

15th INTERNATIONAL CONFERENCE **DYNAMICAL SYSTEMS THEORY AND APPLICATIONS**

ŁÓDŹ, DECEMBER 2-5, 2019



INFORMATION BOOKLET



FRAMEWORK PROGRAM

DSTA 2019 - FRAMEWORK PROGRAM

Sunday December 1, 2019	Monday December 2, 2019	Tuesday December 3, 2019	Wednesday December 4, 2019	Thursday December 5, 2019
9	8 ⁰⁰ -9 ⁰⁰	Sightseeing the city of Łódź		
	Registration			
	9 ⁰⁰ -9 ³⁵		Hanging posters	
10	9 ³⁵ -10 ¹⁵		POSTER SESSION	9 ⁰⁰ -9 ⁴⁰ Keynote lecture
	10 ¹⁵ -10 ³⁵			9 ⁴⁰ -9 ⁵⁰ Break
11	10 ³⁵ -12 ⁰⁵		Coffee break	9 ⁵⁰ -11 ²⁰
				S11 R9 R10 R11
				A B C D
12	12 ⁰⁵ -12 ²⁰		Coffee break	11 ²⁰ -11 ³⁰ Coffee break
13	12 ²⁰ -13 ⁰⁰		S4-1 S6-1 S7-1 S10-2	11 ³⁰ -13 ⁰⁰
				R12 R13 R14 R15
				A B C D

14	13 ⁰⁰ -15 ⁰⁰	Lunch	13 ⁰⁰ -15 ⁰⁰	Lunch	13 ⁰⁰ -15 ⁰⁰	Lunch	13 ⁰⁰ -13 ¹⁵	Closing ceremony
		14 ⁰⁰ -15 ⁰⁰ Scientific Committee Meeting					13 ¹⁵ -14 ³⁰	
15	15 ⁰⁰ -15 ⁴⁰	Keynote lecture	15 ⁰⁰ -15 ⁴⁰	Keynote lecture	15 ⁰⁰ -15 ⁴⁰		14 ³⁰ -	Laboratories of the Automation, Biomechanics and Mechatronics Department - short tour
	15 ⁴⁰ -15 ⁵⁰	Coffee break	15 ⁴⁰ -16 ⁰⁰	Photo session	15 ⁴⁵ -16 ⁰⁰	Coffee break		
16	15 ⁵⁰ -17 ²⁰	S2-2 S3-2 S5	16 ⁰⁰ -16 ¹⁵	Coffee break	16 ⁰⁰ -17 ¹⁵	S4-2 S6-2 S10-3		
		A B C		S1-1 S1-2 S1-3	16 ¹⁵ -17 ⁴⁵	A B C D		
17	17 ²⁰ -17 ³⁰	Coffee break	17 ²⁰ -17 ³⁰		17 ¹⁵ -17 ³⁰	Coffee break		
	17 ³⁰ -19 ⁰⁰	R1 S3-3 S9			17 ³⁰ -19 ⁰⁰	R5 R6 R7 R8		
18	18 ⁰⁰ -20 ⁰⁰	A B C	18 ³⁰	Bus to the Banquet		A B C D		
	18 ⁰⁰ -20 ⁰⁰ Welcome reception		19 ⁰⁰ -22 ⁰⁰	Banquet	19 ⁰⁰ -20 ³⁰	Supper		
	18 ⁰⁰ -20 ⁰⁰ Registration							

Legend

R - Regular session

S - Special session

Example:

S1-2 denotes sub-session 2 of the special session 1



Łódź, 2 December 2019

Prof. Jan Awrejcewicz
Chairman of
Organizing Committee
DSTA 2019

Mayor of the City of Łódź

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*Dear Sir,
Distinguished speakers and participants,
Dear guests and organizers,*

Thank you very much for your invitation to conference **Dynamical Systems – Theory and Applications**.

Unfortunately, due to the earlier presidential arrangements, I am not able to participate in this event. I am pleased with the fact that Łódź is a venue where the Conference is held.

City's slogan gives an evidence that Łódź is full of ideas, it is alive, creative and open for the newest solutions in dynamically developing fields.

One more time, accept my congratulations for the initiative. Let me wish all of you a very fruitful dialogue, a successful outcome of your deliberations and a memorable experience in Łódź.

I believe that the meetings and lectures will yield interesting ideas and conclusions that will stimulate you to take up further scientific challenges.

I would like to convey my warm regards to all participants of the conference, at the same time wishing you success in your studies as well as in your private life

Best regards,

Hanna ZDANOWSKA



KEYNOTE SPEAKERS



Elias C. Aifantis

Aristotle University of Thessaloniki (Greece)

Elias C. Aifantis is an Emeritus Professor of Mechanics at the Aristotle University of Thessaloniki/GR and Michigan Technological University/USA; formerly a Distinguished Research Professor at King Abdulaziz University/SA, Distinguished Visiting Expert at ITMO University/RU and Southwest Jiaotong University/China, as well as an Invited Director at Togliatti State University/RU. He has promoted highly interdisciplinary work in mechanics of materials by bringing into the field of solid mechanics ideas from diffusion theory, chemical reactions, and nonlinear physics. He has pioneered theories on dislocation patterning and material instabilities, gradient elasticity and plasticity, chemomechanics and nanomechanics. His current interest is on neuro-nano-electro-chemo-mechanics. He has published over 339 articles and received about 11,704 citations with 54 h-index (Scopus); 10,832 citations with 53 h-index (Web of Science); 17,860 citations with 66 h-index (Google Scholar). He is included in the ISI Web of knowledge list of the world's most highly cited authors in engineering.



Tarek Amer

**Department of Mathematics,
Tanta University (Egypt)**

Professor Amer received his PhD in Applied Mathematics (Theoretical Mechanics) from Tanta University (Egypt) and Magdeburg University (Germany) in 2001. Amer is a full Professor of Applied Mathematics (Theoretical Mechanics) in Egypt. His research interest is in Analytical mechanics, Gyro motion, Vibrational mechanics, Stability of dynamical systems and Bifurcations. His research has focused on two main topics. The first one is the rotational motion of a rigid body about a fixed point. He utilizes perturbation methods to obtain the asymptotic solutions of the governing system of motion. The used method allowed him to have insight investigation of the impact of system parameters on the system stability. The vibrational motion of rigid bodies and dynamical systems with multi-degrees of freedom had shed the interest of Amer. Currently, Amer is a reviewer for many international scientific journals and has a group of good researchers.



M. Aziz Alaoui

**Applied Mathematics Laboratory (LMAH),
Le Havre Normandie University (France)**

Full professor at the University of Le Havre Normandie, Director of Applied Mathematics Laboratory of Le Havre (LMAH), Head of the Dynamical Systems and bio-mathematics team, co-founder and co-Head of the ISCN (Complex Systems Institute of Normandie). Co-Editor-in-Chief of the international journal JNSA, associated Editor, past or ongoing, for 6 journals, including IJBC.

Prof. Aziz Aloui's original area of expertise is the theory of dynamical systems, chaos theory and bifurcations. It has gradually evolved, from the asymptotic analysis of ordinary differential equations (stability, bifurcations, chaos and strange attractors) with applications to electric oscillators, to that of Delay-DE and PDE (from the dynamical system point of view), with applications to life science, and then to complex systems and networks interaction (mainly, the study of coupled systems of ODEs or PDEs, modeling problems in neuroscience, in ecosystems - predator-prey or in epidemiology).



Balakumar Balachandran

**Department of Mechanical Engineering,
University of Maryland (USA)**

Dr. Balachandran received his B. Tech (Naval Architecture) from the Indian Institute of Technology, Madras, India, M.S. (Aerospace Engineering) from Virginia Tech, Blacksburg, VA and Ph.D. (Engineering Mechanics) from Virginia Tech. Currently, he is a Minta Martin Professor of Engineering at the University of Maryland, where he has been since 1993. His research

interests include nonlinear phenomena, dynamics and vibrations, and control. The publications that he has authored/co-authored include a Wiley textbook entitled "Applied Nonlinear Dynamics: Analytical, Computational, and Experimental Methods" (1995, 2006), a third edition of a textbook entitled "Vibrations" (2019) by Cambridge University Press, and a co-edited Springer book entitled "Delay Differential Equations: Recent Advances and New Directions" (2009). He is a Contributing Editor of the International Journal of Non-Linear Mechanics and the Editor of the ASME Journal of Computational and Nonlinear Dynamics. He is a Fellow of ASME and AIAA.



Yuri V. Mikhlin

**Applied Mathematics Department,
National Technical University "Kharkiv Polytechnic
Institute" (Ukraine)**

Prof. Mikhlin's is an expert in the field of Nonlinear Dynamics and Applied Mathematics. His research focuses mainly on: Theory of nonlinear normal vibration modes; Stability of nonlinear vibrations; Applications of nonlinear dynamics. Y. Mikhlin is a member of Editorial Boards of: Nonlinear Dynamics, Int. J. of Non-Linear Mechanics, J. of Mechanical Engineering Science. He was the Organizer and Chair of Mini-Symposia at the 9th ENOC, 8th ENOC, 7th ENOC and 6th ENOC; Organizer and Chairman of the Sci. Committee of Int. Conferences on Nonlinear Dynamics at the National Technical University, Kharkov, 2016, 2013, 2010, 2007, 2004; Member of Scientific Committees of numerous Int. Conferences; Visitor at universities in Austria, Brasil, France, Israel, Italy, Poland, Serbia, UK, USA etc. He authored over 130 papers published in refereed journals, over 130 communications to scientific meetings and 7 books.



Miguel A.F. Sanjuán

**Department of Physics,
King Juan Carlos University (Spain)**

Professor of Physics at the Rey Juan Carlos University. He is the Head of the Research Group in Nonlinear Dynamics, Chaos, and Complex Systems. Member of the Editorial Board of several international journals. He has imparted numerous invited lectures in Spain, Europe, USA, Canada, China, Japan, India, Australia, Latin America and Africa. Visiting Research Associate at the University of Tokyo, at the Beijing Jiaotong University, and at the University of Maryland, where he has been Fulbright Visiting Research Scholar. He is an advisory member of the Australian Research Council. He is Honorary Professor of Sichuan University of Science and Technology (Zigong, China), and Honorary Professor of Huaqiao University (Xiamen, China). Corresponding Academician of the Spanish Royal Academy of Sciences, Foreign Member of the Lithuanian Academy of Sciences, and Member of the Academia Europaea-The Academy of Europe.

DETAILED PROGRAM

1. Monday, December 2, 2019

Registration of participants, 8:00 - 9:00, DSTA 2019 Office
Opening ceremony, 9:00 - 9:45, assembly hall

Keynote lecture, 9:45 - 10:25, assembly hall

Balakumar Balachandran *Data-driven nonlinear dynamics*

Coffee break, 10:25 - 10:45

Session S2-1, 10:45 - 12:15, room A

1.	R.T. Rocha, R.H. Junior, W.B. Lenz, M.A. Ribeiro, A.M. Tusset, J.M. Balthazar, E. Jarzebowska	<i>Investigation of energy harvesting in a 2DOFs portal frame by means of the positioning of the piezoelectric material</i>	BIF 066
2.	J.F. Silva Trentin, S. da Silva, J.M. de Souza Ribeiro, H. Schaub	<i>Nonlinear control of an inverted pendulum actuated by two reaction wheels</i>	CON 022
3.	J. Zapoměl, P. Ferfecki, J. Kozánek	<i>Effect of the rotor support elements lubricated by magnetic fluids on chaotic and regular vibration of rotors during rubbing</i>	CON 029
4.	W.B. Lenz, M.A. Ribeiro, A.M. Tusset, J.M. Balthazar, E. Jarzebowska	<i>Slosh analyzes of a full vehicle-tank model with SDRE control and a hydraulic damper</i>	CON 113
5.	G. de Freitas Fonseca, A. Nabarrete	<i>Finite element analysis of magnetorheological fluid embedded on journal bearings</i>	CON 336
6.	R. Teloli, S. da Silva, G. Chevallier	<i>Parameters estimation by harmonic probing of hysteresis models of bolted jointed</i>	MAT 165

1. Monday, December 2, 2019

Session S3-1, 10:45 - 12:15, room B

1.	A. Palermo, F. Zeighami, A. Vratsikidis, Z. Cheng, D. Pitilakis, A. Marzani	<i>Design of a medium-scale test for the assessment of a resonant seismic barrier within the ReWarD Project</i>	CON 249
2.	R. Santoro, G. Failla	<i>Effect of uncertainty in dynamic response of multi-cracked beams</i>	CON 129
3.	A. Mayou, V. Denoël	<i>Perturbation analysis of a Multi- Degree-Of-Freedom system equipped with only one tuned mass damper</i>	MAT 205
4.	G. Muscolino, F. Genovese, T. Alderucci	<i>Response sensitivity of damper- connected adjacent structural systems subjected to fully non-stationary random excitations</i>	CON 024
5.	D. Neves, K. Sousa, A. Fabro	<i>Experimental investigation of wave propagation in light weight structures undergoing flexural vibration</i>	CON 288

Session S12, 10:45 - 12:15, room C

1.	A. Waszczuk-Młyńska, S. Radkowski	<i>Analytical model of a circular membrane with damage in the form of scratches</i>	ENG 079
2.	G.M. Szymański, P. Krawiec	<i>Testing and analysis of vibrations of a tension transmission with a thermally sealed belt</i>	EXP 171
3.	A. Zippo, F. Pellicano, G. Iariccio	<i>Synchronicity phenomenon of circular cylindrical shell under random excitation</i>	EXP 343
4.	P. Komorski, G.M. Szymanski, T. Nowakowski, M. Orczyk	<i>Application of the wheel-flat detection algorithm using advanced acoustic signal analysis</i>	MAT 075
5.	J.C. Santos, M.V.G. de Moraes, E.U.L. Palechor, R. S. Y. R. C. Silva	<i>Damage detection in beams using an additional roving mass based on the natural frequency shifting</i>	VIB 243
6.	H. Ibrahim, D. Ezzeddine, R. Sultan	<i>Complex patterned precipitation dynamics in toroidal reactors with two diffusion sources</i>	BIF 256

Coffee break, 12:15 - 12:30

1. Monday, December 2, 2019

Keynote lecture, 12:30 - 13:10, assembly hall

Yuri V. Mikhlin

*Nonlinear normal vibration modes
and associated problems*

Lunch, 13:10 - 15:00

Meeting of the Scientific Committee of DSTA 2019, 14:10 - 15:00

Keynote lecture, 15:00 - 15:40, assembly hall

Tarek Amer

*New trends for the motion of a rigid
body and dynamical systems*

Coffee break, 15:40 - 15:50

Session S2-2, 15:50 - 17:20, room A

1.	E. Jarzębowska, M. Kłak	<i>Quaternion based free-floating space manipulator dynamics modeling using the dynamically equivalent manipulator approach</i>	CON 037
2.	V.-F. Duma, E. Jarzębowska, M. Kłak	<i>Optomechatronic disk choppers with generalized window profiles: Ascertainment and multi-parameter analysis of non-linear transmission functions</i>	MAT 010
3..	A. Urbaś, K. Augustynek	<i>Evaluation of the crane's actuators strength based on the results obtained from dynamics model</i>	MAT 101
4..	K. Augustynek, A. Urbaś	<i>The dynamics analysis of a spatial linkage with flexible links and imperfect revolute joints</i>	MAT 103
5.	E. Jarzębowska, A. Urbaś, K. Augustynek	<i>Dynamics and vibration analysis of a spatial linkage model with flexible links and joint friction subjected to position and velocity motion constraints</i>	NUM 036
6.	M. Jakubowski	<i>Consideration about H-type rotor with the Magnus effect</i>	OPT 184

1. Monday, December 2, 2019

Session S3-2, 15:50 - 17:20, room B

		<i>Advances in modeling controlled structures.</i>	
1.	A. Pirrotta	(Lecture invited by the special session organizers - 25 min presentation)	CON 098
2.	L.A. Zuppa, J. Awrejcewicz, N. Losyeva, V. Puzyrov, N. Savchenko	<i>The use of the dynamic vibration absorber for energy harvesting</i>	VIB 339
3.	A. Burlon, M. Di Paola, G. Failla	<i>Fractional nonlinear viscoelastic rubbers for base isolated systems</i>	MAT 163
4.	K. Kęcik, R. Rusinek	<i>Improving functionality of absorber/harvester system by a smart adaptive suspension</i>	STA 077

Session S5, 15:50 - 17:20, room C

1.	M. Kovaleva, L. Manevitch	<i>Interchain energy exchange in the DNA coarse-grained model</i>	ASY 211
2.	V. Smirnov, L. Manevitch	<i>Strong mode coupling in vibrations of single-walled carbon nanotubes</i>	ASY 213
3.	I.V. Andrianov, J. Awrejcewicz, W.T. van Horssen	<i>Correct nonlinear dynamic equation of buckled beam</i>	ASY 303
4.	K. Zimmermann, I. Zeidis, V. Lysenko, S. Gast, L. Günther, F. Schale, M. Rohn	<i>Mathematical model and a prototype of a linear motor controlled by a periodic magnetic field</i>	ENG 021
5.	A. Mubarak, D. Prikazchikov	<i>Explicit model for surface waves on an elastic half-space coated by a thin vertically inhomogeneous layer</i>	VIB 133
6.	M. Alkinidri, J. Kaplunov, L. Prikazchikova	<i>Two-mode long-wave low-frequency approximations for anti-plane shear deformation of a high-contrast asymmetric laminate</i>	VIB 134

Coffee break, 17:20 - 17:30

1. Monday, December 2, 2019

Session R1, 17:30 - 19:00, room A

1.	H. True	<i>Bifurcations and transitions in railway vehicle dynamics</i>	BIF 223
2.	M.-T. Nguyen-Thai, P. Wulff, N. Gräbner, U. von Wagner	<i>On the influence of external stochastic excitation on linear oscillators with subcritical self-excitation applied to brake squeal</i>	ENG 338
3.	J. Kozánek, J. Zapoměl	<i>Some special properties of dynamical system caused by nonlinear eigenvalue problem</i>	LIF 052
4.	B. Tojtovska, P. Ribarski	<i>Stability of coupled systems of stochastic Cohen-Grossberg neural networks with time delays, impulses and Markovian switching</i>	NUM 203
5.	A.T. Savadkoohi, C.-H. Lamarque, C. Goosaert	<i>Control of tremors of human's arm by a passive nonlinear absorber</i>	STA 141
6.	I. Adamiec-Wójcik, L. Brzozowska, S. Wojciech	<i>Influence of bending and torsional flexibility on displacements and loading of risers</i>	VIB 204

Session S3-3B, 17:30 - 19:00, room B

1.	A. Burlon	<i>Vibration mitigation of coupled bending-torsion beams via tuned mass dampers</i>	VIB 177
2.	M. Ghassempour, G. Failla, F. Arena, G. Malara	<i>On the use of tuned mass dampers for vibration mitigation in offshore wind turbines</i>	VIB 114
3.	G. Failla, G. Alotta	<i>Novel concepts of resonators for beam structures</i>	VIB 057
4.	K. Kęcik	<i>Theoretical and experimental investigations of a magnetic levitation system for energy recovery</i>	ENG 078

1. Monday, December 2, 2019

Session S9, 17:30 - 19:00, room C

1.	K. R. Jayaprakash, Yuli Starosvetsky	<i>Analytical and numerical study of piecewise linear Mathieu equation with non-zero offset</i>	STA 090
2.	Leonid Manevitch	<i>New development of non-stationary resonant dynamics</i>	ASY 212
3.	Aurélien Grolet, Zein Alabidin Shami, Sadaf Arabi, Olivier Thomas	<i>Experimental nonlinear localisation in a system of two coupled beams</i>	EXP 097
4.	Margarita Kovaleva, Leonid Manevitch	<i>Non-conventional synchronization in the chains of weakly coupled nonlinear autogenerators</i>	ASY 208
5.	Yuri V. Mikhlin, Nataliia S. Goloskubova, Tatyana V. Shmatko	<i>Stability of steady states with regular or chaotic behaviour in time</i>	STA 237
6.	Valery Pilipchuk	<i>On mode formation and transitions in self-sustained friction induced vibrations</i>	VIB 143

Supper, 19:00 - 20:30

Excursion



The sightseeing tour will include the **EC1** complex, which is home to the innovative Science & Technology Museum. It is hard to believe that just a few years ago EC1 was a disused and ruined area. Its transformation, and the entire urban renewal project is nothing short of remarkable. The tour will also encompass the magnificent **Manufaktura** complex. It was once a series of factories – all producing various textiles – that were constructed in the second part of the 19th century. Although nowadays it is mainly a shopping centre, it also houses numerous museums such as the **Museum of the Factory**. This small but perfectly formed museum offers a complete history of Manufaktura, complete with 4 working looms, a steam engine model, various dioramas and even a tiny cinema showing black and white mini-documentaries of factory scenes. During the tour, we will also visit one of the most beautiful buildings of our city, the **Izrael Poznański's Palace**.

2. Tuesday, December 3, 2019

8:00 - 13:00 Sightseeing the city of Łódź

Lunch, 13:00 - 15:00

Keynote lecture, 15:00 - 15:40, assembly hall

Miguel A.F. Sanjuan

Unpredictability in physical systems: Basin entropy and Wada basins

Photo session

Coffee break, 16:00 - 16:15

Session S1-1, 16:15 – 17:45, room A

1.	A. Bountis, Y. Kominis, J. Shena, V. Kovaniis	<i>Limit cycles and resonances in asymmetric laser dimers: New oscillatory phenomena in photonic arrays</i>	BIF 206
2.	V. Nekorkin	<i>Cloning of chimera states in a multiplex network of relaxation oscillators</i>	BIF 081
3.	A. Tamaševičius, E. Adomaitienė, S. Bumelienė	<i>Local control of an array of globally coupled oscillators</i>	CON 072
4.	P. Medina, A. Valdivia	<i>Probabilistic paths dynamics over weighted complex networks</i>	ASY 040
5.	E. Del Rio, S. Elaskar	<i>An experimental investigation on noisy intermittency</i>	BIF 252
6.	O. Maslennikov, M. Pugavko, V. Nekorkin	<i>Dynamics of a network of map-based neurons in problems of reservoir computing</i>	BIF 076

2. Tuesday, December 3, 2019

Session S1-2, 16:15 - 17:45, room B

1.	M. Barulina, A. Golikov, S. Galkina	<i>Dynamics of sensing element of micro- and nanoelectromechanical sensors as anisotropic size-dependent plate</i>	MAT 291
2.	S.K. Joseph	<i>Quantum-gravity in a dynamical system perspective</i>	MAT 235
3.	V.-F. Duma	<i>Exact non-linear scan patterns of laser scanners with rotational Risley prisms: mathematical analysis, simulations, and experiments</i>	MAT 009
4.	J. Fernando Mendes	<i>Structural stability of interaction networks against negative external fields</i>	LIF 219
5.	J. Lacerda, C. Freitas, E. Macau	<i>Topologies that favor synchronization in energy transmission networks</i>	MAT 043
6.	D. Simpson, V. Avrutin, S. Banerjee	<i>Nordmark map and the problem of large-amplitude chaos in an impact oscillator</i>	NON 119
7.	R.J. Escalante-González, E. Campos--Cantón	<i>Generation of hidden multiscroll attractors based on piecewise linear systems</i>	BIF 126

Session S1-3, 16:15 - 17:45, room C

1.	A. Jenkins	<i>From dissipation-induced instability to the dynamics of engines</i>	STA 178
2.	Z. Zhusubaliyev, V. Avrutin	<i>Border-collisions in a periodically forced self-oscillatory piecewise smooth system with a high number of switching manifolds</i>	NON 123
3.	L.Y. Chew	<i>Kuramoto Oscillators under local unidirectional coupling: the phenomenon of bunching and anti- bunching</i>	STA 051
4.	W. Sawczuk, G.M. Szymański	<i>Experimental analysis of dynamic susceptibility of selected elements of the railway braking system</i>	NUM 132
5.	V. Avrutin, Z. Zhusubaliyev	<i>Nested closed invariant curves in the 2D piecewise linear normal form</i>	NON 050
6.	J.A. Valdivia, J. Rogan, P. Medina, M. Kiwi, F. Torres	<i>Deciphering the transport in complex systems</i>	NON 220

Bus to the Banquet 18:30 / Banquet 19:00-22:00

3. Wednesday, December 4, 2019

Hanging posters 8:30-9:00

Poster Session, 9:00 - 10:00

Coffee break, 10:00 - 10:15

Session R2, 10:15 - 11:30, room A

1.	M. Mohamed, T. Amer, M. Abohamer	<i>On the vibrational analysis for the motion of a rotating cylinder</i>	ASY 015
2.	M. Mohamed, T. Amer, Y. Gamiel	<i>On the spinning motion of a disc under the influence a gyrostatic moment</i>	ASY 016
3.	J. Awrejcewicz, R. Starosta, G. Sypniewska-Kamińska	<i>Vibration of nonlinear lumped systems with serially connected elastic element</i>	ASY 284
4.	G. Sypniewska-Kamińska, J. Awrejcewicz, H. Kamiński, R. Salamon	<i>Resonance study of spring pendulum based on MSM solutions with polynomial approximation</i>	ASY 292
5.	P. Kambali, T. Mintz, K. Mora, E. Buks, O. Gottlieb	<i>The influence of asymmetric electrodes on the non-planar dynamics of a parametrically excited nonlinear microbeam</i>	ASY 341

Session R3, 10:15 - 11:30, room B

1.	A. Jaskot, B. Posiadała, S. Śpiewak	<i>Motion cases analysis of the mobile platform with four-wheel drive under slippage conditions</i>	EXP 242
2.	L. Dzyubak, O. Dzyubak, J. Awrejcewicz	<i>Condition evaluation of components of multi-parametric space determining the evolution of carcinogenesis in biological systems</i>	LIF 082
3.	P. Weber	<i>Dynamics of chains as a tool to study thermomechanical properties of proteins</i>	LIF 332
4.	R. Murugesan, V. Krishnan, A. Muralidharan, S. Faruque Ali	<i>Investigation of piezoelectric and multiple electromagnetic hybrid vibration energy harvester</i>	VIB 172
5.	A. Muralidharan, S. Faruque Ali	<i>System size resonance in a 1-D array of noisy bistable piezoelectric harvesters</i>	VIB 175

3. Wednesday, December 4, 2019

Session R4, 10:15 - 11:30, room C

1.	C. Arguez, P. Giesl, S.F. Hafstein	<i>Critical tolerance evolution: Classification of the chain-recurrent set</i>	MAT 004
2.	I. Kecskés, Á. Odry, P. Odry	<i>Uncertainties in the movement and measurement of a hexapod robot</i>	MAT 063
3.	T. Amer, M. Mohamed, A. Arab	<i>Asymptotic analysis of submerged spring pendulum motion in liquid</i>	MAT 169
4.	A.M. Lopes, J.A. Tenreiro Machado	<i>Fractional dynamics and power law behaviour in soccer leagues</i>	MAT 247
5.	Á. Zsiros, J. Lelkes, B. Dezső Bak, T. Kalmár-Nagy	<i>Energy spectrum of inhomogeneous rod with elastic and viscous boundary conditions</i>	MAT 268

Session S10-1, 10:15 - 11:30, room D

1.	W. Paszkowiak, T. Bartkowiak	<i>Dynamics of logistic train</i>	ENG 068
2.	A. Skurjat	<i>The influence of lateral swaying on the trajectory of articulated rigid body vehicles</i>	CON 115
3.	L. Prochowski, M. Ziubiński, P. Sz wajkowski, T. Pusty, M. Gidlewski	<i>Experimental and simulation examination of the impact of the control model on the motion of a motorcar with a trailer in a critical situation</i>	CON 180
4.	M. Gidlewski, L. Jemioł, D. Żardecki	<i>Influence of control system parameters and it's disturbances on lane change process</i>	CON 116
5.	A. Skurjat, A. Kosiara	<i>A system for improving directional stability involving individual braking of 1, 2, or 3 wheels of articulated rigid body vehicles</i>	CON 150

Coffee break, 11:30 - 11:45

3. Wednesday, December 4, 2019

Session S4-1, 11:45 - 13:00, room A

1.	R. Lima, R. Sampaio, P. Hagedorn	<i>On the decoupling of electromechanical systems</i>	MAT 334
2.	N. Albanbay, B. Medetov, M.A. Zaks	<i>Distribution of lifetimes for transient bursting states in coupled noisy excitable systems</i>	BIF 260
3.	F. Verhulst	<i>Systems with fast limit cycles and slow interaction</i>	ASY 230
4.	J. Latański, J. Warmiński	<i>Primary and combined multi-frequency parametric resonances of a rotating thin-walled composite beam under harmonic base excitation</i>	STA 045
5.	N.-L. Dang, S.-Y. Lee, J.-T. Kim	<i>Electromechanical impedance tomography for strand breakage localization in multi-strands anchorage</i>	VIB 053

Session S6-1, 11:45 - 13:00, room B

1.	M. Scharff	<i>Bio-Inspired tactile sensing: distinction of the overall object contour and macroscopic surface features</i>	LIF 161
2.	K. Koter, Ł. Frącczak, K. Chojnacka, K. Jabłoński, S. Zarychta, L. Podsędkowski	<i>Snake robot based on McKibben pneumatic artificial muscles</i>	EXP 039
3.	C. Behn, D. Baldeweg, C. Will	<i>Bending vibration systems as tactile sensors for contact point detection using natural frequencies</i>	LIF 189
4.	W. Wojnicz, B. Zagrodny, M. Ludwicki, J. Mrozowski, J. Awrejcewicz, E. Wittbrodt	<i>Multibody models for gait analysis</i>	LIF 142
5.	L. Zajcsuk, G. Habib, A.M. Zelei	<i>Antropomorphic parameters of a nonlinear dynamic model of self sustained hoppin</i>	LIF 167

3. Wednesday, December 4, 2019

Session S7-1, 11:45 - 13:00, room C

1. M. Makkar, S. Jain	<i>Bond graph modeling and simulation of left ventricle of human heart</i>	LIF 350
2. M.Z. Dosaev, V.A. Samsonov, S.-S. Hwang	<i>Friction coefficient estimating in problem of planar motion of a friction-powered robot</i>	MAT 035
3. M. Dosaev	<i>On features of the contact model of an elastic brake shoe with a wheel</i>	MAT 034
4. C.-C. Hsu, S.-C. Chen, S.-S. Hwang	<i>Study on the properties of the microcellular injection molded polyolefin/beta cyclodextrin composites</i>	EXP 221
5. M. Bocian, K. Jamroziak, M. Kulisiewicz	<i>Dynamic identification method for determining the plastic properties of the material used as a front layer of impact shields</i>	CON 155

Session S10-2, 11:45 - 13:00, room D

1. A. Burghardt, P. Gierlak, W. Skwarek	<i>Modeling of dynamics of cooperating wheeled mobile robots</i>	MAT 102
2. P. Dudziński, J. Chołodowski	<i>Modeling and experimental tests on motion resistance of double-flanged rollers of rubber track systems due to sliding friction between the rollers and guide lugs of rubber tracks</i>	EXP 226
3. W. Grzegozek, K. Weigel-Milleret	<i>Stability of three wheeled narrow vehicle</i>	EXP 153
4. J. Chołodowski, P. Dudziński	<i>On the influence of rubber tracks vibrations upon energy losses in crawler vehicles drive systems</i>	EXP 073
5. Ł. Kłoda, S. Lenci, J. Warmiński	<i>Nonlinear dynamics of a planar beam-spring system: a 2:1 internal transversal-axial resonance</i>	VIB 048

Lunch, 13:00 - 15:00

3. Wednesday, December 4, 2019

Keynote lecture, 15:00 - 15:45, assembly hall

M. Aziz Alaoui

Synchronization of complex interaction networks of reaction-diffusion systems. Application in neuroscience

Coffee break, 15:45 - 16:00

Session S4-2, 16:00 - 17:15, room A

1.	P. Gierlak, A. Burghardt, K. Kurc, D. Szybicki	<i>Analysis of parametric vibration of a roller coaster flexible wheel</i>	VIB 104
2.	J. Warmiński	<i>Dynamics and control of self-excited system under parametric or external excitations and time delay</i>	STA 047
3.	S. Doneva, J. Warmiński, E. Manoach	<i>Dynamics of circular plates under selected heat loadings: Finite element and analytical models</i>	STA 110
4.	F. Dohnal, W. Hörtornagel, M. Zamojski	<i>Numerical and analytical investigation of chatter suppression by parametric excitation</i>	STA 087

Session S6-2, 16:00 - 17:15, room B

1.	L. Bencsik, D. Nagy, A. Zelei, T. Insperger	<i>The mechanical background of devices for balancing skill development</i>	LIF 192
2.	A. Hedrih	<i>Synchronisation of biological oscillators in reproductive biology</i>	LIF 200
3.	T. Walczak, G. Sypniewska-Kamińska, R. Ferduła, A. Pogorzała	<i>Identification of muscle forces of upper limbs based on the registration of motion capture system</i>	LIF 201
4.	A. Zawadzki, T. Mirosław, J. Deda, Z. Żebrowski	<i>Structure and control strategies of exoskeletons for fatigue limitation of a healthy man</i>	MTR 121

3. Wednesday, December 4, 2019

Session S7-2, 16:00 - 17:15, room C

1.	O. Cherkasov, N. Smirnova, S. Huang	<i>Thrust programming for the range maximization and modified brachistochrone problem</i>	OPT 018
2.	Y. Selyutskiy, R. Garziera, L. Collini	<i>On dynamics of a rigid block on visco-elastic foundation</i>	VIB 147
3.	Y. Selyutskiy, A. Holub, C.-H. Lin	<i>Piezoaeroelastic system based on a double aerodynamic pendulum</i>	STA 093
4.	P. Gamorski	<i>Quasistatic frictional contact problem governed by a variational–hemivariational inequality</i>	MAT 046
5.	S. Zermout, F. Mokhtari, F. Haddad, A. Merah, I. Lasloudji	<i>Numerical analysis of phase change during solidification</i>	NUM 293

Session S10-3, 16:00 - 17:15, room D

1.	H.Z. Horváth, D. Takács	<i>Stability of snaking trailers</i>	NON 265
2.	T. Mirosław	<i>Model of a pneumatic tire and road cooperation based on 3-state flexible elements</i>	NON 122
3.	D. Żardecki	<i>Non-smooth nonlinear model of suspension based on piecewise linear $luz(\dots)$ and $tar(\dots)$ projections</i>	NON 112
4.	A. Dębowski, D. Żardecki	<i>Modelling of torsional vibrations in a motorcycle steering system</i>	VIB 080
5.	A. Harlecki, A. Przemyk, S. Tengler	<i>Application of homogenous transformations in the dynamic analysis of truck trailers</i>	MAT 162

Coffee break, 17:15 - 17:30

3. Wednesday, December 4, 2019

Session R5, 17:30 - 19:00, room A

1.	P. Benner, A. Seidel-Morgenstern, A. Zuyev	<i>Analysis of switching strategies for the optimization of periodic chemical reactions with controlled flow-rate</i>	CON 027
2.	L.A. Ocampo, F. Angulo, D. Angulo-Garcia	<i>Lyapunov function-based control of a DC/DC buck converter using Hybrid Systems formalism</i>	CON 038
3.	J. Przybylski, K. Kuliński	<i>Stability and vibration of a two-member cantilever column with an integrated PZT rod</i>	CON 056
4.	P. Schorr, V. Böhm, L. Zentner, K. Zimmermann	<i>Investigation of a tensegrity structure with multiple equilibrium configurations as jumping motion system</i>	CON 083
5.	A.S. Saeed, M.A. AL-Shudeifat	<i>A comparison of the common types of nonlinear energy sinks</i>	CON 290
6.	A.S. Saeed, M.A. AL-Shudeifat	<i>A study on the coefficient of restitution effect on single-sided vibro-impact nonlinear energy sink</i>	VIB 289

Session R6, 17:30 - 19:00, room B

1.	P. Latosiński, A. Bartoszewicz	<i>Discrete-time model reference sliding mode control using an exponential reaching law</i>	CON 095
2.	E.R. Carrillo Li, P. Schorr, T. Kaufhold, J.A. Rodríguez Hernández, L. Zentner, K. Zimmermann, V. Böhm	<i>Kinematic analysis of the rolling locomotion of mobile robots based on tensegrity structures with spatially curved compressed components</i>	CON 152
3.	J. Jackiewicz	<i>Controlled dynamical system for lowering vibrations of longitudinal forces in railway couplers of multiple-unit railway trains</i>	CON 166
4.	Y. Lin, H. Yabuno, X. Liu, Y. Yamamoto, S. Matsumoto	<i>Experimental validity of highly sensitive atomic force microscope (AFM)</i>	CON 236
5.	M. Machado, A. Fabro, B. Barbosa de Moura	<i>Flexural waves propagation in piezoelectric metamaterial beam</i>	CON 278
6.	S. Kim, H. Yabuno, K. Mitaka	<i>An experimental observation of the spatial motions of strings in resonance points under the planar excitation</i>	EXP 020

3. Wednesday, December 4, 2019

Session R7, 17:30 - 19:00, room C

1.	A. Rysak, M. Gregorczyk	<i>Study of the Duffing van der Pol system dynamics using RQA measures</i>	BIF 149
2.	W. Fiebig	<i>The use of mechanical resonance for the reduction of torque pulsation and energy demand in machines with crankshaft systems</i>	ENG 094
3.	T. Kaczorek	<i>Application of the Drazin inverse of matrices to analysis of the pointwise completeness and the pointwise degeneracy of the descriptor linear systems</i>	ENG 120
4.	F. Klimenda, J. Soukup, B. Skočilasová, J. Skočilas, L. Rychlíková	<i>Convergence of dual infinity series</i>	ENG 193
5.	Y. Kasai, H. Yabuno, T. Ishine, Y. Yamamoto, S. Matsumoto	<i>Ultrasensitive mass sensing using a single cantilever coupled with a computational cantilever</i>	ENG 227
6.	R. Walentyński, D. Słota, M. Szczyciel	<i>Vibration Busters – an interdisciplinary approach to education of dynamical systems</i>	ENG 321

Session R8, 17:30 - 19:00, room D

1.	R. Siqueira, O. Altun, P. Gembarski, R. Lachmayer	<i>A hydraulic delta-robot-based test bench for validation of smart products</i>	EXP 026
2.	B. Gunn, S. Theodossiades, S.J. Rothberg	<i>A rotational energy harvester for propulsion systems: design and experimental validation</i>	EXP 088
3.	K.J. Kaliński, M. Galewski, M. Mazur, N. Morawska	<i>Optimization of the spindle speed during milling of large-sized structures with the use of technique of Experiment-Aided Virtual Prototyping</i>	EXP 215
4.	Y.M. Soares Fernandes, M. Rodrigues Machado, M. Dutkiewicz	<i>Structural dynamic response of coupling between transmission lines and tower under random excitation</i>	EXP 279
5.	E. Manoach, S. Doneva, J. Warminski	<i>Coupled, large amplitude vibration of bimaterial beams</i>	VIB 074
6.	O. Szlachetka, J. Jaworski, M. Chalecki	<i>Free vibration frequencies of simply supported bars with variable cross section</i>	VIB 086

Supper, 19:00 - 20:30

4. Thursday, December 5, 2019

Keynote lecture, 9:00 - 9:40, assembly hall

Elias C. Aifantis

Gradient & fractional elasticity models

Break, 9:40 - 9:50

Session S11, 9:50 - 11:20, room A

1.	E.-H. Dulf, C.-I. Muresan, D.D. Timis	<i>Adaptive fractional order control of a quadrotor</i>	CON 111
2.	E.-H. Dulf, C.-M. Ionescu, C.-I. Muresan	<i>Risk related prediction for recurrent stroke and post-stroke epilepsy using Fractional Fourier Transform analysis of EEG signals</i>	LIF 109
3.	J.M. de Carvalho, C. Pinto	<i>Role of the immune system in AIDS-defining malignancies</i>	LIF 158
4.	I. Birs, I. Nascu, E. Dulf, C. Muresan	<i>Comparison of various fractional order controllers on a poorly damped system</i>	MAT 067
5.	M. Wyrwas, D. Mozyrska, P. Oziabło	<i>Asymptotic stability of fractional variable-order discrete-time equations with terms of convolution operators</i>	STA 069
6.	O. Brandibur, E. Kaslik, D. Mozyrska, M. Wyrwas	<i>A Rulkov neuronal model with Caputo fractional variable-order differences of convolution type</i>	STA 185

Session R9, 9:50 - 11:20, room B

1.	J. Kabziński	<i>Adaptive, nonlinear synchronization of a Duffing oscillator with unknown parameters</i>	CON 263
2.	J. Awrejcewicz, D. Bilichenko, A.K. Cheib, N. Losyeva, V. Puzyrov	<i>Estimation of the domain of attraction for a nonlinear mechanical system</i>	STA 340
3.	B. Kalita, S.K. Dwivedy	<i>Nonlinear study of a pneumatic artificial muscle (PAM) under superharmonic resonance condition using method of multiple scales</i>	STA 345
4.	L. Smolík, P. Polach, M. Hajžman	<i>Dynamics of a turbocharger rotor supported on full-oating ringbearings with shallow axial grooves of uncertain dimensions</i>	VIB 138

4. Thursday, December 5, 2019

Session R10, 9:50 - 11:20, room C

1.	E. Trullols, I. Massana, J. d'Arc Prat, J. Antonijuan, G. Olivar	<i>Nonlinear tourist flows in Barcelona</i>	ENG 125
2.	A. Rajan, S. Krishnapillai	<i>Parametric identification of nonlinear structures using Particle Swarm Optimization based on power flow balance criteria</i>	NUM 173
3.	F. Klimenda, J. Soukup, L. Rychlíková	<i>Impact wave propagation in a thin elastic isotropic plate</i>	NUM 190
4.	J. Soukup, M. Zmindak, P. Novak, F. Klimenda, M. Kaco, L. Rychlikova	<i>Dynamic analysis and damage of composite layered plates reinforced by unidirectional fibers subjected low velocity impact</i>	NUM 195
5.	A. Rajan, S. Krishnapillai	<i>Identification of nonlinear joint interface parameters using instantaneous power flow balance approach</i>	NUM 259
6.	M. Neves, D. Tcherniak, H. Policarpo, N. Maia	<i>On the use of transmissibility to estimate vibro-acoustic responses in operational conditions</i>	NUM 335

Session R11, 9:50 - 11:20, room D

1.	P. Fritzkowski, R. Starosta, J. Awrejcewicz	<i>Analytical approach to vibro-impact dynamics of two coupled oscillators</i>	ASY 327
2.	F. Sarbinowski, R. Starosta	<i>Optimization of geometry of flow energy harvester</i>	OPT 092
3.	K.R. (Stevanovic) Hedrih	<i>Rolling heavy ball over the surface with arbitrary shape in real R^3 space</i>	STA 012
4.	P. Beda	<i>Dynamical systems and stability in fractional solid mechanics</i>	STA 085
5.	Y. Selyutskiy	<i>Alternation of stability character in systems with positional non-conservative forces</i>	STA 117
6.	K. Yamashita, N. Nishiyama, K. Katsura, H. Yabuno	<i>Nonlinear stability of a spring-supported pipe conveying fluid</i>	STA 127

4. Thursday, December 5, 2019

Coffee break, 11:20 - 11:30

Session R12, 11:30 - 13:00, room A

1. J. Lorencki	<i>Switched reluctance motor dynamic eccentricity modelling</i>	EXP 108
2. W. Fiebig, P. Kruczek	<i>Influence of the sliding bearing parameters on the dynamic behavior of external gear pumps</i>	NUM 352
3. O. Cherkasov, E. Makieva	<i>Optimal rendezvous with proportional navigation unmanned aerial vehicle</i>	OPT 017
4. S. Chwastek	<i>Finding globally optimal combinations of cranes drive mechanisms by the method of exhausting alternative design structures of mechanisms</i>	OPT 096
5. R. Pytlak, D. Suski, T. Tarnawski	<i>Numerical procedure for the sensitivity analysis of hybrid systems</i>	OPT 154
6. T. Nestorović, K. Hassw, A. Oveisi	<i>Optimization of the actuator/sensor placement for active vibration control of a funnel shaped piezoelectric structure</i>	OPT 281

Session R13, 11:30 - 13:00, room B

1. S. Mykulyak, S. Skurativskyi	<i>Nonlinear dynamics of the hierarchic system of oscillators</i>	BIF 005
J.D. Taylor, K. Abu-Hassan, 2. J.J.A. van Bavel, M.A. Vos, A. Nogaret	<i>Robust design of inhibitory neuronal networks displaying rhythmic activity</i>	LIF 118
3. V. Marinca, N. Herisanu	<i>Nonlinear vibration of Bernoulli-Euler beam on a Winkler elastic foundation</i>	MAT 179
A. Martowicz, 4. M. Żabiński, J. Bryła, J. Roemer	<i>Improving capabilities of constitutive modeling of shape memory alloys for solving dynamic problems via application of neural networks</i>	MAT 251
A. Martowicz, S. Kantor, 5. J. Pawlik, J. Bryła, J. Roemer	<i>Dynamics assessment of mechanically induced solid phase transitions in shape memory alloys via nonlocal thermomechanical coupling</i>	MAT 254
6. I. Dronyuk	<i>q-Ateb-functions and their properties</i>	MAT 344

4. Thursday, December 5, 2019

Session R14, 11:30 - 13:00, room C

1.	D. Patkó, A. Zelei	<i>Alternative inverse kinematic calculation methods in velocity and acceleration level</i>	CON 191
2.	R. Rusinek, K. Kęcik, A. Mitura	<i>Effect of electromechanical coupling in the middle ear with implantable hearing device</i>	LIF 041
3.	T. Alzarooni, M. AL-Shudeifat, O. Shiryayev, C. Nataraj	<i>On backward whirl excitation in linear time-variant intact and cracked rotor systems</i>	ENG 328
4.	M. AL-Shudeifat, O. Shiryayev, T. Alzarooni, C. Nataraj	<i>Full spectrum analysis for studying the backward whirl in accelerated rotor systems</i>	ENG 329
5.	I. Bizyaev, A. Borisov, A. Kilin, I. Mamaev, E. Pivovarova	<i>Nonholonomic acceleration and chaotic dynamics of locomotion</i>	CON 135
6.	Y. Karavaev, A. Kilin, A. Borisov	<i>Dynamics of a spherical robot in cases of periodical control actions and oscillations of the underlying surface</i>	CON 182

Session R15, 11:30 - 13:00, room D

1.	A.A. Zafar, J. Awrejcewicz	<i>On the dynamics of blood through the circular tube along with magnetic properties</i>	MAT 202
2.	W. Bielski, R. Wojnar	<i>Gravity waves in channels with corrugated bottom: asymptotic approaches</i>	MAT 331
3.	O. Mazur, J. Awrejcewicz	<i>Size-dependent nonlinear vibrations of micro-plates subjected to in-plane magnetic field</i>	MAT 353
4.	P. Olejnik, J. Awrejcewicz	<i>Analysis of dynamical response of a Stewart platform operating in six degrees of freedom</i>	MTR 001
5.	J. Deda, T. Mirosław, A. Zawadzki	<i>Dynamic model of remotely controlled swarm of robots</i>	MTR 124
6.	M. Bednarek, D. Lewandowski, J. Awrejcewicz	<i>Using electromagnetic springs for tailoring dynamical characteristics</i>	MTR 317

Closing of the conference, 13:00 - 13:15, assembly hall

Lunch, 13:15 - 14:30

Laboratories of the Automation, Biomechanics and Mechatronics
Department - short tour, 14:30 -

POSTER SESSION

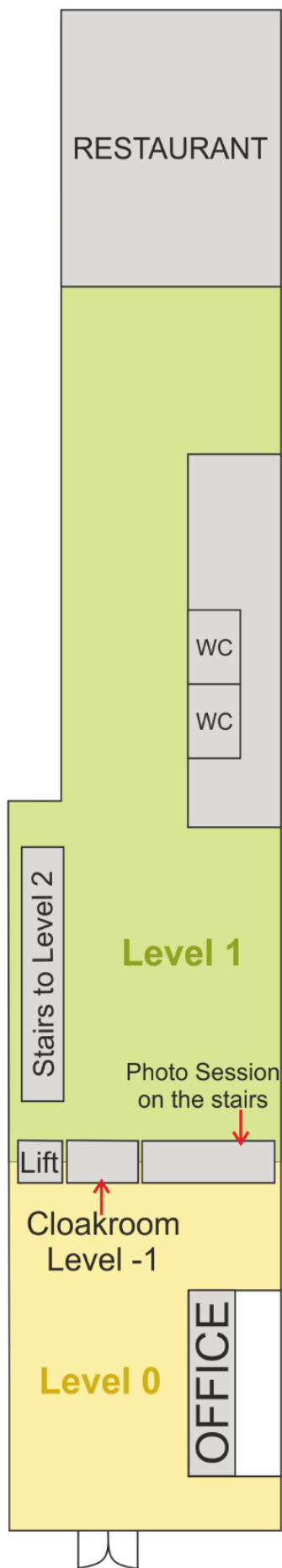
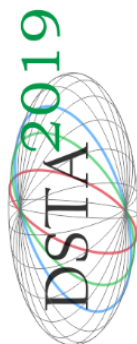
ID	Author(s)	Title	Poster
BIF 091	N. Nishiyama, K. Yamashita	<i>Suppression of impact oscillations in a railway current collection system with an additional oscillatory system</i>	1
CON 159	J. Petryszyn, J. Możaryn, S. Ozana	<i>Experimental evaluation of PLC based fractional order PIλDμ temperature control in pipeline</i>	2
MTR 160	J. Możaryn, A. Winnicki, D. Suski	<i>Modeling of electro-hydraulic servo-drive for advanced control system design</i>	3
CON 239	I. Krzysztofik, Z. Koruba	<i>A sensitivity research of the gyro system tracking the ground target from the quadrotor in conditions of external disturbances impact</i>	4
CON 257	I. Krzysztofik, Z. Koruba	<i>An optimal control of the gyroscope system in the process of homing an air-to-air missile</i>	5
CON 244	K. Sokół	<i>Instability and vibration control by means of piezoceramic element</i>	6
EXP 089	M. Zamojski, P. Summerauer, Ch. Bacher, F. Dohnal	<i>Towards online transient simulation of a real heat pump</i>	7
EXP 330	W.A. Hörtnagel, S. Plagg, F. Dohnal	<i>Harmonic transfer path analysis of a wine refrigerator</i>	8
EXP 222	L. Prochowski, M. Gidlewski, M. Ziubiński, K. Dziewiecki	<i>The kinematics analysis of the body deformation process during frontal and lateral collision according to the FMVSS 214 procedure and classical test</i>	9
MAT 174	N. Herisanu, V. Marinca	<i>A new analytical approach to nonlinear free vibration of microtubes</i>	10
MTR 186	A. Kosiara, A. Skurjat, J. Chołodowski	<i>Assessment of implementation of neural networks in on-board dynamic payload weighing systems</i>	11
VIB 245	S. Uzny, Ł. Kutrowski, M. Osadnik	<i>Nonlinear vibrations of simply supported column loaded by the mass element</i>	12
LIF 261	D. Cekus, P. Kwiaton, T. Geisler	<i>Analysis of the movement of the load during the interaction of wind force</i>	13
LIF 106	P. Olejnik, F. Wiądzkiewicz, J. Awrejcewicz	<i>Experimental dynamical analysis of a mechatronic analogy of the human circulatory system</i>	14

LIF 058	A. Mitura, R. Rusinek	<i>Two sound sources in implanted middle ear – numerical analysis</i>	15
LIF 305	Y. Shu, J. Awrejcewicz, B. Zagrodny	<i>Biomechanical analysis of different foot morphology during standing on a dynamic support surface</i>	16
LIF 019	M. Klepczyńska, B. Zagrodny, W. Wojnicz, M. Ludwicki, J. Awrejcewicz	<i>Influence of the shoe type on the ground reaction forces</i>	17
EXP 107	J. Chruściel, A. Frątczak, A. Puchalska, S. Streibl, B. Zagrodny	<i>Thermographic analysis of the additional load influence on the muscle activation during gait</i>	18
MTR 314	D. Grzelczyk, J. Awrejcewicz	<i>Stability and control of a hybrid walking robot on planar, unstable and vibrating terrain</i>	19
MTR 253	E. Ogińska, K. Polczyński, D. Grzelczyk, J. Awrejcewicz	<i>Numerical and experimental investigations of dynamics of magnetic pendulum with an aerostatic bearing</i>	20
LIF 326	O. Jarzyna, D. Grzelczyk, J. Awrejcewicz	<i>A simple pattern generator for biped walking</i>	21
CON 240	K. Polczyński, A. Wijata, J. Awrejcewicz	<i>Theoretical and numerical analysis of different modes in a system of a “kicked” magnetic pendulum</i>	22
BIF 320	K. Witkowski, G. Kudra, S. Skurativskiy, G. Wasilewski, J. Awrejcewicz	<i>Nonlinear forced oscillations of the coupled masses between repelling magnets</i>	23
BIF 318	M. Wojna, G. Wasilewski, J. Awrejcewicz	<i>The pair of oscillators coupled by the electromagnetic field</i>	24
NUM 297	A.V. Krysko-jr, J. Awrejcewicz, M.V. Zhigalov, V.A. Krysko	<i>Dimension reduction method in nonlinear equations of mathematical physics (MEMS/NEMS problems)</i>	25
MAT 299	V.A. Krysko-jr, J. Awrejcewicz, I.V. Papkova	<i>Complex vibrations of flexible beam NEMS elements, taking into account Casimir's forces under additive white noise</i>	26
ENG 324	V.A. Krysko-jr, J. Awrejcewicz, I.V. Papkova	<i>Nonlinear dynamics of flexible nanoplates resting on an elastic foundation in a stationary temperature field</i>	27

VIB 187	C. Behn, C. Will, J. Steigenberger	<i>Bending vibrations with boundary damping - unlike behavior of tactile sensors</i>	28
VIB 188	C. Behn, C. Will, L. Merker, J. Steigenberger	<i>Bending vibration systems which are complementary with respect to eigenvalues</i>	29
BIF 210	O. Nakonechnyi, V. Martsenyuk, A. Kłos-Witkowska	<i>On qualitative analysis of lattice dynamical system of two- and three-dimensional biopixels array: bifurcations and transition to chaos</i>	30
MAT 084	A.M. Krot	<i>On the theory of wave gravitational field arising under orbital motion of a gravitating body</i>	31
BIF 275	V. Ternovsky, A.V. Glushkov, E. Ternovsky, A. Tsudik	<i>Dynamics of non-linear processes in a backward-wave tubes chain: chaos and strange attractors</i>	32
ENG 267	A.V. Glushkov, V.V. Buyadzhi, A. Mashkantsev, A. Lavrenko	<i>Deterministic chaos in a damage dynamics of the engineering structures under varying environmental and operational conditions</i>	33
LIF 266	O.Yu. Khetselius, A.A. Svinarenko, Y.Ya. Bunyakova, A.V. Glushkov	<i>Chaos-geometric approach to analysis and forecasting evolutionary dynamics of complex systems: Atmospheric pollutants dynamics</i>	34
LIF 276	A.V. Glushkov, O.Yu. Khetselius, E.V. Ternovsky, Y.V. Dubrovskaya	<i>Chaos, bifurcations and strange attractors in environmental radioactivity dynamics of some geosystems</i>	35
MAT 269	A.V. Glushkov, A.V. Ignatenko, A.A. Kuznetsova, A.A. Buyadzhi, E.V. Ternovsky	<i>Nonlinear dynamics of atomic and molecular systems in an electromagnetic field: deterministic chaos and strange attractors</i>	36
MAT 273	A.V. Glushkov, V.B. Ternovsky, A. Tsudik, O. Mykhailov, V.V. Buyadzhi	<i>Deterministic chaos, bifurcations and strange attractors in nonlinear dynamics of relativistic backward-wave tube</i>	37
BIF 271	V.V. Buyadzhi, A.A. Buyadzhi, A. Chernyshev, E. Plisetskaya, E.V. Pavlov, S.V. Kir'yanov	<i>Nonlinear dynamics of laser systems: Chaos, bifurcations and strange attractors</i>	38

LIF 272	V. Buyadzhi, O. Khetselius, Y. Bunyakova, I. Serga	<i>Nonlinear dynamics of the industrial city's atmospheric ventilation: new differential equations model and chaotic ventilation</i>	39
MAT 270	O. Khetselius, A. Svinarenko, A. Ignatenko, A.A. Buyadzhi	<i>New generalized chaos-geometric and neural networks approach to nonlinear modeling of complex chaotic dynamical systems</i>	40

MAP



- OFFICE & REGISTRATION (Level 0)
- CLOAKROOM (Level -1)
- ASSEMBLY HALL (Level 2)
- RESTAURANT (Level 1)
- A - Conference Room (Level 2)
- B - Conference Room (Level 2)
- C - Conference Room (Level 2)
- D - Conference Room (Level 2)
- Poster Session (Level 2)
- Photo Session (Stairs to Level 1)

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