

## BIOKYBERNETIKA 2016

1<sup>st</sup> Russian-German Conference on *MultiScale BioMathematics – Coherent Modeling of Human Body System*

1<sup>st</sup> Russian-German “Young-Talent” Workshop on *Mathematical Bio-systems Modeling*

07-09 November 2016, Lomonosov Moscow State University,

Faculty of Computational Mathematics and Cybernetics

**Monday, November 7<sup>th</sup>, 2016**

<b>10:00 – 10:30</b>					<b>Registration</b>	
<b>10:30 – 11:00</b> <b>Opening</b>		J. Mau S. Mukhin	Prof (em), Heinrich Heine University Düsseldorf, Germany; Prof., Faculty of Computational Mathematics and Cybernetics, Lomonosov Moscow State University	<i>Welcome and Background: The roots and history of «Biokybernetik»</i>		
<b>Session I</b>					<b>Chair:</b>	
11:00 – 12:00 Lecture		J. Mau	Prof (em), Heinrich Heine University Düsseldorf, Germany	<i>Understanding human body as bioautomation</i>		
12:00 – 12:45 Lecture		Yu. Vassilevskii, S. Simakov, T. Gamilov	Acad., Prof., Institute of Numerical Mathematics of RAS, Moscow	<i>Computer modelling for endovascular surgery</i>		
<b>12:45 – 14:00 Lunch break</b>						
14:00 – 15:00 Invited Lecture		A. Michalski	Prof. , Trapeznikov Institute of Control Sciences of RAS, Moscow	<i>Mathematics for population health.</i>		
15:00 – 15:30		N. Babushkina	Trapeznikov Institute of Control Sciences of RAS, Moscow	<i>The results of the study of antitumoral viral vaccines based on mathematical model of vaccine therapy for experimental studies.</i>		YT W
<b>15:30 – 16:00 Tea Break Interaction</b>						
<b>Session II</b>					<b>Chair:</b>	
16:15 – 17:00 Invited Lecture		T. Dobroserdova	Institute of Numerical Mathematics of RAS, Moscow	<i>Coupling of 1D and 3D blood flow models.</i>		
17:00 – 17:30		A. Mozokhina	Faculty of Computational Mathematics and Cybernetics, Lomonosov Moscow State University	<i>Quasi-onedimensional view on the lymph flow</i>		YT W
<b>18:00 – 19:30 Get-together</b>						

Venue: 119991 Moscow, GSP-1, Leninskie Gory, Moscow State University, 2nd Educational Building, 5th Floor, Room 526A.

## BIOKYBERNETIKA 2016

1<sup>st</sup> Russian-German Conference on *MultiScale BioMathematics – Coherent Modeling of Human Body System*

1<sup>st</sup> Russian-German “Young-Talent” Workshop on *Mathematical Bio-systems Modeling*

07-09 November 2016, Lomonosov Moscow State University,

**Tuesday, November 8<sup>th</sup>, 2016**

<b>Session III Chair:</b>				
10:00 – 10.45	S. Bogomolov	Prof., Faculty of Computational Mathematics and Cybernetics, Lomonosov Moscow State University	Method of particles in micro and macro models	
10:45 – 11:15	V. Ustinov	Faculty of Computational Mathematics and Cybernetics, Lomonosov Moscow State University	Inverse problem of cells' shape deformability distribution reconstruction using laser diffraction data	YT W
<b>11:15 – 11:30 Coffee Refreshment</b>				
11:30 – 12.30 Invited Lecture	G. Pongratz	Prof., Hiller Research Center, University Hospital Düsseldorf, Germany	Interplay between autonomous nervous system and hormones in inflammation.	
12:30 – 13:30 Invited Lecture	V. Volpert	Prof., Centre National de la Recherche Scientifique and University Lyon 1, France	Reaction-diffusion equations in biological applications	
<b>13:30 – 14:30 Lunch break</b>				
<b>Session IV Chair:</b>				
14:30 – 15:30 Invited Lecture	Chen H.-F.	Acad., Prof., Institute of Systems Science, Academy of Mathematics and Systems Sciences of CAS, Beijing	Recursive system identification.	
<b>15:30 – 15:45 Coffee Refreshment</b>				
15:45 – 16:30 Invited Lecture	A. Churilov	Prof., Faculty of Mathematics and Mechanics, Saint Petersburg State University, Saint Petersburg	Impulsive Goodwin oscillator in hormonal regulation of testosterone.	
16:30 – 17:15 Invited Lecture	Zhao W.-X.	Key Laboratory of Systems and Control, Academy of Mathematics and Systems Sciences of CAS, Beijing	Recursive identification of nonparametric nonlinear systems with binary-valued output observations.	
<b>17:15 – 17:30 Tea Break Interaction</b>				
<b>Session V Chair:</b>				
17:30 – 18:00	M. Ustinin	Prof, deputy advisor of Institute of Mathematical Problems in Biology RAS, Moscow	Functional structure of the human body reconstructed from the multichannel magnetic measurements	
18:00 – 18:30	D. Yamalova	Faculty of Mathematics and Mechanics, Saint Petersburg State University, Saint Petersburg	Hybrid observers for an impulsive model of testosterone regulation.	YT W

## BIOKYBERNETIKA 2016

1<sup>st</sup> Russian-German Conference on *MultiScale BioMathematics – Coherent Modeling of Human Body System*

1<sup>st</sup> Russian-German “Young-Talent” Workshop on *Mathematical Bio-systems Modeling*

07-09 November 2016, Lomonosov Moscow State University,

**Wednesday, November 9<sup>th</sup>, 2016**

<b>Session VI</b> Chair:				
10:30 - 11:30 Invited Lecture	N. Vasilyeva	Dokuchaev Soil Science Institute, a Federal State Budget Scientific Institute, Moscow	<i>Modelling microbiologically-driven soil structure formation from a human-environment perspective</i>	
11:30 – 12:15 Invited Lecture	B. Chetverushkin	Acad. RAS, Scientific adviser of Keldysh Institute of Applied Mathematics of RAS, Moscow	<i>Parallel computing in applied problems</i>	
12:15 – 13.15 Invited Lecture	G. Bocharov	Institute of Numerical Mathematics of RAS, Moscow	<i>Mathematical modeling in immunology</i>	
<b>13:15 – 13:30 Coffee Refreshment</b>				
<b>Session VII</b> Chair:				
13:30-14:00	R. Seifullaev	Institute of Problems in Mechanical Engineering of RAS, Saint Petersburg	<i>Energy based control of bipedal walk.</i>	YT W
14:00-14:30	E. Kuzina	Trapeznikov Institute of Control Sciences of RAS, Moscow	<i>A method of approximation of the simulation curves describing the effectiveness of immune response to the administration of the antitumor viral vaccines using the mathematical model of vaccine therapy.</i>	YT W
<b>14:30 – 14:45 Coffee Refreshment</b>				
14:45-15:15	I. Kraus	Faculty of Physics, Lomonosov Moscow State University, Moscow	<i>Stochastic modeling of von-Willebrand factor dynamics in the bloodstream</i>	YT W
15:15-15:45	N. Gudimchuk	Center for Theoretical Problems of Physico-chemical Pharmacology, Russian Academy of Sciences, Moscow, Russia	<i>Modeling microtubule dynamic instability: from kinetic models to Brownian dynamics</i>	YT W
15:45-16:00 <b>Closing</b>	J. Mau S. Mukhin	Prof (em), Heinrich Heine University Düsseldorf, Germany; Prof., Faculty of Computational Mathematics and Cybernetics, Lomonosov Moscow State University	<i>Summary, Outlook and Farewell</i>	