

e ICoEV 2020 - Conference Programme - Extended Version (Time is GMT)

Monday (14/12/2020)

Time	Session	Chair	Speaker	Title	Co-authors
	<i>Zoom link</i>	https://us02web.zoom.us/j/84789068108			
08:45	Opening Ceremony				
09:00	Opening Lecture	Marian <u>Wiercigroch</u> University of Aberdeen, UK	Irina <u>Goracheva</u> Russian Academy of Sciences, Moscow	Effect of Mechanical Properties of Contacting Bodies on Deceleration Process	Alexandra Zobova
09:40	Coulomb	Emil <u>Manoach</u> Bulgarian Academy of Sciences, Sofia	Yao <u>Yan</u> UESTC, China	Nonlinear Analysis of Regenerative and Frictional Cutting Dynamics Based on a New Model	J. Xu, M. Wiercigroch
10:00			Oleksandr <u>Menshykov</u> University of Aberdeen, UK	Interface Cracks under Harmonic Shear: Effects of Contact and Friction	V. Menshykov, I.A. Guz
10:20			Andrzej <u>Stefanski</u> Lodz University of Technology, Poland	Synchrony in Frictional Oscillators	D. Pikunov
10:40			Georg <u>Jehle</u> Schaeffler Automotive, Germany	Geometric Judder in Automotive Multi-Disk Clutches: Stochastic Simulation Approach	A. Seifermann
10:50			Heba <u>El-Mongy</u> University of Aberdeen, UK	Nonlinear dynamics of rotor whirling within an asymmetrically supported snubber ring	T. El-Sayed, V. Vaziri, M. Wiercigroch
11:00			Tamer <u>El-Sayed</u> University of Aberdeen, UK	Stability of Journal Bearing Based on Second Order Stiffness and Damping Parameters	H. Sayed
11:10	Comfort Break				
	<i>Zoom link</i>	https://us02web.zoom.us/j/84789068108			
11:20	Euler	Zuzana <u>Dimitrova</u> University of Lisbon, Portugal	Emil <u>Manoach</u> Bulgarian Academy of Sciences, Bulgaria	Vibration of a Cantilever in a Micro-Channel Interacting with Rarefied Gas Flow	K. Shterev
11:40			Patrick <u>O'Brien</u> University of Aberdeen, UK	Nonlinear Beam Approximations to the Principle of Virtual Work	
12:00			Krzysztof <u>Kecik</u> Lublin University of Technology, Poland	Role of Electromechanical Coupling in the Vibration Absorber/Harvester System	A. Mitura
12:20			Andrés <u>García</u> National University of Technology, Argentina	Energy Harvesting from a Rotating Parametric Pendulum via Optimal Control	E. Leonhardt, F. Dotti, C. Vera
12:30			Santhosh <u>B</u> Amrita Vishwa, India	Energy Harvesting Performance of Adaptive Snap through Oscillator	Devarajan K
12:40			Lukasz <u>Kłoda</u> Lublin University of Technology, Poland	Flexural 3:1 Internal Resonances in Hinged Supported Beams with Axial Spring	J. Warminski, S. Lenci, Z. Szmít
12:50	Comfort Break				
	<i>Zoom link</i>	https://us02web.zoom.us/j/84789068108			
13:00	Plenary Lecture	Tomasz <u>Kapitaniak</u> Lodz University of Technology, Poland	Muhammad <u>Haji</u> Stevens Institute of Technology, USA	Vibration-Based Energy Harvesting and Transmission	
13:40	Lyapunov	Janko <u>Slavic</u> University of Ljubljana, Slovenia	Yuri <u>Mikhlin</u> National Technical University "KhPI", Ukraine	Resonance Vibration of the Non-Ideal System Having Mises Girder as Absorber	A. Onizhuk
14:00			Ekaterina <u>Pavlovskaja</u> University of Aberdeen, UK	Vortex-Induced Vibration of Flexible Risers in Ocean Currents	V. Kurushina
14:20			Sergey <u>Lekomtsev</u> Russian Academy of Sciences, Russia	Suppression of Resonance Vibration of Rectangular Plate Interacting with Fluid	A. Kamenskikh, M. Iurlov
14:30			Sandor <u>Beregi</u> University of Bristol, UK	Numerical Bifurcation Analysis of Oscillating Aerofoil under Noise-Load	D.A.W. Barton, D. Rezgui, S.A. Neild
14:40			Rahul <u>Mishra</u> IIT Bombay, India	Effect of Damping on Vortex-Induced Vibration of Circular Cylinder on Nonlinear Spring Support	R. Bhardwaj, S.S. Kulkarni, M.C. Thompson
14:50			Guilherme <u>Jorge Vernizzi</u> University of Sao Paulo, Brazil	Invariant Manifolds for Analysis of Flexible Cylinders Under Vortex-induced Vibration	S. Lenci, G.R. Franzini
15:10	Comfort Break				

Zoom link

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15:20	Poincare	Stefano <u>Lenci</u> Polytechnic University of Marche, Italy	Tomasz <u>Kapitaniak</u> Lodz University of Technology, Poland	Chimera States for Coupled Pendula	D. Dudkowski, J. Wojewoda, K. Czołczynski
15:40			Jun <u>Jiang</u> Xi'an Jiaotong University, China	Global Analysis of Nonlinear Dynamical Systems with Concepts and Methods from Data Science	S. Wang, L. Hong
16:00			Marcelo <u>Savi</u> Universidade Federal do Rio de Janeiro, Brazil	Mechanical Description of Origamis	L.M. Fonseca, G.V. Rodrigues
16:20		Oleksandr <u>Menshykov</u> University of Aberdeen, UK	Sabine <u>Upnere</u> Riga Technical University, Latvia	Inverse Modelling of Rod Behaviour in Flow Using Surrogate-Based Approach	
16:30			Shanti <u>Kandala</u> University of Calgary, Canada	Evolution of Friction Parameters Along Well	J. Auriol, U.J.F. Aarsnes, R. Shor
16:40			Cezary <u>Graczykowski</u> Polish Academy of Sciences, Poland	Mathematical Formulations of Dynamic Response Mitigation for Semi-active Fluid Absorbers	R. Faraj
16:50			Rami <u>Faraj</u> Polish Academy of Sciences, Poland	Control of the Fluid-Based Absorbers under Impact and Vibration Conditions	C. Graczykowski
17:00			Luboš <u>Smolík</u> University of West Bohemia, Czech Republic	Application of Feedforward Networks to Evaluate Joint Forces in Multibody Systems	S. Dyk, J. Rendl
17:10			Idin <u>Nazzari</u> University of Aberdeen, UK	Dynamics of High Frequency Impact in Jarring Operations	E. Pavlovskaja, M. Wiercigroch
17:20			Phablo <u>Ramos Carvalho</u> Federal University of Rio de Janeiro, Brazil	Chimera State Analysis via Energetic Approach	

Tuesday (15/12/2020)		31 speakers			
Zoom link		https://us02web.zoom.us/j/84789068108			
Time	Session	Chair	Speaker	Title	Zoom link
09:00	Plenary Lecture	Marian <u>Wiercigroch</u> University of Aberdeen, UK	Debasish <u>Roy</u> Indian Institute of Science, India	Geometrically Developed Stochastic Dynamics and Applications	
09:40	Newton	Yao <u>Yan</u> University of Electronic Science and Technology of China, China	Wei qiu <u>Chen</u> Zhejiang University, China	Axisymmetric Vibration of Soft Electroactive Cylindrical Shells	F. Zhu, B. Wu
10:00			Yufeng <u>Xing</u> Beihang Univeristy, China	Parameter Spectral Analysis Theory and Generalized Central Difference Method	Y. Ji
10:20			Rafal <u>Rusinek</u> Lublin University of Technology, Poland	Nonlinear Vibration in Bio-Electro-Mechanical System of Human Middle Ear	A. Weremczuk, K. Kecik
10:40			Qingjie <u>Cao</u> Harbin Institute of Technology, China	SD Oscillators, Isolators and Suspensor Free of Resonance	

11:00 Comfort Break					
Zoom link		https://us02web.zoom.us/j/84789068108			
11:20	Watt	Jerzy <u>Wojewoda</u> Lodz University of Technology, Poland	Hiroataka <u>Araki</u> Kyoto University, Japan	Shift Manipulation of Intrinsic Localized Mode in AC Driven Klein Gordon Lattice	T. Hikihara
11:30			Abd <u>Jaffal</u> University of Aberdeen, UK	Design and Testing of Resonance Enhanced Scale Milling Tool for Hard Scales	M. Kapitaniak, V. Vaziri, M. Wiercigroch
11:40			Ningkang <u>Zhang</u> Xi'an Jiaotong University, China	Crack-Tip Stress Field due to Presence of Isotropic Dilatational Inclusions	L. Ma
11:50			Aasifa <u>Rounak</u> Indian Institute of Technology, India	Tracking Survivability of Solutions in Nonlinear Dynamical Systems	S. Biswas, S. Gupta
12:00			Mate <u>Vizi</u> BUTE, Hungary	Control of Cyclic Systems	G. Stepan
12:10			Jiajia <u>Zhang</u> University of Exeter, UK	Development of a Vibro-Impact Self-Propelled Capsule in Millimetre-Scale	J. Tian, B. Guo, Y. Liu, S. Prasad
12:20			Van-Du <u>Nguyen</u> TNU University of Technology, Vietnam	Comparative Study of Vibro-Driven Capsubot	N-T. La, Q-H. Ngo, K-T. Ho, V-C. Nguyen
12:30			Marcin <u>Kowalczuk</u> Lublin University of Technology, Poland	Dynamics of Cantilever Active Bimorph Beam with Electro-Magneto-Mechanical Coupling	J. Latalski, J. Warminski

12:40 Comfort Break					
Zoom link		https://us02web.zoom.us/j/84789068108			
13:00	Plenary Lecture	Giuseppe <u>Rega</u> Sapienza University of Rome, Italy	Stefano <u>Lenci</u> Polytechnic University of Marche, Italy	Nonlinear Waves in Beams on Tensionless Substrates	
13:40	Duffing	Carlos <u>Mazzilli</u> University of São Paulo, Brazil	Vikram <u>Pakrashi</u> University College Dublin, Ireland	Real-Time Monitoring and Assessment of Dynamical Systems	B. Bhowmik, B. Hazra
14:00			Andrzej <u>Mitura</u> Lublin University of Technology, Poland	Piezoelectric Actuator Hysteresis and Its Influence on Efficiency of Vibration Controllers	J. Warminski
14:20			Americo <u>Cunha Jr</u> State Univesrity of Rio de Janeiro, Brazil	Optimization of Energy Harvester via Cross-Entropy Method	

14:40 Comfort Break					
Zoom link		https://us02web.zoom.us/j/84789068108			
15:10	Maxwell	Marcelo <u>Savi</u> Federal University of Rio de Janeiro, Brazil	Dimitri <u>Danulussi Alves Costa</u> Federal University of Rio de Janeiro, Brazil	Controlled Exchange of Co-Existent Attractors	V. Vaziri, M. Savi, M. Wiercigroch
15:20			Agustín <u>Hernández Rocha</u> Instituto Balseiro, Argentina	Analytical Method for Piecewise Linear Oscillators	D. Zanette, M. Wiercigroch

15:30		<u>Aidan Lee</u> University College Dublin, Ireland	Effects of Oscillating Pegs in a Galton Board	K. Nolan, V. Pakrashi
15:40		<u>Virgilio Caetano</u> Federal University of Rio de Janeiro, Brazil	Multimodal Pizza-Shaped Piezoelectric Vibration-Based Energy Harvesters	M. Savi
15:50		<u>João Canisso Valese Norenberg</u> São Paulo State University, Brazil	Application of the Global Sensitivity Analysis on a Bistable Energy Harvester	A. Cunha Jr, S. da Silva, P. Sergio Varoto
16:00		<u>Dan Wang</u> University of Jinan, China	Nonlinear Energy Harvesting from Rotating System	Z. Hao, F. Chen , M. Wiercigroch
16:10		<u>Favour Okosun</u> University College Dublin, Ireland	Biological Sensor for Structural Health Monitoring	S. Guerin, S.A.M Tofail, D. Thompson, M. Celikin, V. Pakrashi
16:20	<u>Patrick O'Brien</u> University of Aberdeen, UK	<u>Breno Ayres Pereira Mendes</u> University of São Paulo, Brazil	Energy Harvesting Using a Non-linear Vibration Absorber with a Piezoelectric Element	C.E.N. Mazzilli, E.A.R. Ribeiro
16:30		<u>Zhifeng Hao</u> University of Jinan, China	Modelling of Electromagnetic Actuator	D. Wang, M. Wiercigroch
16:40		<u>Vinod Yadav</u> MANITB, India	Material Dependent Parameters and Friction in UV Assisted Turning by Inverse Modelling	U. Nath
16:50		<u>Fernando Burgos</u> Balseiro Institute, Argentina	Numerical Analysis of Active Coil-Magnet Vibration Actuator	C. Gonzales Ferrari
17:00		<u>Samuel da Silva</u> São Paulo State University, Brazil	Detecting Loss of Tightening Torque in Bolted Joints Using Gaussian Process Regression	R. O. Teloli, L. P. Miguel, G. Chevalier
17:10		<u>Amin Taraghi Osguei</u> Sahand University of Technology, Iran	Nonlocal Shell Model for Vibration Analysis of Carbon Nanoscrolls	M. Ahmadian, M. Asghari, M. Wiercigroch

Zoom link <https://us02web.zoom.us/j/84863001500>

18:00 **Virtual Banquet**

Wednesday (16/12/2020)		31 speakers			
Zoom link		https://us02web.zoom.us/j/84789068108			
Time	Session	Chair	Speaker	Title	Zoom link
09:00	Plenary Lecture	<u>Weiqiu Chen</u> Zhejiang University, China	<u>Keith Davey</u> University of Manchester, UK	Scaled Dynamics	R. Darvizeh, M. Atar
09:40	Bernoulli	<u>Jerzy Warminski</u> Lublin University of Technology, Poland	<u>Ling Hong</u> Xi'an Jiaotong University, China	Fuzzy Noise-Induced Bifurcations by Fuzzy Cell Mapping with Adaptive Interpolation	X. Liu, J. Jiang
10:00			<u>Yusheng Zhou</u> NUAA, China	Nonholonomic Constraints and Motion Control of Wheeled Mobile Structures	Z. Wang
10:20			<u>Jian Yang</u> University of Nottingham Ningbo, China	Vibration Energy Flow Analysis of Smooth and Non-Smooth Nonlinear Dynamical Systems	
10:40			<u>Jan Rendl</u> University of West Bohemia, Czech Republic	Dynamics of Jeffcott Rotor Supported by Tilting-pad Journal Bearings	S. Dyk, L. Smolik, M. Hajzman
10:50			<u>Lijun Pei</u> Zhengzhou University, China	The short and long termed predictions of COVID-19 in different countries in the world	D. Weng, S. Wang
11:00			<u>Bugra Bayik</u> University of Aberdeen, UK	Distance Metric Learning for Vibration-Based Structural Damage Detection	E. Pavlovskaja, P. Omenzetter, D. van der A

11:10 Comfort Break					
Zoom link		https://us02web.zoom.us/j/84789068108			
11:20	Stevenson	<u>Ian Howard</u> Curtin University, Australia	<u>Antonio Chong</u> ESPOL, Ecuador	Lyapunov Exponents for Non-Smooth Systems via the Computational Suite ABESPOL	D. Costa, M. Wiercigroch
11:30			<u>James MacLean</u> University of Aberdeen, UK	Linear Integral Resonant Controller for Suppressing Stick-Slip of Underactuated Drill-String	V. Vaziri, S. S. Aphale
11:40			<u>Paul Mucchielli</u> University College Dublin, Ireland	Simulation of Pendulum Tuned Mass Damper under Random Excitation	B. Hazra, V. Pakrashi
11:50			<u>Evgenii Kozhevnikov</u> PNRPU, Russia	Influence of Pressure Waves on the Near Bottom Hole Formation Zone Permeability	V. Poplygin, M. Turbakov, E. Riabokon, M. Wiercigroch
12:00			<u>Weicheng Li</u> Yanshan University, China	Dynamics and Energy Saving Control of SRP Systems	V. Vaziri, S. S. Aphale, S. Dong, M. Wiercigroch
12:10			<u>Sze-Hong Teh</u> University of Nottingham Malaysia, Malaysia	Attractors of Rotating Pendulums	K-C. Woo
12:20			<u>Ali Hassanirad</u> University of Aberdeen, UK	Numerical modelling of dynamic crack propagation in fatigue experiment	V. Vaziri, M. Wiercigroch
12:30			<u>Dou Xie</u> Southwest Petroleum University, China	Nonlinear Dynamics of Lump Mass Model of Drill-String in Horizontal Well	Z. Huang, Y. Ma, V. Vaziri, M. Kapitaniak, M. Wiercigroch
12:40			<u>Alexey Voropay</u> Kharkov National Transport University, Ukraine	Active Control of Nonstationary Vibration in Plates Under Dynamic Loading	O. V. Menshykov, M. V. Menshykova

12:50 Comfort Break					
Zoom link		https://us02web.zoom.us/j/84789068108			
13:00	Bell	<u>Vahid Vaziri</u> University of Aberdeen, UK	<u>Maolin Liao</u> USTB, China	Numerical and Experimental Study of Bit-Rock Vibro-Impact System	M. Wiercigroch, J. Ing, J. Páez Chávez, Y. Liu, A.S.E. Chong, M. Sayah
13:20			<u>Joseph Páez Chávez</u> ESPOL, Ecuador	Numerical Continuation Approach to Study Piecewise-Smooth Systems with Delay	Z. Zhang, Y. Liu
13:40			<u>Mahashweta Patra</u> IIT Madras, India	Effect of Stochastic Switching Surface in Nonsmooth Systems	S. Gupta
14:00			<u>Pawel Platek</u> Military University of Technology, Poland	Mechanical Behaviour of 3D Printed Polyurethane Honeycomb Structures	K. Cieplak, M. Sarzynski, J. Janiszewski, J. Malachowski
14:20			<u>Jerzy Wojewoda</u> Lodz University of Technology, Lodz	High-Speed Video Recording Method to Track Double Pendulum Motion	
14:40			<u>Janko Slavič</u> University of Ljubljana, Slovenia	High-Speed Camera Analysis in Structural Dynamics and Vibration Fatigue	D. Gorjup, K. Zaletelj, L. Capponi, G. Rossi, M. Boltezar

15:00 **Comfort Break**

Zoom link <https://us02web.zoom.us/j/84789068108>

15:10 **Logie Baird**

Marcin Kapitaniak
University of Aberdeen, UK

Alicia Terrero Gonzalez
University of Aberdeen, UK

Is Wave Energy Untapped Potential?

I. Howard, P. Dunning, K. McKee, M. Wiercigroch

15:20

Siqi Li

Northeast Petroleum University, China

Application of Resonance Enhanced Drilling to Coring

V. Vaziri, M. Kapitaniak, J. M. Millett, M. Wiercigroch

15:30

Rimma Abdrashitova

Tyumen Industrial University, Russia

Application of Hydrogeological Data in Search for Oil Fields in Western Siberia

L.A. Kovyatkina, J.I. Salnikova, I.G. Sabanina

15:40

Gustavo Anjos

Federal University of Rio de Janeiro, Brazil

Fluid-Structure Interaction Analysis on Pipe Conveying Fluid Using Turbulent Stochastic Modeling

J.D.B. dos Santos, M. A. Savi

15:50

Evgenii Riabokon

PNRPU, Russia

Nonlinear Young's Modulus of New Red Sandstone

V. Poplygin, M. Turbakov, E. Kozhevnikov, D. Kobiakov, M. Guzev, M. Wiercigroch

16:00

Mohammad Khodadadi Dehkordi

University of Aberdeen, UK

Dynamics of Drill-String with Anti Stick-Slip Tool

A. Taraghi Osguei, E. Pavlovskaya, M. Wiercigroch

16:10

Vladimir Poplygin

PNRPU, Russia

Effect of Low Frequency and High Amplitude Fluctuations on Oil Production

E. Kozhevnikov, M. Turbakov, E. Riabokon, M. Wiercigroch

16:20

Ali Farhangfar

University of Calgary, Canada

Observer and Model Predictive Control Design for Suppression of Stick-Slip Oscillations

R. J. Shor

16:30 **Closing Lecture**

Ekaterina Pavlovskaya
University of Aberdeen, UK

Andrei Metrikine
TU Delft, Netherlands

Dynamics of Monopoles for Offshore Wind Turbines: Installation, Acoustics and Monitoring

17:40 **Closing Ceremony**