

Program

17th International Workshop on Nonlinear Dynamics of Electronic Systems



**Rapperswil, Switzerland
June 21-24, 2009**

WELCOME TO NDES 2009 IN RAPPERSWIL, LAKE OF ZURICH!

Dear friends (and this is why many of you have come to this event: to see dear friends), despite the obvious difficulties encountered for such an endeavour during those times, where travel money is hard to get and when economical constraints enhance narrowminded thinking, we are glad - and proud of all of us - that this event is nonetheless possible. We are proud of the people that asked for very little to come here (in particular the invited speakers who contributed more than was imaginable to the event), as well as the modesty and kindness of the people we dealt with while preparing the workshop.

This attitude does not fall out the sky. It has its roots in the people that gave the shape to this workshop, continued to lead it softly from the very beginning to now - we all know their names. In this way, NDES had grown to become our favorite workshop, although some of the topics pursued in the earlier days were rather peripheral and sometimes even strange to some of the pioneers of NDES. It was wonderful to see how they simply accepted our strangeness. In recent years, we have observed a general convergence of topics and methods, showing that we were not so diverse, even in the beginning. This is the second time NDES takes place in Switzerland. The present location is again at a crossroad: Rapperswil is located at the 'Jakobsweg' ('route of St. James'), leading from the south of Germany, crossing Switzerland and France, down to Santiago de Compostela north to Portugal. Countable, but many, pilgrims on their way to the tomb of St. James in Santiago de Compostela, to the tomb of St. Peter in Rome, or to Jerusalem in the Holy Land, passed by Rapperswil, making a rest on their travel, half-way between two famous monasteries, that of St. Gallen to the north and that of Einsiedeln to the south. The pilgrims' path rests on ancient ground, in the neighborhood of the conference location. Just outside of the campus of HSR, there is a sunken village from early bronze age (around 1600 B.C.) that was surrounded by five rings of wooden palisades. In Hurden, just across the wooden bridge, are the reminders of a neolithic settlement, where, among many other things, a dagger made of silex of western French origin was found, indicating what a crossroad Rapperswil was, even during those times.

Being a catholic stronghold within a mostly protestant surrounding, Rapperswil challenged for centuries the dominance of the city of Zurich, which was, despite several (poorly planned) military attempts, never able to conquer the place (indeed, Zurich had a navy those days!). It seems to us that the typical NDES conference addict shares the mild stubbornness, but also the open heartedness and the sense for good parties that is characteristic for the typical people of this landscape.

It is due to their generosity that we can welcome you as our guests here for this conference. We owe our thanks to the management of the Technical University of Rapperswil for so warmly and generously welcoming us. The National Science Foundation of Switzerland (SNF) generously supported a large number of young scientists from eastern Europe and IEEE substantially contributed to the event as well. We also received support from the Technical University of Applied Sciences Wädenswil, Zurich, and from the Sonova/Phonak Company, a major hearing aid manufacturer with whom we have been collaborating over many years. Last but not least, we thank the Appenzeller Bier company for making the breaks so enjoyable.

It remains for us to hope that you'll find the event as great as we have planned it to be. We hope very much that you will enjoy your stay as much as we enjoy you being here with us.

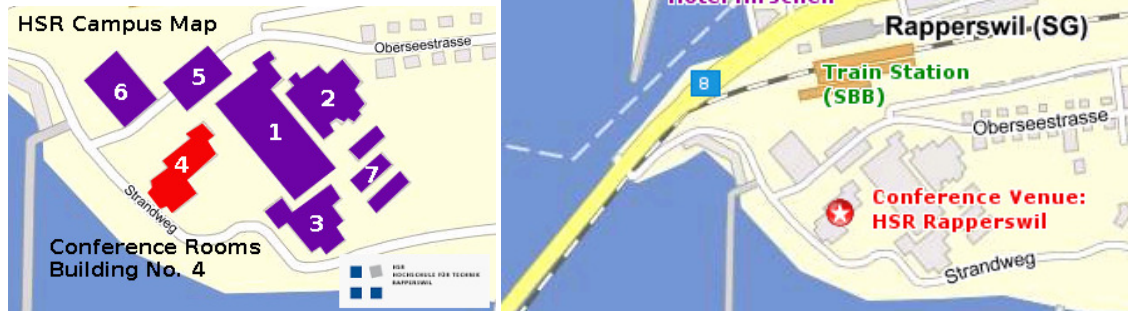
Ruedi Stoop and Josef Joller,

on behalf of the NDES Organization Committee

Conference Venue:

HSR Hochschule für Technik Rapperswil Building No. 4

Oberseestrasse 10,
CH-8640 Rapperswil



Banquet Place:

Restaurant Rathaus Rapperswil Hauptplatz 1 CH-8640 Rapperswil-Jona



NDES 2009 Program Schedule

	21. 06. 09 (Sunday)	22. 06. 09 (Monday)	23. 06. 09 (Tuesday)	24. 06. 09 (Wednesday)		
	8:15-8:30	Welcome Note				
	8:30-9:00	Speaker 1: L. de Arcangelis	Speaker 6: J.Kurths	Speaker 8: J. Schmidhuber		
	9:00-9:10	Break		Break		
	9:10-10:30	Session 1 Dynamical System Theory	Session 2 Communication & Algorithms	Session 7 NonlinearDynamics in Electronics-I		
			Session 8 Time-Series Analysis	Session 11 NonlinearDynamics in Biology-II		
	10:30-11:00	Coffee Break		Coffee Break		
	11:00-11:30	Speaker 2: B.P. Bezruchko	Speaker 7: Y. Nishio	Speaker 9: T. Shinbrot		
	11:30-11:40	Break		Break		
	11:40-13:00	Session 3 Circuits & Systems	Session 4 Artificial Intelligence	Session 9 NonlinearDynamics in Electronics-II		
			Session 10 NonlinearDynamics in Biology-I	Session 13 Synchronization-I		
	13:00-14:15	Lunch		Lunch		
	14:15-14:45	Speaker 3: J.M. Bilbault	Social Event followed by Banquet Meeting time: 14:00 in Front of Building 4, HSR Rapperswil 18:00 Banquet at Restaurant Rathaus Rapperswil			
	14:45-14:55	Break				
	14:55-16:15	Session 5 Oscillator Networks			Session 6 Nonlinear Signal Processing	Session 14 Real-World Applications
	16:15-16:45	Coffee Break			Session 15 Synchronization-II	
	16:45-17:15	Speaker 4: L. Bunimovich			Coffee Break	
	17:15-17:45	Speaker 5: U. Feudel	Speaker 11: S. Stramaglia			
	18:00	Welcome Reception!!	18:30	Speaker 12: H. Herrmann		
		Dinner				

Registration Desk
HSR Rapperswil
Building 4

Sunday (21. 06. 09)	17:00-18:00
Monday (22. 06. 09)	7:45-8:15, 10:30-11:00, 16:10-16:40
Tuesday (23. 06. 09)	8:00-8:30
Wednesday (24. 06. 09)	8:00-8:30

NDES 2009 Technical Program

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22 June, 2009 (Monday)

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Welcome Note

Date: 22 June, 2009 (Monday) 8:15-8:30

Room: Main auditorium,

Ruedi Stoop (*University and ETH Zurich*) and **Josef Joller** (*HSR Rapperswil*)

Invited Talk 1

Date: 22 June, 2009 (Monday) 8:30-9:00

Room: Main auditorium

Chair: Josef Joller (*HSR Rapperswil*)

Speaker: **Lucilla de Arcangelis** (*ETH Zurich*)

Title: **Scaling and Temporal Organization of Neuronal Avalanches**

Session 1: Dynamical System Theory

Date: 22 June, 2009 (Monday) 9:10-10:30

Room: Room A

Chair: Hans Herrmann (*ETH Zurich*)

- 9:10 **Differential Geometry Applied to Dynamical Systems**
Jean-Marc Ginoux (*Institute Universitaire Technologique de Toulon*), Bruno Rossetto (*Institute Universitaire Technologique de Toulon*)
- 9:30 **Studies of the Behavior of Nonlinear Oscillators using Concepts from Nonequilibrium Statistical Mechanics**
Tina Thiessen (*Leibniz University of Hannover*), Wolfgang Mathis (*Leibniz University of Hannover*)
- 9:50 **The Density Classification Problem**
Martin Schüle (*University and ETH Zurich*), Ruedi Stoop (*University and ETH Zurich*)
- 10:10 **Noise-Induced Bifurcations and CR-like Effect by the Example of Synthetic Gene Oscillator**
Anna Zakharova (*University of Potsdam*), Jürgen Kurths (*Potsdam Institute for Climate Impact Research*), Tatyana Vadivasova (*Saratov State University*), Vadim Anishchenko (*Saratov State University*)

Session 2: Communication and Algorithms

Date: 22 June, 2009 (Monday) 9:10-10:30

Room: Room B

Chair: Christina Kelber (*University of Applied Sciences Dresden*)

- 9:10 **Multichannel Communication using Reconstruction and Discrete Wavelets**
Alexey N. Pavlov (*Saratov State University*), Sergey V. Astakhov (*Saratov State University*), Vadim S. Anishchenko (*Saratov State University*)
- 9:30 **Application of Q-Routing with Parameter Control to Dynamic Network Environments**
Shunsuke Araki (*Tokyo Denki University*), Masaharu Adachi (*Tokyo Denki University*)
- 9:50 **Anisotropic and Nonlinear Diffusion Process for Noise Filtering**
Saverio Morfu (*University of Bourgogne*)
- 10:10 **Parallel Software for Modeling Complex Dynamics of Large Neuronal Networks**
Roman Levchenko (*National Taras Shevchenko University of Kyiv*), Olexander Sudakov (*National Taras Shevchenko University of Kyiv*), Yuri Maistrenko (*National Academy of Sciences of Ukraine*)

Invited Talk 2

Date: 22 June, 2009 (Monday) 11:00-11:30

Room: Main auditorium

Chair: Wolfgang Schwarz (*Technical University Dresden*)

Speaker: **Boris P. Bezruchko** (*Saratov State University*)

Title: **Revealing Nonlinear Couplings Between Oscillators From Time Series**

Session 3: Circuits and Systems

Date: 22 June, 2009 (Monday) 11:40-13:00

Room: Room A

Chair: Wolfgang Schwarz (*Technical University Dresden*)

- 11:40 **Behavioural Modelling of Microwave Electronic Devices Including Efficiently Slow- and Fast-Memory Effects**
 Dominique Schreurs (*Katholieke Universiteit Leuven*)
- 12:00 **Nonlinear Dynamics and Wideband Chaotic Generation in Microwave Oscillator Based on Electron Beam with Virtual Cathode**
 S.A. Kurkin (*Saratov State University*), A.E. Hramov (*Saratov State University*), A.A. Koronovskii (*Saratov State University*)
- 12:20 **Bifurcation Phenomena Observed in a Switched Dynamical System with PWM-1 Control**
 Shingo Tomonaga (*Oita University*), Masafumi Tsuji (*Oita University*), Takuji Kousaka (*Oita University*)
- 12.40 **Switching Phase States in Two van der Pol Oscillators Coupled by Stochastically Time-Varying Resistor**
 Yoko Uwate (*University and ETH Zurich*), Yoshifumi Nishio (*Tokushima University*), Ruedi Stoop (*University and ETH Zurich*)

Session 4: Artificial Intelligence

Date: 22 June, 2009 (Monday) 11:40-13:00

Room: Room B

Chair: Sebastiano Stramaglia (*Istituto Nazionale di Fisica Nucleare Bari*)

- 11:40 **Semi-Supervised Classification with Single-Layer Isingtrons**
 Thomas Ott (*Zurich University of Applied Sciences*), Urs Mürset (*Zurich University of Applied Sciences*)
- 12:00 **Multiple Task Learning in Recurrent Neural Networks using Layered Reservoirs**
 Ali Ajdari Rad (*EPF Lausanne*), Mahdi Jalili (*Sharif University of Technology*), Martin Hasler (*EPF Lausanne*)
- 12:20 **An Analysis of Dynamical Associative Memory using a Nonlinear Support Vector Machine**
 Akinori Kato (*Tokyo Denki University*), Masaharu Adachi (*Tokyo Denki University*)

Invited Talk 3

Date: 22 June, 2009 (Monday) 14:15-14:45

Room: Main auditorium

Chair: Martin Hasler (*EPF Lausanne*)

Speaker: **Jean-Marie Bilbault** (*University of Bourgogne*)

Title: **Experimental Study of Information Transfer in Electrical Neuron**

Session 5: Oscillator Networks

Date: 22 June, 2009 (Monday) 14:55-16:15

Room: Room A

Chair: Martin Hasler (*EPF Lausanne*)

- 14:50 [Synchronization in Synaptically Coupled Neurons with Small-World Structure](#)
Hiroyuki Kitajima (*Kagawa University*)
- 15:10 [Impact of Discreteness on Hyperchaos in the Kuramoto Model](#)
A.A.Vasylenko (*National Academy of Sciences of Ukraine*), V.L. Maistrenko (*National Academy of Sciences of Ukraine*), Yu.L. Maistrenko (*National Academy of Sciences of Ukraine*)
- 15:30 [Oscillation Death Dominance in Coupled Detuned Oscillators](#)
A. Koseska (*University of Potsdam*), E. Volkov (*Lebedev Physical Institute*), J. Kurths (*Potsdam Institute for Climate Impact Research*)
- 15:50 [Wave Dynamics of Oscillatory Ensembles under the Influence of Passive Elements](#)
Valentin Petrov (*Nizhny Novgorod State University*), Grigory Osipov (*Nizhny Novgorod State University*), Johan A.K. Suykens (*Catholic University of Leuven*)

Session 6: Nonlinear Signal Processing

Date: 22 June, 2009 (Monday) 14:55-16:15

Room: Room B

Chair: Masaharu Adachi (*Tokyo Denki University*)

- 14:50 [Conditions for Signal Equalization in Cerebellar-type Modules](#)
Witali L. Duin-Barkowski (*Russian Academy of Sciences*)
- 15:10 [Application of High Dynamic Range Imaging to the Digitalization of Substandard Film](#)
Kristina Kelber (*University of Applied Sciences Dresden*), Tobias Schneider (*University of Applied Sciences Dresden*), Nils Wabnik (*University of Applied Sciences Dresden*)
- 15:30 [Nonlinear Analysis of Data-Dependent Jitter on Transmission Line with Inter-Symbol Interference](#)
Koji Fukuda (*Hitachi, Ltd.*), Goichi Ono (*Hitachi, Ltd.*), Hiroki Yamashita (*Hitachi, Ltd.*)
- 15:50 [Digital Information Transmission Between Neuron-like Elements](#)
Alexander Dmitriev (*Russian Academy of Sciences*), Anton Ryzhov (*Russian Academy of Sciences*)

Invited Talk 4

Date: 22 June, 2009 (Monday) 16:45-17:15

Room: Main auditorium

Chair: Tohru Ikeguchi (*Saitama University*)

Speaker: **Leonid Bunimovich** (*Georgia Tech*)

Title: **Quasi-Isospectral Reduction of Networks**

Invited Talk 5

Date: 22 June, 2009 (Monday) 17:14-17:45

Room: Main auditorium

Chair: Tohru Ikeguchi (*Saitama University*)

Speaker: **Ulrike Feudel** (*University of Oldenburg*)

Title: **Spatio-Temporal Patterns in Reaction-Advection-Diffusion Models Describing Marine Systems**

23 June, 2009 (Tuesday)

Invited Talk 6

Date: 23 June, 2009 (Tuesday) 8:30-9:00

Room: Main auditorium

Chair: Yoshihiko Horio (*Tokyo Denki University*)

Speaker: **Jürgen Kurths** (*Potsdam Institute for Climate Impact Research*)

Title: **Dynamics on Complex Networks with Time Varying Topology – from Brain to Climate**

Session 7: Nonlinear Dynamics in Electronics-I

Date: 23 June, 2009 (Tuesday) 9:10-10:30

Room: Room A

Chair: Yoshihiko Horio (*Tokyo Denki University*)

- 9:10 **Chaotic Duffing Type Oscillator with Inertial Damping**
 Arunas Tamasevicius (*Vilnius University*), Gytis Mykolaitis (*Vilnius University*), Raimundas Kirvaitis (*Vilnius Gediminas Technical University*), Elena Tamaseviciute (*Vilnius University*), Skaidra Bumeliene (*Vilnius University*), Erik Lindberg (*Technical University of Denmark*)
- 9:30 **A Nonlinear Electronic Circuit Exhibiting Coherence Resonance**
 G. Lassere (*University of Bourgogne*), S. Morfu (*University of Bourgogne*), P. Marquie (*University of Bourgogne*)
- 9:50 **Noise-Induced Phase Synchronization Among Analog Oscillator Circuits: Experimental Results with Discrete MOS Devices**
 Akira Utagawa (*Hokkaido University*), Tetsuya Asai (*Hokkaido University*), Yoshihito Amemiya (*Hokkaido University*)
- 10:10 **Experimental Analysis of the Bifurcation Mechanism of Synchronization of a Resonant Limit Cycle on a Torus**
 Alexey V. Feoktistov (*Saratov State University*), Sergey V. Astakhov (*Saratov State University*), Vadim S. Anishchenko (*Saratov State University*)

Session 8: Time-Series Analysis

Date: 23 June, 2009 (Tuesday) 9:10-10:30

Room: Room B

Chair: Hiroyuki Kitajima (*Kagawa University*)

- 9:10 **Analysis and Automatic Identification of Sleep Spindles and Spike-wave Discharges in the EEG using Continuous Wavelet Transform**
 A.A. Ovchinnikov (*Saratov State University*), A.E. Hramov (*Saratov State University*), E.Yu. Sitnikova (*Russian Academy of Sciences*), A.A. Koronovskii (*Saratov State University*), G. Van Luijtelaar (*Radboud University Nijmegen*)
- 9:30 **Model-based Analysis of Fetal-maternal Heart Rate Synchronization**
 Maik Riedl (*University of Potsdam*), Peter van Leeuwen (*University of Witten/Herdecke*), Juergen Kurths (*Potsdam Institute for Climate Impact Research*), Niels Wessel (*Humboldt University of Berlin*)
- 9:50 **Long-term Prediction of Noisy Chaotic Time-series**
 Tohru Ikeguchi (*ERATO, JST/Saitama University*), Keisuke Narisawa (*Saitama University*), Kazuyuki Aihara (*ERATO, JST/The University of Tokyo*)
- 10:10 **Characterization of Long-term Effect of Couplings from Data**
 Dmitry A. Smirnov (*Russian Academy of Sciences*), Igor I. Mikhov (*Russian Academy of Sciences*)

Invited Talk 7

Date: 23 June, 2009 (Tuesday) 11:00-11:30

Room: Main auditorium

Chair: Erik Lindberg (*Technical University of Denmark*)

Speaker: **Yoshifumi Nishio** (*Tokushima University*)

Title: **Complex Phenomena in Coupled Nonlinear Electronic Circuits**

Session 9: Nonlinear Dynamics in Electronics-II

Date: 23 June, 2009 (Tuesday) 11:40-13:00

Room: Room A

Chair: Erik Lindberg (*Technical University of Denmark*)

11:40 **Novel Multi-Hysteresis VCCS Multi-Scroll Chaotic Oscillators**

Kenya Jin'no (*ERATO, JST/Nippon Institute of Technology*), Yoshihiko Horio (*ERATO, JST/Tokyo Denki University*), Ryosuke Domae (*Tokyo Denki University*), Kazuyuki Aihara (*ERATO, JST/The University of Tokyo*)

12:00 **Electronic Analog of the FitzHugh-Nagumo Neuron Model and Noninvasive Control of its Steady State**

Elena Tamaseviciute (*Vilnius University*), Arunas Tamasevicius (*Vilnius University*), Gytis Mykolaitis (*Vilnius University*), Skaidra Bumeliene (*Vilnius University*), Raimundas Kirvaitis (*Vilnius Gediminas Technical University*), Ruedi Stoop (*University and ETH Zurich*)

12:20 **FPAA Implementation of Nonautonomous MLC Circuit**

Recai Kilic (*Erciyes University*), Fatma Yildirim Dalkiran (*Erciyes University*)

12:40 **Effect of Switching Delay in an Interrupted Electric Circuit**

Hiroyuki Asahara (*Oita University*), Takuji Kousaka (*Oita University*)

Session 10: Nonlinear Dynamics in Biology-I

Date: 23 June, 2009 (Tuesday) 11:40-13:00

Room: Room B

Chair: Leonid Bunimovich (*Georgia Tech*)

11:40 **Electrochemical Patterns on the Surface of Chara Cells as an Example of Spatio-Temporal Patterns in Reaction-Diffusion-Convection Systems**

Andrey A. Polezhaev (*P.N.Lebedev Physical Institute*)

12:00 **Animal Courtship from the Complex Systems Point of View**

Ruedi Stoop (*University and ETH Zurich*), Patrick Nueesch (*University and ETH Zurich*), Tom Jasa (*University and ETH Zurich*), Josef Joller (*HSR Rapperswil*)

12:20 **Transient Dynamics in the Network of Hodgkin-Huxley Neurons**

Grigory Osipov (*Nizhny Novgorod University*), Maxim Komarov (*Nizhny Novgorod University*), Johan Suykens (*Catholic University of Leuven*)

12:40 **New Methods of Suppression of the Spiral Wave Activity in Cardiac Tissue**

Aleksander Loskutov (*Moscow State University*), Semen Vysotskiy (*Moscow State University*), Stefano Boccaletti (*Institute of Complex Systems*)

24 June, 2009 (Wednesday)

Invited Talk 8

Date: 24 June, 2009 (Wednesday) 8:30-9:00

Room: Main auditorium

Chair: Stephane Binczak (*University of Bourgogne*)

Speaker: **Jürgen Schmidhuber** (*IDSIA Lugano*)

Title: **Driven by Compression Progress: A Simple Principle Explains Essential Aspects of Subjective Beauty, Novelty, Surprise, Interestingness, Attention, Curiosity, Creativity, Art, Science, Music, Jokes**

Session 11: Nonlinear Dynamics in Biology-II

Date: 24 June, 2009 (Wednesday) 9:10-10:30

Room: Room A

Chair: Stephane Binczak (*University of Bourgogne*)

- 9:10 **Emergence of Slow Rhythms in Neural Microcircuit: Bifurcations and Stability**
M.A. Komarov (*Nizhny Novgorod University*), G.V. Osipov (*Nizhny Novgorod University*), J.A.K. Suykens (*Catholic University of Leuven*), M.I. Rabinovich (*University of California*)
- 9:30 **Cochlear Hopf-Nonlinearities and Pitch Perception**
Stefan Martignoli (*University and ETH Zurich*), Ruedi Stoop (*University and ETH Zurich*)
- 9:50 **Regular Spiking in FitzHugh-Nagumo Systems Coupled Through Linear Delay**
A. Panchuk (*National Academy of Sciences of Ukraine*), M. Dahlem (*Technical University of Berlin*), E. Schöll (*Technical University of Berlin*)
- 10:10 **Thermodynamic Spatiotemporal Analysis of Cultured Neural Networks Reveals Formation of Network Structures**
Andreas Zöttl (*University and ETH Zurich*), Ruedi Stoop (*University and ETH Zurich*)

Session 12:

Date: 24 June, 2009 (Wednesday) 9:10-10:30

Room: Room B

Chair:

Invited Talk 9

Date: 24 June, 2009 (Wednesday) 11:00-11:30

Room: Main auditorium

Chair: Jürgen Kurths (*Potsdam Institute for Climate Impact Research*)

Speaker: **Troy Shinbrot** (*Rutgers University*)

Title: **Why Decussate? - Topological Constraints on 3D Wiring**

Session 13: Synchronization-I

Date: 24 June, 2009 (Wednesday) 11:40-13:00

Room: Room A

Chair: Jürgen Kurths (*Potsdam Institute for Climate Impact Research*)

11:40 **Design of Coupling for Mixed Synchronization in Chaotic Oscillators**

S.K. Dana (*Indian Institute of Chemical Biology*), E. Padmanaban (*Indian Institute of Chemical Biology*), R. Banerjee (*Indian Institute of Chemical Biology*), P.K. Roy (*Presidency College*), I. Grosu (*University of Medicine and Pharmacy "Gr.T.Popa"*)

12:00 **Zero Lyapunov Exponent in the Vicinity of the Phase Synchronization Onset**

Alexander E. Hramov (*Saratov State University*), Alexey A. Koronovskii (*Saratov State University*), Maria K. Kurovskaya (*Saratov State University*)

12:20 **Synchronization of Semiconductor Lasers with Delays in Coupling**

Alexandra Landsman (*James Madison University*)

12:40 **Frequency Synchronization in a Random Oscillator Network**

Galyna Kriukova (*National Taras Shevchenko University of Kyiv*), Martin Hasler (*EPF Lausanne*)

Session 14: Real-World Applications

Date: 24 June, 2009 (Wednesday) 11:40-13:00

Room: Room B

Chair: Dimitri Smirnov (*Russian Academy of Sciences*)

11:40 **A Spin-Based Measure of the Coherence of Belief-Systems**

Markus Christen (*University of Zurich*) T. Starostina (*Zurich University of Applied Sciences*), D. Schwarz (*University of Berne*), Thomas Ott (*Zurich University of Applied Sciences*)

12:00 **Effectiveness of Simultaneous Mobile Robots Control System**

Yusuke Igarashi (*Sophia University*), Masatoshi Sato (*Sophia University*), Hisashi Aomori (*Sophia University*), Mamoru Tanaka (*Sophia University*)

12:20 **A Cellular Automata for Converting Object Shapes into Simple Polygons**

Yukinobu Makihara (*Hokkaido University*), Masayuki Ikebe (*Hokkaido University*), Junichi Motohisa (*Hokkaido University*)

12:40 **Coherence Resonance in a Threshold Based Uni-junction Transistor Relaxation Oscillator**

A.N. Sekar Iyengar (*Saha Institute of Nuclear Physics*), P.S. Bhattacharya (*Saha Institute of Nuclear Physics*), Md. Nurujjaman (*Saha Institute of Nuclear Physics*)

Invited Talk 10

Date: 24 June, 2009 (Wednesday) 14:15-14:45

Room: Main auditorium

Chair: Ruedi Stoop (*University and ETH Zurich*)

Speaker: **Willi-Hans Steeb** (*University of Johannesburg*)

Title: **Genetic Algorithms and Optimization Problems in Quantum Computing**

Session 15: Synchronization-II

Date: 24 June, 2009 (Wednesday) 14:45-16:15

Room: Room A

Chair: Evgeny Volkov (*Russian Academy of Sciences*)

14:50 **Master-Slave and Mutual Synchronization for Genesio-Tesi Systems**

Ioan Grosu (*University of Medicine and Pharmacy "Gr.T.Popa"*), Servilia Oancea (*University of Agricultural Sciences and Veterinary Medicine*)

15:10 **Effect of Noise on Generalized Synchronization of Chaos in Dissipatively Coupled Dynamical Systems**

Olga I. Moskalenko (*Saratov State University*), Alexander E. Hramov (*Saratov State University*), Alexey A. Koronovskii (*Saratov State University*), Alexey A. Ovchinnikov (*Saratov State University*)

15:30 **Weak Generalized Synchrony in Forced Excitable Systems**

Th. Umeshkanta Singh (*Jawaharlal Nehru University*), R. Ramaswamy (*Jawaharlal Nehru University*)

Invited Talk 11

Date: 24 June, 2009 (Wednesday) 16:45-17:15

Room: Main auditorium

Chair: Thomas Ott (*Zurich University of Applied Sciences*)

Speaker: **Sebastiano Stramaglia** (*Istituto Nazionale di Fisica Nucleare*)

Title: **Causal Approaches to the Inference of Dynamical Networks**

Invited Talk 12

Date: 24 June, 2009 (Wednesday) 17:20-17:50

Room: Main auditorium

Chair: Thomas Ott (*Zurich University of Applied Sciences*)

Presenter: **Hans Herrmann** (*ETH Zurich*)

Title: **Robust Networks**

Sponsors:

