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# Part I ICCSEEA2020 Conference Schedule

## Oral Session

Tuesday, January 21, 2020

Time	Activity	Location
9:00-9:30	Registration	
9:30-10:00	Opening Ceremony	
10:00-10:30	<b>Keynote Speech:</b> Technology-Enhanced Financial Education and Sustainability Goals - 1158 <b>Speaker:</b> Prof. Margherita Mori	<a href="#"><u>Conference Place</u></a> <a href="#"><u>“Slavianskyiv Hall”,</u></a> <a href="#"><u>Hotel LYBID</u></a>
10:30-11:00	<b>Keynote Speech:</b> Relations of the Genetic Code with Algebraic Codes and Hypercomplex Double Numbers - 1227 <b>Speaker:</b> Prof. Sergey Petoukhov	
11:00-11:20	Coffee Break	
11:20-11:35	Pavlov, Alexander Anatolievich, <b>Long-Term Operational Planning of a Small-Series Production Under Uncertainty (Theory and Practice)-1224</b>	
11:35-11:50	Wu Shan, Li Haitao, Fan Binchan, Zhang Jinlong, <b>Evaluation Research on Technology Innovation Efficiency of High-end Equipment Manufacturing Based on DEA Malmquist index method —Taking Guangdong Province as an example -1184</b>	
11:50-12:05	D.G. Zelentsov, L.I. Korotka, O.R. Denysiuk, <b>The method of correction functions in problems of optimization of corroding structures -1196</b>	
12:05-12:20	Yong Wang, Pei-lin Zhang, Qian Lu, Daniel Tesfamariam Semere, Gang Li, <b>Research and Application of Storage Location Optimization in Warehousing Center of TPL Enterprises -1223</b>	
12:20-12:35	Ya-Hu Yang, Jia-Shu Xu, Sergii Stirenko, <b>Abnormal Interference Recognition Based On Rolling Prediction Average Algorithm -1173</b>	
12:35-12:50	Andrey Voskoboinick, Vladimir Voskoboinick, Alexandre Gyrgii,	

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	Oleksandr Voskoboinyk, Dmytro Cherny, Lidia Tereshchenko, <b>Interaction of Group of Bridge Piers on Scour -1154</b>
12:50-14:00	<b>Launch Buffet</b>
14:00-14:15	Victor A. Panchelyuga, Maria S. Panchelyuga, Olga Yu. Seraya, <b>Resonance and rational numbers distribution: a universal algorithm of discrete states occurrence in the spectra of various nature systems -1252</b>
14:15-14:30	Ivan Dychka , Viktor Legeza , Liubov Oleshchenko , Dmytro Bohutskyi, <b>Method Simultaneous Using GAN and RNN for Generating Web Page Program Code from Input Image-1183</b>
14:30-14:45	Taras Panchenko, Mohammad Alhawawsha, <b>Open Data Platform Architecture and its Advantages for an Open E-Government -1211</b>
14:45-15:00	Zhengbing Hu, Yurii Koroliuk, <b>Collaboration based simulation model for predicting students' performance in blended learning -1230</b>
15:00-15:15	Bogdan Korniyenko, Lesya Ladieva, <b>Mathematical Modeling Dynamics of the Process Dehydration and Granulation in the Fluidized Bed -1157</b>
15:15-15:30	Andrii Tymoshenko, Dmitry Kluyshein, <b>Optimal Control of Point Source Intensity in a Porous Medium -1164</b>
15:30-15:45	Pavlo Kovalchuk, Roman Kovalenko, Volodymyr Kovalchuk, Olena Demchuk, Hanna Balykhina, <b>Integrated Water Management and Environmental Rehabilitation of River Basins Using a System of Non-linear Criteria -1168</b>
15:45-16:00	A.M. Chugay, A.V. Zhuravka, <b>Packing optimization problems and their application in 3D printing -1180</b>
16:00-16:20	<b>Coffee Break</b>
16:20-16:35	Volodymyr Kovalchuk, Oleksandr Voitovich, Dmytro Demchuk, Olena Demchuk, <b>Development of Low-Cost Internet-of-Things (IoT) Networks for Field Air and Soil Monitoring within the Irrigation Control System -1181</b>
16:35-16:50	Oleksandr Lemeshko, Maryna Yevdokymenko, Oleksandra Yeremenko, Anastasiia Shapovalova, <b>Investigation of Load-Balancing Fast</b>

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**ReRouting Model with Providing Fair Priority-Based Traffic Policing-1190**

- 16:50-17:05 Tetiana Serdiuk , Vitaliy Kuznetsov, Mykola Tryputen, Alisa Kuznetsova, Yevheniia Kuznetsova, Maksym Tryputen, **Improving the Reliability of Simulating the Operation of an Induction Motor in Solving the Technical and Economic Problem-1204**
- 17:05-17:20 Heorhii Loutskaa, Artem Volokyta, Pavlo Rehida, Goncharenko Olexandr, Vu Duc Thinh, **Method for synthesis scalable fault-tolerant multi-level topological organizations based on excess code-1203**
- 17:20-17:35 Oleksandr Lemeshko, Oleksandra Yeremenko, Maryna Yevdokymenko, Ahmad M. Hailan, **Tensor Multiflow Routing Model to Ensure the Guaranteed Quality of Service Based on Load Balancing in Network-1192**
- 17:35-17:50 Anatolii Pashko, Tetiana Oleshko, Olga Syniavska, **Estimation of Hurst parameter for self-similar traffic-1234**
- 17:50-18:05 Dmitri Vengrovich, Vasyl Kulich, **Subduction in the Earth's lithosphere, modeled as a compressed flow of cubes using the discrete element method-1239**
- 18:05-18:20 Volodymyr Sherstjuk, Maryna Zharikova, Igor Sokol, Ruslan Levkivskiy, **Vehicles' Joint Motion Model Based On Dynamic Soft Rough Set-1245**
- 18:20-18:35 Serge Dolgikh, **On Unsupervised Categorization in Deep Autoencoder Models-1153**
- 18:35-18:50 Vsevolod Bohaienko, **Performance of vectorized GPU-algorithm for computing  $\psi$ -Caputo derivative values-1159**
- 18:50-19:05 Petro Kravets, Volodymyr Pasichnyk, Nataliia Kunanets, Nataliia Veretennikova, **Adaptive Strategies in the Multi-agent "Predator-prey" Models-1166**
- 19:05-19:20 Oleksandr Rolik, Oleksandr Amons, Kseniia Ulianytska, Valerii Kolesnik, **Modernization of the Second Normal Form and Boyce-Codd Normal Form for relational theory-1169**
- 19:20-19:35 Maksymovych V.M., Harasymchuk O.I., Shabatura M.M., **Modified Generators of Poisson Pulse Sequences Based on Linear Feedback**
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**Shift Registers-1179**

19:35-19:50 Svitlana Kazmirchuk, Anna Ilyenko , Sergii Ilyenko , Olena Prokopenko, Yana Mazur, **The Improvement of digital signature algorithm based on elliptic curve cryptography-1182**

19:50-22:00 **Welcome Banquet**

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## Oral Session

**Wednesday, January 22, 2020**

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<b>Time</b>	<b>Activity</b>	<b>Location</b>
9:00-9:30	<b>Keynote Speech:</b> Concept of the Automated Network for Monitoring Weather Conditions and Detecting Dangerous Atmospheric Phenomena based on Small-power Radar <b>Speaker:</b> Prof. Felix J. Yanovsky	
9:30-10:00	<b>Keynote Speech:</b> Optimization of the Cell Towers Location for Mobile Communication on 5G Technology <b>Speaker:</b> Prof. Vadym Mukhin	<a href="#"><u>Conference Place “Slavianskyiv Hall”, Hotel LYBID</u></a>
10:00-10:15	Igor Golinko, Iryna Galytska, <b>Mathematical modeling of dynamic heat-mass exchange processes for a spray-type humidifier-1177</b>	
10:15-10:30	Anatolii Sergiyenko, Maria Orlova, Oleksii Molchanov, <b>Hardware/software co-design for XML-document processing-1213</b>	
10:30-10:45	Yurii Kulakov, Alla Kohan, Sergii Kopychko, Roman Cherevatenko, <b>Load Balancing in Software Defined Networks Using Multipath Routing-1226</b>	
10:45-11:00	Inna V. Stetsenko , Viktoriia Savchuk, <b>Information System Penetration Testing Using Web Attack Automated Simulation-1244</b>	
11:00-11:20	<b>Coffee Break</b>	
11:20-11:35	Serhii Bulba, Nina Kuchuk, Anna Semenova, <b>Distribution of resources between composite applications in a hyperconverged system-1256</b>	

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11:35-11:50	Maksim Ivach, Avtandil Gagnidze, Giorgi Iashvili, Tetyana Okhrimenko, Arturo Arakelian, Andriy Fesenko, <b>Improvement of Merkle Signature Scheme by Means of Optical Quantum Random Number Generators-1257</b>
11:50-12:05	Maksim Ivach, Sergiy Gnatyuk, <b>Improved Post-Quantum Merkle Algorithm Based on Threads-1258</b>
12:05-12:20	Xavier Fagan, Kateryna Ivanko, Nataliia Ivanushkina, <b>Detection of Ventricular Late Potentials in Electrocardiograms using Machine Learning-1155</b>
12:20-12:35	Ivan Dychka, Ihor Tereikovskiy, Liudmyla Tereikovska, Anna Korchenko, Volodymyr Pogorelov, <b>Significant parameters of the keystroke for the formation of the input field of a convolutional neural network-1187</b>
12:35-12:50	Zhengbing Hu, Ihor Tereikovskiy, Oleksandr Korystin, Victor Mihaylenko, Liudmyla Tereikovska, <b>Two-layer Perceptron for Voice Recognition of Speaker's Identity-1191</b>
<b>12:50-14:00</b>	<b>Launch Buffet</b>
14:00-14:15	Mykola Pasyeka, Ivanna Dronyuk, Nadia Pasiaka, Vasil Sheketa, Nadia Lutsan, Oksana Kondur, <b>Mathematical Models of Formation and Functioning of Teams of Software Systems Developers-1175</b>
14:15-14:30	Viacheslav Dudar, Vladimir Semenov, <b>Spatial Transformer Steerable Nets for Rotation and Flip Invariant Classification-1209</b>
14:30-14:45	Nataliya Kobets, Tetiana Kovaliuk, <b>Method of recognition and indexing of people's faces in videos using model of machine learning-1210</b>
14:45-15:00	Z. B. Hu, V. Buriachok, V. Sokolov, <b>Deduplication Method for Ukrainian Last Names, Medicinal Names, and Toponyms based on Metaphone Phonetic Algorithm-1197</b>
15:00-15:15	Valentyn Tomashevskiy, Iryna Pohrebniuk, Nataliia Kunanets, Volodymyr Pasichnyk, Nataliia Veretennikova, <b>Construction of Individual Learning Scenarios-1174</b>

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15:15-15:30	Nikolay Poluyanenko, Alexandr Kuznetsov, Konstantin Lisickiy, Serhii Datsenko, Oleksandr Nakisko, Serhii Rudenko, <b>The problem of double costs in blockchain systems-1219</b>
15:30-15:45	Roman Marusenko, Volodymyr Sokolov, Volodymyr Buriachok, <b>Experimental Evaluation of Phishing Attack on High School Students-1231</b>
15:45-16:00	Solomiia Fedushko, Taras Ustyianovych, <b>Operational Intelligence Software Concepts for Continuous Healthcare Monitoring and Consolidate Data Storage Ecosystem-1225</b>
<b>16:00-16:20</b>	<b>Coffee Break</b>
16:20-16:35	Meng Wang, Xuejiang Wei, <b>Research on Logistics Center Location-allocation Problem Based on Two-stage K-means Algorithms-1171</b>
16:35-16:50	Alishir A. Alifov, <b>On Calculation By The Linearization Method Of Mixed Parametric And Self-Oscillations At Delay-1163</b>
16:50-17:05	LiLi Li, <b>The spatial characteristics of high-speed railway noise emission at different speeds-1240</b>
17:05-17:20	Alexander M. Sergeev, Anatoly A. Solovyev, Nikita S. Kovalev, <b>Smart Prothesis: Sensorization, Humane Vibration and Processor Control-1151</b>
17:20-17:35	Mengya Zhang, Yanhui Cai, Kun Chen, Xiaofei Yin, Jin Liu, <b>Research of Dynamic Stress on Assembly Process of Interference Fit between Axle and Hole of Planetary Gear-1242</b>
17:35-17:50	Ziye Wang, Fei Lu, Xinpeng Zhao, Qingying Zhang, <b>MECE Guided Systematic Analysis and Fussy Assessment of Major Sports Event Broadcasting Center Service Quality—Take the 7th Military World Games as an Example-1243</b>
17:50-18:05	Yao Zhang, Jinshan Dai, Mengya Zhang, Qingying Zhang, <b>Optimal Decision of Supply Chain Based on Nested Loop Algorithm from the Perspective of System Analysis-1247</b>
18:05-18:20	Zhengbing Hu, Oleksii K. Tyshchenko, <b>The possibilistic Gustafson-Kessel fuzzy clustering procedure for online data processing-1251</b>

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18:20-18:35	Jinshan Dai, Yao Zhang, Mengya Zhang, Qingying Zhang, <b>Optimization of Stock Basing on Improved Grey Prediction Model: A Case Study on Garment Supply Chain-1259</b>
18:35-18:50	Zhou Xiaofen, Zhang Yi, <b>Use of Sustainable Innovation in Information System: Integrate Individual's Spirit and Team Climate-1255</b>
18:50-19:05	Peng Yongjun, GuoRui, wan anping, You Ningdong, Wu Lihua, <b>Health Status Recognition System for Communication Equipment Based on Data Mining-1265</b>
19:05-21:00	<b>Banquet</b>

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**Thursday, January 23, 2020**

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<b>Time</b>	<b>Activity</b>	<b>Location</b>
10:00-16:00	One-day Tour in Kiev	Kiev

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## Part II Keynote Speeches

**Keynote Speech:** Technology-Enhanced Financial Education and Sustainability Goals

**Speaker:** Prof. Margherita Mori

**Time:** 10:00-10:30, January 21, 2020

**Location:** Conference Hall "Slavianskiy",  
Hotel LYBID



**Abstract.** This paper aims at providing evidence on how technological progress may allow to scale up financial education, in sight of boosting financial resilience. What makes this tough task a must - rather than an option - is the vital role that financial literacy and competence can play to eradicate financial exclusion: it fuels serious worries that encourage to minimize financial vulnerability and maximize financial well-being; in turn, financial inclusion can significantly contribute to the Sustainability Goals that have been adopted by the United Nations in 2015. These thoughts sound like an invitation to analyze the state-of-the-art and sort out unexploited opportunities. To this end, a review of most recent literature paves the way to a closer look at innovative technologies to be usefully applied to the education industry, in an attempt at furthering financial capabilities, both locally and on a global scale. Interdisciplinary issues to be addressed encompass web-based learning platforms, technology-enhanced pedagogical models and educational games; focusing on the audience, it must be accounted for the recent trend towards widening the scope of financial education beyond traditionally acknowledged borders, as shown by the increasing recourse to initiatives aimed at the younger and the elderly, in line with the lifelong learning approach. The significance, advancing features and value of this research conceptual paper can be identified with its results in terms of best practices that are worth disseminating, to the benefit not only of the targeted groups - including unbanked and underbanked households - but of society as a whole.

### Biography

**Prof. Margherita Mori,**

Margherita Mori is a full professor in Financial Markets and Institutions at the University of L'Aquila, Italy, where she has also been teaching Bank Management since 1994; has served there as the scientific coordinator of the cooperative agreement with S. Seifullin Kazakh Agro-Technical University in Astana, Kazakhstan (2013-2018), Vice-Dean (2008-2012) and Head of Department

(1999-2000); had been previously appointed as an associate professor at the University of Lecce, Italy (1992-1994), and as a research fellow at the University of Cassino (FR), Italy (1988-1992); has published many books and articles on financial issues since 1988, not only in Italy; has been involved in academic activities in several other countries (Albania, China, Finland, Greece, Kazakhstan, Hungary, India, Macedonia, Morocco, Spain and USA); graduated cum laude in 1980 as “Dottore” in Economics and Commerce at the University of Rome, Italy (now “La Sapienza”), where she passed the qualifying examination as “Dottore Commercialista” (chartered accountant) in 1986. In the meantime, studies had been undertaken in Spain, Denmark and Hungary, as well as in the United States, leading to her 2-yr MBA from Lehigh University (Bethlehem, PA - USA) in 1983; operating roles were played by her in the insurance and banking industries at the headquarters of primary institutions in Rome, Italy (1984-1988).

E-mail: [margherita.mori@univaq.it](mailto:margherita.mori@univaq.it)

**Keynote Speech:** Relations of the Genetic Code with Algebraic Codes  
and Hypercomplex Double Numbers

**Speaker:** Prof. Sergey V. Petoukhov

**Time:** 10:30-11:00, January 21, 2020

**Location:** Conference Hall "Slavianskiy",  
Hotel LYBID



**Abstract.** According to the founders of quantum mechanics P. Jordan and E. Schrödinger, the main difference between living and inanimate objects is the dictatorial influence of genetic molecules on the whole living organism (in contrast, inanimate objects are controlled by the average random movement of their millions of particles). The presentation is devoted to algebraic biology, which deals with algebraic modeling of the structural organization of DNA/RNA genetic alphabets and inherited biological macro-phenomena bearing the stamp of these alphabetical structures. This scientific direction is closely related to the “grammar of biology”. It initially focuses on the binary-oppositional alphabetic structures of DNA and RNA molecules, which leads to tensor families of special matrices called genetic. This family, in particular, includes a (8\*8)-matrix of 64 triplets, in which encoded 20 amino acids and the stop-codons of protein synthesis are placed in an algebraically regular way associated with hypercomplex numbers and doubly stochastic matrices.

This testifies to the fact that the genetic code is not a simple matching of one set of elements to another set like as in a phone book, in which phone numbers encode the names of people; but that the genetic code is inherently an algebraic code, similar to those algebraic codes that are used for noise-resistant transmission of information in space communication. Given these and other findings, the author believes that living organisms are algebraically encoded essences. The lecture presents argumentations for this idea, showing a number of inherited biological structures that are effectively modeled by  $2^n$ -dimensional double (or hyperbolic) numbers, known in mathematics and physics. Additional author's data testify that presented series of algebraic bio-phenomena can be related with resonance interrelations in oscillatory systems with many degrees of freedom (the author's conception of multi-resonance genetics).

## **Biography**

**Sergey V. Petoukhov,**

Prof., Dr. Sci. (Mechanical Engineering Research Institute, Russian Academy of Sciences, Moscow, Russia)

Current employments: Head of Laboratory of biomechanical systems research in Mechanical Engineering Research Institute of the Russian Academy of Sciences; Chief researcher of the “Center of interdisciplinary researches of musical creativity” of the Moscow State Conservatory

by P.I. Tchaikovsky; Editor-in-Chief of “International Journal of Mathematical Sciences and Computing” (Hong Kong).

Selected honors and awards: Laureate of the State prize of the USSR; Academician of the Academy of Quality Problems (Russia, from 2000); Grand Doctor of Philosophy, Full Professor (The European Academy of Informatization, Belgium, 2004); the Chinese government has included S.V. Petoukhov in the «List of Outstanding Scientists in the World» in 2012; Chairman of Advisory Board of «International Symmetry Association», Budapest, Hungary, from 2003 till now; Honorary chairman of Board Directors of «International Society of Symmetry in Bioinformatics», USA, 2005; co-leader of long-term scientific cooperation between Russian and Hungarian Academies of Sciences in the theme «Non-linear models and symmetrological analysis in biomechanics, bioinformatics and theory of self-organizing systems»; Scientific supervisor and main contractor for competitive state contracts on bioinformatics in 2009-2011; Vice-Chair of the International Advisory Board Directors of the Research Association of Modern Education and Computer Science (Hong Kong) from 2016; Vice-President of the International Society of Natural Medicine (Slovakia); scholarship for scientific internship in Germany from the German Academic Exchange Service (DAAD, 2017).

See additional information at <http://petoukhov.com/>.

**Keynote Speech:** Concept of the Automated Network for Monitoring Weather Conditions and Detecting Dangerous Atmospheric Phenomena based on Small-power Radar Management in a Data

Center

**Speaker:** Prof. Felix J. Yanovsky

**Time:** 9:00-9:30, January 22, 2020

**Location:** Conference Hall "Slavianskyiy",  
Hotel LYBID



**Abstract.** Weather radar observations are very important for investigation and prediction of various dangerous atmospheric phenomena such as thunderstorm, hail, severe turbulence, wind shear, icing in flight, tornado, hurricane, strong dust storm, low clouds, and others. Each of noted ones is very hazardous for the flight safety. World Meteorological Organization (WMO) considers the meteoradar systems as a part Global Observing System. In this paper, suggest building a novel low-cost base station radar network by adding the low-power radars to the existent base stations equipment. This gives a possibility to obtain a high-resolution meteorological information in real-time about every place with mobile network coverage. The applications of proposing network are not limited by meteorology, but includes also some other fields, for example, traffic monitoring, birds' and insects' migration observations, etc. The features of such network are discussed below as well as the requirements to performance characteristics of novel high informative, low-cost and low-power meteorological network radar systems.

## **Biography**

**F. J. Yanovsky** was born on February 7, 1946 in Kiev, Ukraine. He is with the National Aviation University (NAU) since 1969. Started at the Department of Radar (Assistant, Senior Lecturer, Associate Professor), since 1992 worked as a Full Professor at Maintenance and Repair of Avionics Department, in 2000 moved to Air Navigation Systems Department, where served as the Deputy Head and Full Professor. Since 2008 to present he is the Head of Electronics Department. In 1996 he was invited to the Delft University of Technology, The Netherlands where worked in IRCTR 1996 to 1999, 2002-2003 during 6 months per year as the Top Scientist, Professor. He consulted and worked part-time in the companies of aviation and electronics industry in Ukraine.

In 1968 he graduated (with Honors) from the Radio Engineering Faculty of the Kiev University of Civil Aviation Engineers (now NAU). He prepared his PhD dissertation in Radar and Radio Navigation in NAU and defended it in 1979 in Moscow State Technical University (MSTUCA). In 1992 he defended in NAU his dissertation on DSc degree in Radio-Meteorology, and in 1993 he got his second DSc degree, this time in Radar and Radio Navigation in MSTUCA.

Research activity is related to radar, remote sensing, signal processing, and adaptive measurement of atmospheric electricity. He took part in design of digital airborne navigation and meteorological radar of new generation, was one of the first who proposed the use of polarimetric technology for meteorological radars, created the theory, math models, methods of coherent polarimetric radar in respect to detecting dangerous zones in the atmosphere, signal processing algorithms, and principles of the relevant devices and systems, developed a spectral-polarimetric method for remote sensing of natural phenomena and objects.

Being the Professor in NAU he was invited to lecture at the International Travelling Summer School in the framework of Joint European University Activity. He was visiting professor: TU-Delft, The Netherlands (2002-2003), TUHH, Hamburg, Germany (2005), Al-Balqa Applied University, Irbid, Jordan (2007), Hanyang University, Seoul, Republic of Korea (2008), Metrology Institute of Academy of Sciences, Beijing, China (2010), Warsaw University of Technology, Poland (2010, 2013, 2014). In 1998 his one-day workshop was held at Penn State University (University Park, PA, USA). He promoted a lot of PhD holders and hundreds of MS and Engineers.

He is Fellow IEEE, belongs to AES, SP, GRS, AP, and MTT societies; a member of the Scientific Council of the National Academy of Science of Ukraine in Radio Physics and Microwave Electronics, member of General Assembly of EuMA - European Microwave Association (2004-2007); founder and the first Chair of IEEE Ukraine SP/AES Joint Chapter. Academician of the Transport Academy of Ukraine, the Academy of Electromagnetics (Cambridge, PA, USA), the Academy of Navigation and Motion Control, and the Academy of Sciences in Applied Radio Electronics of Belarus, Russia and Ukraine.

Organization of international conferences in radar, electronics and computer technology as Chairman, Section Organizer, TPC Member, and Key Speaker. He is founder and Chairman of the Microwaves, Radar and Remote Sensing Symposium (MRRS) that is held since 2005 every three years. Proceedings of MRRS are cited in IEEE X-plore, Scopus, etc. In 2014 he is a Co-Chairman of IRS. He is a member of editorial boards of several scientific journals in Ukraine and abroad, in particular he is associate editor of the International Journal of Microwave and Wireless Technologies (Cambridge University Press, UK) and IEEE AES Systems Magazine special issue. He is a reviewer of IEEE Transactions and other international journals.

Awards - Ukraine State Prize Winner, holder of the Honorary medals, Inventor of the USSR and Honorary Radio Engineer, Fellow IEEE, recipient of numerous International Grants.

Publications - 10 books (in CRC, Springer, Momentum Press, Elsevier, Technika and other publishers) more than 470 papers in refereed journals and conference proceedings, and 40 invention patents. Citations i10-Index: 25, h-Index: 15(2017).

See additional information at <http://radar.ewi.tudelft.nl/People/bio.php?id=353>

## **Keynote Speech:** Optimization of the Cell Towers Location for Mobile

Communication on 5G Technology

**Speaker:** Prof. Vadym Mukhin

**Time:** 9:30-10:00, January 22, 2020

**Location:** Conference Hall "Slavianskyiy",

Hotel LYBID



**Abstract.** The constant increase in number of mobile clients in the telecommunications companies leads to the necessity to get the optimal location of the cell towers in big cities and to take into accounts the territory specifics, i.e. location of buildings. At this time, the 5G is brand new technology, which operates on the basis of multiple input/multiple output and allows transfer the data with the rate up to 25 Gbits/s. The increasing the data transfer rate in Internet results in the frequency increasing of the signal transfer, which reduces the range of repeaters location. Therefore, there is a need to solve the problem, related to the location of cell-towers in particular restricted area, such as areas in big cities, to ensure the permanent access to mobile devices and mobile Internet nodes. In this research we suggest the approach to the location of cell-towers that allows to realise the optimal location of towers taking into account the territorial specifics of cities.

## **Biography**

**Vadym Mukhin**, Professor, Doctor of Science (Technical), Professor of department of mathematical methods of system analysis of National Technical University of Ukraine "Igor Sikorsky Kiev Polytechnic Institute", author of more than 200 scientific papers among which there are 4 monographs.

4 Ph.D. thesis have been successfully defended under his scientific supervision.

### **Current Employments**

Professor of department of mathematical methods of system analysis of National Technical University of Ukraine "Igor Sikorsky Kiev Polytechnic Institute".

### **Education and Career**

1994 - Graduated from Kiev Polytechnical Institute;

1997 - Obtained Ph. D. (Technical) degree for research conducted in the field of security mechanism in computer networks from National Technical University of Ukraine "Igor Sikorsky Kiev Polytechnic Institute".

2015 - Obtained Dr. Sc. (Technical) degree for development of multicomputers systems based on multichannels communication environment from National Technical University of Ukraine "Igor Sikorsky Kiev Polytechnic Institute".

1997 - 2000 - assistant professor of department of computer technics of National Technical University of Ukraine "Kiev Polytechnic Institute".

2000 - 2015 - associated professor of department of computer technics of National Technical University of Ukraine "Kiev Polytechnic Institute".

2015 - 2017 - Professor of department of computer technics of National Technical University of Ukraine "Kiev Polytechnic Institute".

From 2017 - Professor of department of mathematical methods of system analysis of National Technical University of Ukraine "Igor Sikorsky Kiev Polytechnic Institute".

Major scientific interests: the security of distributed computer systems and risk analysis; design of the information security systems; mechanisms for the adaptive security control in distributed computing systems; the security policy development for the computer systems and networks; the artificial intellectual systems; blockchain technology.



## **Part III Instructions for Presentations**

### **Oral Presentation**

#### **Devices Provided by the Conference Organizer:**

Laptops (with MS-Office & Adobe Reader)

Projectors & Screen

Laser Sticks

#### **Materials Provided by the Presenters:**

PowerPoint or PDF files

Durations of each Presentation (Tentatively):

Regular Oral Session: about 10-20 Minutes of Presentation, 5  
Minutes of Q&A

Keynote Speech: 30-40 Minutes of Presentation, 10 Minutes of  
Q&A

## Part V Hotel Information

### *Conference Hotel - Premier Hotel Lybid*

Address: 1 Peremohy sq., Kyiv 01135, Ukraine



<https://lybid-hotel.phnr.com/en/contacts>



Premier Hotel Lybid is located in the business and historical center of the capital of Ukraine. The Hotel offers excellent views of Peremohy Square and Shevchenko Boulevard. Ukraina Shopping Mall and National Circus are located near the hotel; aboveground transport junction is convenient. The Botanical Garden and St. Volodymyr's Cathedral are located nearby. The Central Railway Station and Voksalna metro station is a ten minute walk. Comfortable and affordable Kiev hotel offers 274 light and comfortable rooms of different categories.



## Part VI Contact Us

### Contact Information



**Dr. Z.B. Hu**

The Secretary of ICCSEEA2020.

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