

BIG BRAIN 2023, 4-8 December, BELGRADE

PROGRAM

Mon, Dec 4

CET (Central European Time)	no	speaker	Title of the talk
8.30-9.00	Registration		
9.00-9.30	Opening		
9.00-9.05		Jochen Mau	Introduction to BIG BRAIN 2023
9.05-9.15		Prof.CUPIC & Pprof. VUKOJEVIĆ	In Memoriam Ljiljana Kolar-Anic: A Tribute for Excellence and Inspiration
9.15-9.20		Prof. A. RAZGULIN	Welcome Address from Lomonosov Moscow State University by Dean of Fac. Computational Mathematics and Cybernetics, Lomonosov Moscow State University
9.20-9.25		Prof. LIN WEI	Welcome Address from Fudan University by Dean of Research Institute of Intelligent Complex Systems, Fudan University, Shanghai
9.25-9.30		Prof. Zoran OGNJANOVIĆ	Welcome Address of Hosting Institution and Opening of Scientific Sessions by Director of Mathematical Institute of Serbian Academy of Sciences and Arts-MI SANU
Section chair: Lijun ZHANG			
10.00-10.30	1	30 WANG Guanyu	Seeking Fundamental Laws in Metabolism
10.30-11.00	2	30 ZHANG Lijun	Dynamical analysis of the ionic flows through ion channels embedded in cell membrane
11.00-11.30	3	30 KHALYAVKIN	Application of the Gompertz-Strehler Approximation to Estimate the Statistically Realized Possibility of Claimed Cases of Super-Longevity
11.30-11.45	15min coffee break		
Section chair: Vitaly VOLPERT			
11.45-12.15	4	30 BOGOMOLOV	Stochastic Formalization of Agent-oriented System
12.15-12.45	5	30 LEONOV	On Neural Network Solutions in Stochastic Optimal Control Problems
12.45-13.15	6	30 TANG Rui	Agent-Based Modeling of Epidemic Spread via Kinetic Monte Carlo Method
13.15-13.45	7	30 VOLPERT	Mathematical modelling of epidemic: from the human organism to the population
13.45-14.45	60min lunch break		
Section chair Andjelka HEDRIH			
15.00-15.30	8	30 MOZOKHINA	Mathematical model of the infection spreading with inflammation
15.30-16.00	9	15 HEDRIH	Biomechanical models in reproductive biology Andjelka Hedrih
16.00-16.15	15min coffee break		
16.15-16.45	10	30 DENISOV	Classification of Intracytoplasmic Sperm Injection Videos
16.45.-17.15	11	30 LITVINOV	Audio Description of Video for Visually Impaired People

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PROGRAM

Tue, Dec 5

(Central European Time)	no	speaker	Title of the talk
8.30-9.00	Registration		
Section chair : Vladana VUKOJEVIĆ			
9.00-9.30	12	30 HESCHELER	Back to the beginning: Learning from pluripotent stem cells how our body and brain originated
9.30-10.00	13	30 VUKOJEVIĆ	Quantitative Characterization of Fast Molecular Processes in Live Cells Sho Oasa, Aleksandar J. Krmpot, Stanko N. Nikolić, Lars Terenius, Milivoj R. Belić, Vladana Vukojević
10.00-10.30	14	30 SIMONOVIĆ	Bone cells mechanobiology and synchronisation Julijana Simonović
10.30-10.45	15min coffee break		
Section chair: Željko ČUPIĆ			
10.45-11.15	15	30 SHPIGUN	Chirality of secondary protein structures. Mathematical problem of secondary structure synthesis
11.15-11.45	16	30 LUTSENKO	Mathematical method for calculation of chirality sign and degree of protein superhelices
11.45-12.15	17	30 LEVASHOVA	Modeling the dynamics of negative mutations for mouse population and the inverse problem of determining phenotypic differences in the first generation
12.15-12.45	18	30 BESKYDROVA	Modeling of cell dynamics in human epidermis in a state of homeostasis
13.00-14.00	60min lunch break		
14.15-14.45	19	30 LEVASHOV	Regulation of the reversible transformation of lyso Modeling the Non-linear Dynamics of
14.45-15.15	20	30 ČUPIĆ	Modeling the Non-linear Dynamics of Neuro-endocrine System Željko Čupić, Ana Ivanović-Šašić
15.15-15.30	15min coffee break		
Section chair: Stevan MAČEŠIĆ			
15.30-16.00	21	30 BUBANJA	On Heterogeneity in the Bray-Liebafsky Reaction Mechanism Itana Nuša Bujanja, Annette Fiona Taylor, Dragomir Stanisavljev
16.00-16.30	22	30 MAČEŠIĆ	Understanding Oscillatory Dynamics of the Bray-Liebafsky Reaction via Modelling Stevan Maćešić
16.30-17.00	23	30 HEDRIH (STEVANOVIĆ)	The elements of mathematical phenomenology in modelling oscillations in mechanical and biodynamic systems using fractional calculus Katica (Stevanović) Hedrih

BIG BRAIN 2023, 4-8 December, BELGRADE**PROGRAM****Wed, Dec 6**

(Central European Time)	no	speaker	Title of the talk
8.30-9.00	Registration		
	Section chair: Stevan MAČEŠIĆ		
9.00-9.30	24	30 BEKLEMYSHEVA	Numerical modeling of medical ultrasound problems using grid-characteristic method
9.30-10.00	25	30 DOLMATOV	Determination of the left-branch block syndrome based on the standard EEG processing algorithm and the support vector machine method
10.00-10.30	26	30 KOCHETOV	Building a machine learning approach for diagnosing blood-flow disorders using mathematical modeling
10.30-10.45	15min coffee break		
	Section chair: Nenad FILIPOVIĆ		
10.45-11.15	27	30 SIMAKOV	Mathematical model for non-invasive evaluation of hemodynamic indices (FFR, CFR and iFR) in the presence of residual myocardial ischemia o
11.15-11.45	28	30 GAMILOV	Comparison of elastic and fractional order viscoelastic 1D hemodynamic models
11.45-12.15	29	30 DOBROSERDOVA	Patient-specific numerical blood flow modelling of the Fontan circulation
12.15-12.45	30	30 FILIPOVIĆ	Digital patients for heart failure, STRATIFYHF project
13.00-14.00	60min lunch break		
	Section chair: Nadezda VASILYEVA		
14.15-14.45	31	30 MILIĆEVIĆ	Machine learning and computational modeling for cardiomyopathy
14.45-15.15	32	30 GEROSKI	Applied machine learning for image analysis for cardiovascular disease
15.15-15.30	15min coffee break		
15.30-16.00	33	30 MILOSEVIĆ	In silico trials for drug optimization of cardiomyopathy
16.00-16.30	34	30 TOMASEVIĆ	Plaque progression in the carotid artery
16.30-17.00	35	30 VASILYEVA	Digital Twin of Natural Environment: Concept and Architecture

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Thu, Dec 7

(Central European Time)	no	speaker	Title of the talk
8.30-9.00	Registration		
Section chair: Shuhua XU			
9.00-9.30	36	30 XU Shuhua	Genetic Diversity and a Pangenome Reference for Chinese Populations
9.30-10.00	37	30 MARINKOVIĆ	Effect of different nitrogen sources on the microbial structure and activity in the soybean rhizosphere Jelena Marinković, Dragana Miljaković, Branislava Tintor, Vuk Đorđević, Gorica Cvijanović, Vojin Đukić and Marjana Vasiljević
10.00-10.30	38	30 MANOJLOVIĆ	Secondary Metabolites and Isolation of Gyrophoric Acid from the Lichen Umbilicaria grisea
10.30-10.45	15min coffee break		
Section chair: Andjela RODIC			
10.45-11.15	39	30 GERASIMOV	The spread of SARS-CoV-2 in Russia and the evolution of the properties of the pathogen.
11.15-11.45	40	30 DJORDJEVIC	Nonlinear Dynamics of Generalized Bacterial Toxin-antitoxin Group and Implications for Antibiotic Resistance Magdalena Djordjevic, Bojana Ilic, Lidija Zivkovic, Hong-Yu Ou, Marko Djordjevic
11.45-12.15	41	30 RODIC	Testing a Mathematical Model of Endogenous Activation of Immune Response in Escherichia coli Andjela Rodic, Marko Tumbas, Jane Kondev, Magdalena Djordjevic, Marko Djordjevic
12.15-12.45	42	30 PANOV	Procedure for comparing the pharmacokinetic characteristics of related drugs with same active substance.
13.00-14.00	60min lunch break		
Section chair: Xuan SU			
14.15-14.45	43	30 CHAKRABORTY	Volumetric Analysis of Non-Enhancing Tumor region for Differentiating High Grade and Low grade Glioma using Random Forest Classifier (with
14.45-15.15	44	30 MEI Qi	Differential early diagnosis of benign versus malignant lung cancer using systematic pathway flux analysis of peripheral blood leukocytes
15.15-15.30	15min coffee break		
15.30-16.00	45	30 ZHANG Tingting	Genetic characteristics involving the PD-1/PD-L1/
16.00-16.30	46	30 SU Xuan	Beneficial clinical outcome of anti-PD-1 treatment for lung cancer patients with COVID-19 vaccination: CEMOS-002 study
16.30-17.00	47	30 GRIGORIEVA	Controlled Lotka-Volterra competition models in adaptive therapy of cancers

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Fri, Dec 8

(Central European Time)	no	speaker	Title of the talk
8.30-9.00	Registration		
9.00-9.30	48	30 HU Wei	Spatial topological analysis of sympathetic neurovascular characteristic of acupoints in Ren meridian using advanced tissue-clearing and nIR II imaging
9.30-10.00	49	30 WANG Yu	Hypothalamic GnRH-Tanycyte Plasticity in Polycystic Ovary Syndrome.
10.00-10.30	50	30 FENG Yi / MAU	A mathematical view of Chinese Medicine
10.30-10.45	15min coffee break		
10.45-11.15	51	30 VULOVIĆ	Applied augmented reality for stroke patients
11.15-11.45	52	30 CVETKOVIĆ	Analysis of Respiratory Muscle sEMG Signals during the Physiological Breakpoint of Breath-holding Saša Cvetković, Nataša Ž. Mišić, Mirko Ostojčić
11.45-12.00	53	15 XIE Sheng	An insight of vessels in the brain from the view of a neuroradiologist
12.00-12.30	54	30 YU Hongwei	Multi-delay Arterial Spin Labeling Magnetic Resonance Imaging of Cerebral Blood Flow Perfusion in Patients With Vertebrobasilar dolichoectasia
12.30-13.30	60min lunch break		
13.45-14.15	55	30 SABIROV	The Magnetic Encephalography Inverse problem with distributed sources
14.15-14.45	56	30 PRINCE	Investigation on Region Specific Alterations in Co
14.45-15.15	57	30 KAVATI	Investigation on Region Specific Alterations in Corpus Callosum MR Images for Differentiation of Mild Cognitive Impairment Subtypes Automated and Fast Assessment of Drivers Stress using Electrodermal Activity Signals and Bispectrum Maps
15.15-15.30	15min coffee break		
15.30-16.00	58	30 DÉLI	Exploring the Nature of Consciousness with Category Theory: Testing the Fermionic Mind Hypothesis
16.00-16.30	59	30 IBRAGIMOV	Nonlinear Mathematical Modeling of Natural Phenomena (with Ocean Data Analysis by DONG Huanhe
16.30-16.45	60	15 MAU	Transcontinental Collaboration in Health and Academic Medicine Across EurAsia meets UN Sustainable Development Goals
16.45-17.00	61	15 Closing Session	What's next: Outlook on 2024+