zakrzhevsky, Mikhail V.	Institute of Mechanics, Riga Technical University	The New Bifurcation Theory And Its Application For Analysis Of Vibro-Impact Systems. Bifurcation Groups With Unknown Chaotic And Rare Attractors
Yevstignejev, Vladislav; Zakrzhevsky, Mikhail; Shilvan, Eduard	Institute of Mechanics, Riga Technical University	Instant And Soft Impact Models: Comparison Of Results Of Complete Bifurcation Analysis
Kovaleva, Agnessa	Russian Academy of Sciences, Moskau	Non-smooth approximations in the problem of resonance energy transfer

Friction induced vibrations

Tuesday, 14:00 - 16:00

Hanselowski, Andreas; Hanss, Michael	University of Stuttgart	Fuzzy Arithmetical Uncertainty Analysis for Friction-Induced Vibrations
Ryzhik, Boris	Fa. LuK, Bühl	Assymetry as a tool to suppress friction-induced squeal in a friction unit
Schreiber, Uwe; Rodionow, Paul	ITI GmbH, Dresden	Stability analysis of a self-excited friction oscillator with two masses and constant friction coefficients
Jehle, Georg; Fidlin, Alexander	Institute of Engineering Mechanics (ITM), Karlsruhe Institute of Technology (KIT)	Friction induced non-smooth vibrations in shift gearboxes

Dynamic friction and precise motion control

Tuesday, 16:30 - 18:30

Kremer, Eugen	Fa. LuK, Bühl	A Rigid Body Formulation of the Plane Friction Problem
Klokov, Alexey; Zakrzhevsky, Mikhail; Kremer, Eugen; Schukin, Igor	Institute of Mechanics, Riga Technical University; Luk GmbH, Bühl; Daugavpils branch of Riga Technical University	Complete Bifurcation Analysis of a Pendulum Vibration Absorber with Impact Interactions
Bolotnik, N.; Pivovarov, M; Zeidis, I.; Zimmermann, K.	Technische Universität Ilmenau; Russian Academy of Sciences, Moskau	The Undulatory Motion of a Three-body Chain along a Rough Plane
Bauer, Fabian; Fidlin, Alexander; Seemann, Wolfgang	Institute of Engineering Mechanics (ITM), Karlsruhe Institute of Technology (KIT)	Energy Efficient Bipedal Robots Walk in Resonance

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Dynamics of Machines and Processes 1		
Wednesday, 10:30 - 13:00		
Fuglede, Niels; Thomsen, J. J.	Technical University of Denmark	Roller chain drive vibration analysis based on a string model with boundaries moving non-smoothly
Ispolov, Yu.; Orlov, S.	St. Petersburg State Polytechnical University	Modeling contact interactions in CVT
Shabrov, N.; Ispolov, Yu.; Orlov, S.	St. Petersburg State Polytechnical University	Simulations of dynamics of CVT
Haslinger, Josef; Offner, Günter; Sopouch, Martin	IMCC - Industrial Mathematics Competence Center MathConsult GmbH, Linz; AVL List GmbH, Graz	Non-Smooth Dynamics of Coil Contact in Valve Springs
Matthiesen, Sven; Schäfer, Tobias; Mangold, Sebastian	Institute of Product Engineering (IPEK), Karlsruhe Institute of Technology (KIT)	Modeling of a human hand-arm system under high acceleration caused by power tools

Excursion	
Wednesday, 14:00 - 18:00	

Conference Dinner	
Wednesday, 18:00 - 22:00	

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Nonsmooth Energy System (Energy harvesting) and general Dynamics		
Thursday, 10:30 - 13:00		
Heffel, Eduard; Hagedorn, Peter	Technische Universität Darmstadt	Transmission Characteristics of Energy Harvesting Systems Using Self-Excited Vibrations
Twiefel, Jens	Leibnitz University Hannover	Auto-resonant Calculation of Vibro-Impact Energy Harvesting Devices
Milasauskaite, Ieva; Ostasevicius, Vytautas; Dauksevicius, Rolanas; Gaidys, Rimvydas	Institute for Hi-Tech Development, Faculty of Mechanical Engineering and Mechatronics, Kaunas University of Technology	Influence of contact point location on dynamical and electrical responses of impact-type vibration energy harvester based on piezoelectric transduction
Skubov, Dmitry Yu.; Khodzhaev, K. Sh.	Institute of Problems of Mechanical Engineering, St. Petersburg	Investigation of the problem of synchronization electrical machine with power network
Indeitsev, Dmitry A.; Skubov, Dmitry Yu.; Vavilov, Dmitry S.	Institute of Problems of Mechanical Engineering, St. Petersburg	The Problems of Stability of Synchronous Electrical Machine

Ultrasonic machining		
Thursday, 14:00 - 15:30		
Phadnis, Vaibhav A.; Makhdum, Farrukh; Roy, Anish; Silberschmidt, Vadim V.	Loughborough University	Ultrasonically assisted drilling in carbon/epoxy composites: experiments and FE model
Li Xuan; Meadows, A.; Babitsky, V.; Parkin, R.	Loughborough University	Autoresonant control of ultrasonically assisted drilling: modelling and experiments
Wurpts, Wiebold; Twiefel, Jens	Leibnitz University Hannover	Some aspects on the dynamics of ultrasonic tools with impact

Dynamics of Machines and Processes 2		
Thursday, 16:00 - 18:30		
Alber, Oliver; Mahner, Marcel	TU Darmstadt	Description of Sub- and Superharmonic Motions for Rotor Stator Contact Based
Banakh, Liudmila; Nikifirov, A.	Mechanical Engineering Research Institute,	Vibroimpact regimes in high-speed rotor systems at hydrodynamic interactions
Eckstein, Manuel; Hagedorn, Peter	TU Darmstadt	Modeling of the Non-Smooth Contact in Paper Calenders
Tikhomolov, Arsenty; Fidlin, Alexander	Fa. LuK, Bühl	Nonlinear Dynamic Effect in the Clutch System
Hetzler, Hartmut	Institute of Engineering Mechanics (ITM),	Bifurcation behaviour of classical stability problems under the influence of non-

Contactless metrology and impact fatigue		
Friday, 10:30 - 13:00		
Eidukeviciute, Marija; Volkovas, Vitalijus	Kaunas University of Technology	Application of Numerical Techniques for Defect Detection in Structural Monitoring
Kenderi, Gabor; Fidlin, Alexander	Fa. LuK, Bühl	Identification of Vibro-impact Systems Using Synchronization Based Methods
Merzoug, Mustapha; Ait Segir, Khalid; Miloudi, Abdelhamid; Dron, Jean Paul	Université des Sciences et de la Technologie Houari Boumediènne; Université de Reims	Fault detection in gears by vibratory analysis
Mouhoubi, Said; Azouaoui, Krimo	Université des Sciences et de la Technologie Houari Boumedien (USTHB)	Damage and residual strength of composite plates subjected to impact fatigue
Kaoua, Sid Ali; Mouhoubi, Said; Azouaoui, Krimo	Université des Sciences et de la Technologie Houari Boumedien (USTHB), Alger	Finite element prediction of mechanical behaviour of honeycomb sandwich panels and damage modes under impact fatigue loading

Closing ceremony
Friday, 13:00 - 13:30