BIOKYBERNETIKA 2017

4th Annual "Arbeitstreffen" of German Initiative Biokybernetik "Patho-Biokybernetik - Disorders of MultiScale Controls in Complex Diseases"
Convenor: J. Mau (Heinrich Heine University Düsseldorf)
and
2nd Russo-German Conference "MultiScale BioMathematics - Coherent Modeling of Human Body System"
Convenors: S. I. Mukhin (Lomonosov Moscow State University), J. Mau (Heinrich Heine University Düsseldorf)

11-12 December 2017, TRYP Duesseldorf Krefeld, Europapark A1, Krefeld-Fichtenhain, Germany

Tentative Flow of Talks

SESSION ON BEHAVIORAL CONTROL

Tatyana MOISEEVA, Institute for Control of Complex Systems of Russian Academy of Sciences (ICCS RAS), Samara, Russia.
Evergetics: Orientation on persons and their values.

Gabriele ALTARE, XCMG Europe Research Center, Krefeld-Fichtenhain
TBA (tentative: "'Behavior' of operated machines")

Theodor KALVERAM, Darmstadt University of Technology, Darmstadt, Germany.
'Self'-'Other' differentiation - a prerequisite for 'human'-'robot' cooperation? A contribution to behavioral cybernetics.

Caspar KRAMPE, School of Economics, Chair of Business Management, in particular Marketing, Heinrich Heine University, Duesseldorf, Germany.
Human behavior on markets - Insight from 'shopper neuroscience'.

Michael BEHRINGER, Institute of Sports Sciences, Goethe University, Francfort-on-Main, Germany.
Limited energy supply or metabolite accumulation - what causes muscle fatigue?

SESSION ON GENETIC AND PHYSIOLOGICAL CONTROLS

Gennady BOCHAROV, Institute of Numerical Mathematics RAS, Moscow, Russia.
Mathematical modelling of the immune processes.

Dmitry FEDOSOV, Institute of Complex Systems (ICS-2), Research Center Juelich, Germany.
Modelling blood flow.

Chuong NGO NGUYEN, Helmholtz Institute for Biomedical Engineering, Chair of Medical Information Technology, RWTH Aachen, Germany.
Object-oriented cardiorespiratory modeling.

Jian LI, Institute for Medical Informatics, Biometry and Epidemiology (IBE), Ludwig-Maximilians University, Munich, Germany.
Computational modeling of methionine cycle-based metabolism and DNA methylation and the implications for anti-cancer drug response prediction.

Prof. Dr. J. Mau, Buschstr. 9, 47800 Krefeld, Fon: 02151-5129675, Fax: 02151-5129676, e-Mail: iqmeth@t-online.de

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Johannes DIETRICH, Medical Hospital I, Bergmannsheil University Hospital of Ruhr University Bochum, Bochum, Germany.
The concept of allostasis: A new paradigm at the frontier between health and disease.

SESSION ON METHODOLOGY OF MODELLING AND DATA ANALYSIS

Alexander CHURILOV, Department of Theoretical Cybernetics, Faculty of Mathematics and Mechanics, Saint Petersburg State University, Saint Petersburg, Russia.
Pulse modulation and its applicability to biological and medical models.

Nicole RADDE, Institute of Systems Theory and Automatic Control (IST), Stuttgart University, Stuttgart, Germany.
From heterogeneous data of biological systems to quantitative predictive models.

Stefan WAGENPFEIL, Institute of Medical Biometry, Epidemiology and Medical Informatics, Saarland University Hospital, Homburg-on-Saar, Germany
Parameter estimation considering uncertainty in model selection.

SESSION ON PATHO-BIOKYBERNETIK

A Tutorial on Analysis of Complex Diseases:

Guanyu WANG, School of Biology, South China University of Science and Technology, Shenzhen, China.
Disorders of Multi-scale Control.

An Example of Disorder of Multi-scale Control under Impact from Person's Surroundings, a case for "Patho-Biokybernetik":

Olga PANINA, Obstetrics and Gynaecology Department, Faculty of Basic Medicine, Lomonosov Moscow State University, Moscow, Russia.
Female Reproduction Failure: Biological, social and management factors.

An Interpretation of Multi-Scale Controls as Computational Physiology:

Sergey BOGOMOLOV, Faculty of Computational Mathematics and Cybernetics, Lomonosov Moscow State University, Moscow, Russia.
From micro to macro. Computational point of view.

Multi-Scale Functional Interaction:

Jochen MAU, Heinrich Heine University School of Medicine, Duesseldorf, Germany
From macro to micro: A mathematical formulation for the holistic concept of branching functionality.

Diagnostic Mathematics for Disorders of Energy Transfer Dynamics:

Igor YADYKIN, Institute of Control Science RAS, Moscow, Russia.
On the usage of energy functionals for the detection of the anomalies in the energy balance of human body organs.