



**EUROPEAN CONFERENCE ON COMPLEX SYSTEMS**  
**ECCS '06**  
 Saïd Business School  
 Oxford University  
 25-29 September 2006

**CONFERENCE PROGRAMME**

**Monday, 25 September 2006**

**MORNING SESSION 1**

Time	Location	Event
8:15 am onwards	Lobby	<b>Registration and Coffee</b>

Time	Location	Event
9:45 – 10:15 am	Nelson Mandela Lecture Theatre	Welcome <b>Felix Reed-Tsochas</b> (Programme Committee) <b>Ralph Dum</b> (European Commission)
10:15 – 11:05 am	Nelson Mandela Lecture Theatre	<i>Invited Plenary Speaker</i> <b>Rolf Pfeifer</b> 'Morphological Computation – Connecting Brain, Body, and Environment'
11:05 – 11:55 am	Nelson Mandela Lecture Theatre	<i>Invited Plenary Speaker</i> <b>Eric Goles</b> 'Cellular Automata as a Complex System Paradigm: Short-Cut Theorems and Complexity'
11:55 – 12:45 pm	Nelson Mandela Lecture Theatre	<i>Invited Plenary Speaker</i> <b>Matthias Kaiserswerth</b> 'Virtualization – Curse or Cure?'

Time	Location	Event
12:45 – 2:00 pm	Conference Marquee	<b>Lunch</b>

**AFTERNOON SESSION 1**

**Track I: Biology and Cognition**

Time	Location	Event
2:00 – 2:40 pm	Edmond Safra Lecture Theatre	Paper 185
2:40 – 3:20 pm	Edmond Safra Lecture Theatre	Paper 193
3:20 – 4:00 pm	Edmond Safra Lecture Theatre	Paper 85

**Track II: Concepts and Methods**

Time	Location	Event
2:00 – 2:40 pm	Lecture Theatre 4	Paper 34
2:40 – 3:20 pm	Lecture Theatre 4	Paper 166
3:20 – 4:00 pm	Lecture Theatre 4	Paper 70

**Track III: Networks**

Time	Location	Event
2:00 – 2:40 pm	Rhodes Trust Lecture Theatre	Paper 82
2:40 – 3:20 pm	Rhodes Trust Lecture Theatre	Paper 162
3:20 – 4:00 pm	Rhodes Trust Lecture Theatre	Paper 211

**Track IV: Social and Economic Systems**

Time	Location	Event
2:00 – 2:40 pm	Nelson Mandela Lecture Theatre	Paper 53
2:40 – 3:20 pm	Nelson Mandela Lecture Theatre	Paper 160
3:20 – 4:00 pm	Nelson Mandela Lecture Theatre	Paper 154

Time	Location	Event
4:00 – 4:30 pm	Conference Marquee	<b>Coffee Break</b>

## AFTERNOON SESSION 2

### Track I: Biology and Cognition

Time	Location	Event
4:30 – 4:50 pm	Edmond Safra Lecture Theatre	Paper 112
4:50 – 5:10 pm	Edmond Safra Lecture Theatre	Paper 191
5:30 – 5:50 pm	Edmond Safra Lecture Theatre	Paper 52

### Track II: Concepts and Methods

Time	Location	Event
4:30 – 4:50 pm	Lecture Theatre 4	Paper 72
4:50 – 5:10 pm	Lecture Theatre 4	Paper 181
5:10 – 5:30 pm	Lecture Theatre 4	Paper 24

### Track III: Networks

Time	Location	Event
4:30 – 4:50 pm	Rhodes Trust Lecture Theatre	Paper 18
4:50 – 5:10 pm	Rhodes Trust Lecture Theatre	Paper 42
5:10 – 5:30 pm	Rhodes Trust Lecture Theatre	Paper 40
5:30 – 5:50 pm	Rhodes Trust Lecture Theatre	Paper 179

### Track IV: Social and Economic Systems

Time	Location	Event
4:30 – 5:10 pm	Nelson Mandela Lecture Theatre	Paper 88
5:10 – 5:30 pm	Nelson Mandela Lecture Theatre	Paper 215
5:30 – 5:50 pm	Nelson Mandela Lecture Theatre	Paper 146
5:50 – 6:10 pm	Nelson Mandela Lecture Theatre	Paper 75
6:10 – 6:30 pm	Nelson Mandela Lecture Theatre	Paper 92

## EVENING POSTER SESSION 1

Time	Location	Event
6:00 – 7:30 pm	Conference Marquee	Poster Session 1

**Tuesday, 26 September 2006**

## MORNING SESSION 2

Time	Location	Event
9:00 – 9:50 am	Nelson Mandela Lecture Theatre	<i>Invited Plenary Speaker</i> <b>David Mumford</b> 'The Complexity of "Thought" – Two Fundamental Issues'
9:50 – 10:40 am	Nelson Mandela Lecture Theatre	<i>Invited Plenary Speaker</i> <b>Cris Moore</b> 'Phase Transitions in Physics and Computer Science – A Tale of Two Cultures'
10:40 – 11:00	Conference Marquee	Coffee Break
11:00 – 11:50 am	Nelson Mandela Lecture Theatre	<i>Invited Plenary Speaker</i> <b>Marcelo Viana</b> 'A Probabilistic View of Deterministic Dynamical Systems'
11:50 – 12:40 pm	Nelson Mandela Lecture Theatre	<i>Invited Plenary Speaker</i> <b>Henri Atlan</b> 'Self-Organising Systems: A Typology'

Time	Location	Event
12:40 – 2:00 pm	Conference Marquee	<b>Lunch</b>

### AFTERNOON SESSION 3

#### Track I: Biology and Cognition

Time	Location	Event
2:00 – 2:40 pm	Edmond Safra Lecture Theatre	Paper 108
2:40 – 3:20 pm	Edmond Safra Lecture Theatre	Paper 216
3:20 – 4:00 pm	Edmond Safra Lecture Theatre	Paper 218

#### Track II: Concepts and Methods

Time	Location	Event
2:00 – 2:40 pm	Lecture Theatre 4	Paper 102
2:40 – 3:20 pm	Lecture Theatre 4	Paper 101
3:20 – 4:00 pm	Lecture Theatre 4	Paper 202

#### Track III: Networks

Time	Location	Event
2:00 – 2:40 pm	Rhodes Trust Lecture Theatre	Paper 156
2:40 – 3:20 pm	Rhodes Trust Lecture Theatre	Paper 31
3:20 – 4:00 pm	Rhodes Trust Lecture Theatre	Paper 186

#### Track IV: Social and Economic Systems

Time	Location	Event
2:00 – 2:40 pm	Nelson Mandela Lecture Theatre	Paper 48
2:40 – 3:20 pm	Nelson Mandela Lecture Theatre	Paper 207
3:20 – 4:00 pm	Nelson Mandela Lecture Theatre	Paper 221

Time	Location	Event
4:00 – 4:30 pm	Conference Marquee	Coffee Break

### AFTERNOON SESSION 4

#### Track I: Biology and Cognition

Time	Location	Event
4:30 – 5:10 pm	Edmond Safra Lecture Theatre	Paper 114
5:10 – 5:50 pm	Edmond Safra Lecture Theatre	Paper 141

#### Track II: Concepts and Methods

Time	Location	Event
4:30 – 4:50 pm	Lecture Theatre 4	Paper 25
4:50 – 5:10 pm	Lecture Theatre 4	Paper 79
5:10 – 5:30 pm	Lecture Theatre 4	Paper 116

#### Track III: Networks

Time	Location	Event
4:30 – 4:50 pm	Rhodes Trust Lecture Theatre	Paper 124
4:50 – 5:10 pm	Rhodes Trust Lecture Theatre	Paper 105
5:10 – 5:30 pm	Rhodes Trust Lecture Theatre	Paper 61

#### Track IV: Social and Economic Systems

Time	Location	Event
4:30 – 5:10 pm	Nelson Mandela Lecture Theatre	Paper 140
5:10 – 5:30 pm	Nelson Mandela Lecture Theatre	Paper 134
5:30 – 5:50 pm	Nelson Mandela Lecture Theatre	Paper 113
5:50 – 6:10 pm	Nelson Mandela Lecture Theatre	Paper 19

### EVENING POSTER SESSION 2

Time	Location	Event
6:00 – 7:30 pm	Conference Marquee	Poster Session 2

**Wednesday, 27 September 2006**

**MORNING SESSION 3**

<b>Time</b>	<b>Location</b>	<b>Event</b>
9:00 – 9:50 am	Nelson Mandela Lecture Theatre	<i>Invited Plenary Speaker</i> <b>Alessandro Vespignani</b> 'Epidemic Spreading and Complex Networks'
9:50 – 10:40 am	Nelson Mandela Lecture Theatre	<i>Invited Plenary Speaker</i> <b>Dennis Bray</b> 'Bacterial Chemotaxis: Using Computer Models to Unravel Mechanism'
10:40 – 11:00	Conference Marquee	Coffee Break
11:00 – 11:50 am	Nelson Mandela Lecture Theatre	<i>Invited Plenary Speaker</i> <b>Holger Kantz</b> 'Extreme Events – A Challenge to the Understanding of Complex Dynamics'
11:50 – 12:40 pm	Nelson Mandela Lecture Theatre	<i>Invited Plenary Speaker</i> <b>Sander van der Leeuw</b> 'Complex Systems Modelling in the Anthropocene'

<b>Time</b>	<b>Location</b>	<b>Event</b>
12:40 – 2:00 pm	Conference Marquee	Lunch

**AFTERNOON SESSION 5**

**Track II: Concepts and Methods**

<b>Time</b>	<b>Location</b>	<b>Event</b>
2:00 – 2:40 pm	Lecture Theatre 4	Paper 180
2:40 – 3:20 pm	Lecture Theatre 4	Paper 203
3:20 – 3:40 pm	Lecture Theatre 4	Paper 103
3:40 – 4:00 pm	Lecture Theatre 4	Paper 119

**Track III: Networks**

<b>Time</b>	<b>Location</b>	<b>Event</b>
2:00 – 2:40 pm	Rhodes Trust Lecture Theatre	Paper 50
2:40 – 3:00 pm	Rhodes Trust Lecture Theatre	Paper 170
3:00 – 3:20 pm	Rhodes Trust Lecture Theatre	Paper 57
3:20 – 3:40 pm	Rhodes Trust Lecture Theatre	Paper 46
3:40 – 4:00 pm	Rhodes Trust Lecture Theatre	Paper 100

**Track IV: Social and Economic Systems**

<b>Time</b>	<b>Location</b>	<b>Event</b>
2:00 – 2:40 pm	Nelson Mandela Lecture Theatre	Paper 173
2:40 – 3:20 pm	Nelson Mandela Lecture Theatre	Paper 206
3:20 – 4:00 pm	Nelson Mandela Lecture Theatre	Paper 30

<b>Time</b>	<b>Location</b>	<b>Event</b>
4:00 – 4:30 pm	Conference Marquee	<b>Coffee Break</b>

## AFTERNOON SESSION 6

### Track II: Concepts and Methods

Time	Location	Event
4:30 – 4:50 pm	Lecture Theatre 4	Paper 126
4:50 – 5:10 pm	Lecture Theatre 4	Paper 135
5:10 – 5:30 pm	Lecture Theatre 4	Paper 164

### Track 4: Social and Economic Systems

Time	Location	Event
4:30 – 5:10 pm	Nelson Mandela Lecture Theatre	Paper 195
5:10 – 5:30 pm	Nelson Mandela Lecture Theatre	Paper 16
5:30 – 5:50 pm	Nelson Mandela Lecture Theatre	Paper 35
5:50 – 6:10 pm	Nelson Mandela Lecture Theatre	Paper 136

## CONFERENCE BANQUET

Time	Location	Event
7:30 pm	Christ Church, Oxford	Drinks
8:00 pm	Christ Church, Oxford	<b>Dinner</b>

## ECCS '06 ACCEPTED PAPERS

### Track I: Biology and Cognition

#### *LONG PAPERS*

#### **85 - From evolving software towards models of dynamically self-assembling processing systems**

Uwe Tangen

#### **108 - HUGO: A Cognitive Architecture with an Incorporated World Model**

Jiri Wiedermann

#### **114 - Hierarchies and modules in complex biological systems**

Ovidiu Radulescu, Alexander Gorban, Sergei Vakulenko, Andrei Zinovyev

#### **141 - Spectral analysis of gene expression profiles using gene networks**

Franck Rapaport, Andrei Zinovyev, Marie Dutreix, Emmanuel Barillot, Jean-Philippe Vert

#### **185 - Geometric Basis for Asymmetric Diffusion**

Norman Packard, Rob Shaw

#### **193 - Optimal Formulation of Complex Chemical Systems with a Genetic Algorithm**

Morgan Theis, Gianluca Gazzola, Michele Forlin, Martin Hanczyc, Mark Bedau

#### **216 - A simple model of cognitive processing in repeated games**

Kristian Lindgren, Anders Eriksson

#### **218 - The effect of finite population size on the evolutionary dynamics in multi-person Prisoner's Dilemma**

Anders Eriksson, Kristian Lindgren

#### *SHORT PAPERS*

#### **52 - Disease diversity and fluctuations in dynamic small world networks**

Ana Nunes, Tudor Nedelea, Marcos Simoes, Margarida Telo da Gama

#### **112 - Network Analysis of Biochemical Reactions in Complex Environments**

Elias August, Mauricio Barahona

#### **191 - Catalysis by Self-Assembled Structures in Emergent Reaction Networks**

Gianluca Gazzola, Andrew Buchanan, Norman Packard, Mark Bedau

### Track II: Concepts and Methods

#### *LONG PAPERS*

#### **34 - Complex system approach to language games**

Andrea Baronchelli, Emanuele Caglioti, Vittorio Loreto, Luc Steels

**70 - The Computational Complexity of Complex Systems: the Role of Topology and Functionality**

Gregory Provan

**101 - Quotient Manifold Projections and Hierarchical Dynamics**

Martin Nilsson Jacobi

**102 - Inferring Global Synchrony from Local Symbolic Dynamics**

Sarika Jalan, Fatihcan Atay, Juergen Jost

**166 - Coordinated Communication, a Dynamical Systems Perspective**

Bart De Vylder

**180 - Conceptual Representations: What do they have to say about the Density Classification Task by Cellular Automata?**

Manuel Marques, Ruli Manuring, Helen Pain

**202 - A unifying framework for complexity measures of finite systems**

Nihat Ay, Eckehard Olbrich, Nils Bertschinger, Jürgen Jost

**203 - Computational Complexity of Some Enumeration Problems in Uniformly Sparse Boolean Network Automata**

Predrag Tasic

*SHORT PAPERS*

**24 - A Complex Systems Approach in ATM Modelling**

Soufian Ben Amor, Marc Bui, Ivan Lavallee

**25 - A General Framework for Agent-based Modelling of Complex Systems**

Mike Holcombe, Simon Coakley, Rod Smallwood

**72 - Distributed control of collective motion of robots through mainly local interactions**

Arturo Buscarino, Luigi Fortuna, Mattia Frasca, Alessandro Rizzo

**79 - Introducing Complex Automata for Modelling Multi-Scale Complex Systems**

Alfons Hoekstra, Bastien Chopard, Pat Lawford, Rod Hose, Manfred Krafczyk, Joerg Bernsdorf

**103 - How to Cluster Evolving Graphs**

Marco Gaertler, Robert Görke, Dorothea Wagner, Silke Wagner

**116 - Abrupt Behaviour Changes in Cellular Automata under Asynchronous Dynamics**

Damien Regnault

**119 - Generating Significant Graph Clusterings**

Daniel Delling, Marco Gaertler, Dorothea Wagner

**126 - Small cluster statistics and Levy size distributions**

Oleg Bakunin

**135 - Stability of Attractor Cycles in Random Boolean Networks**

Steffen Schober

**164 - Random Numbers in Distributed Systems**

Heiko Bauke, Stephan Mertens

**181 - Detecting the Long-Range Dependence in the Internet Traffic with Packet Trains**

Peter Haga, Gabor Vattay

**Track 3: Networks**

*LONG PAPERS*

**31 - Decentralised control of material or traffic flows in networks**

Stefan Laemmer, Hiroshi Kori, Karsten Peters, Dirk Helbing

**50 - Defense Strategies against Network Worms: Formulation, Evaluation, and Comparison**

Zoran Nikoloski

**82 - Shape and efficiency in growing spatial distribution networks**

Michael Gastner

**156 - Exact Solutions for Models of Cultural Transmission and Network Rewiring**

Tim Evans, Douglas Plato

**162 - Weighted networks: Examples and characteristics**

János Kertész, Jukka-Pekka Onnela, Jari Saramaki, Kimmo Kaski

**186 - Self-organizing principles for material flow control in complex networks**

Karsten Peters, Dirk Helbing

**211 - Hypernetworks for reconstructing the dynamics of multilevel systems**

Jeffrey Johnson

*SHORT PAPERS*

**18 - Community Detection in Complex Networks using Genetic Algorithm**

Mursel Tasgin, Haluk Bingol

**40 - Highly Clustered Networks with Preferential Attachment to Close Nodes**

Matteo Dell'Amico

**42 - The Laplacian Spectrum of Complex Networks**

Almerima Jamakovic, Piet Van Mieghem

**46 - Self-Organized Criticality and Co-evolution of Network Structure and Dynamics**

Piotr Fronczak, Agata Fronczak, Janusz Holyst

**57 - Statistics of cycles in large networks**

Konstantin Klemm, Peter F. Stadler

**61 - Preferential attachment in the growth of social networks: the case of Wikipedia**

Andrea Capocci, Vito d.p. Servedio, Francesca Colaiori, Luciana S. Buriol, Debora Donato, Stefano Leonardi, Guido Caldarelli

**100 - Modeling Endogenous Social Networks: The Example of Emergence and Stability of Cooperation without Refusal**

David Chavalarias

**105 - The network structure and evolution of online communication**

Pietro Panzarasa, Tore Opsahl

**124 - Detecting rich-club ordering in complex networks**

Vittoria Colizza, Alessandro Flammini, M. Angeles Serrano, Alessandro Vespignani

**170 - Computing Clustering Coefficients in Data Streams**

Luciana Salete Buriol, Gereon Frahling, Stefano Leonardi, Alberto Marchetti-Spaccamela, Christian Sohler

**179 - The role of modularity and hierarchical structure in making complex networks stable**

Raj Kumar Pan, Sitabhra Sinha

**Track 4: Social and Economic Systems**

*LONG PAPERS*

**30 - Semiotic Dynamics in Online Social Communities**

Ciro Cattuto, Vittorio Loreto, Luciano Pietronero

**48 - Competitive advantage of geographical clusters: Complexity science and network theory approach**

Nunzia Carbonara, Ilaria Giannoccaro, Vito Albino

**53 - Credit Interlinkages and Bankruptcy Avalanches in a Network Economy**

Domenico Delli Gatti, Mauro Gallegati, Alberto Russo, Bruce Greenwald, Joseph E. Stiglitz

**88 - How Universities Think: The Hidden Work of a Complex Institution**

Susanne Lohmann

**140 - Physical And Relational Networks In The Aegean Bronze Age**

Tim Evans, Ray Rivers, Carl Knappett

**154 - The role of tie strengths in societal networks**

Jukka-Pekka Onnela, Jari Saramäki, Jörkki Hyvönen, Gabor Szabó, David Lazer, Kimmo Kaski, Janos Kertész, Albert-László Barabási

**160 - Impact of Trust on the Performance of a Recommendation System in a Social Network**

Stefano Battiston, Frank E. Walter, Frank Schweitzer

**173 - Modelling the future of cities**

Denise Pumain, Anne Bretagnolle, Benoît Glisse

**195 - Multi-assets artificial stock market with heterogeneous interacting agents**

Silvano Cincotti, Linda Ponta, Stefano Pastore

**206 - Binding Social and Semantic Networks**

Camille Roth

**207 - Matching and Network Effects**

Marcel Fafchamps, Marco van der Leij, Sanjeev Goyal

**221 - Emergent structures and dynamic processes in a distributed manufacturing network**

Serguei Saavedra, Felix Reed-Tsochas, Janet Efstathiou, Brian Uzzi

*SHORT PAPERS*

**16 - The Geography of Scientific Productivity: Scaling in U.S. Computer Science**

Rui Carvalho, Michael Batty

**19 - How to cheat BitTorrent and Why Nobody Does**

David Hales, Simon Patarin

**35 - Modelling an Innovative Industry with Agent-based Simulation**

Klaus Wersching

**75 - One in Four Is Enough – Strategies for Selecting Ego Mailboxes for a Group Network View**

Antonio Zilli, Francesca Grippa, Peter Gloor, Robert Laubacher

**92 - Emergence of Cooperation in a Network Environment Introducing Social Distance**

Hiroshi Kuraoka, Nobutada Fujii, Kanji Ueda

**113 - In Search of the Perfect Partnership**

David Smith, Neil Johnson, Ben Burnett, Thomas Cox

**134 - The effect of travel restrictions on the spread of a highly contagious disease**

Martin Camitz, Fredrik Liljeros

**136 - Open Source Production, Firm Size and Wealth Distribution: An agent based model approach**

Vijay Dakshinamoorthy

**146 - A First Order Language to Coevolve Agents in Complex Social Simulations**

Telmo Menezes, Ernesto Costa

**215 - Social and Economic Complexity: the co-evolution of Reality, Knowledge and Values**

Peter Allen, Liz Varga

## ECCS '06 ACCEPTED POSTERS

### Poster Session 1

#### **41 - Greedy Cheating Liars and the Fools Who Believe Them**

Stefano Arteconi, David Hales

#### **45 - Ferromagnetic fluid as a model of social impact**

Piotr Fronczak, Agata Fronczak, Janusz Holyst

#### **47 - Complexity Research at University of Central Florida**

Thomas Clarke, David Kaup, Brian Goldiez, Keith Garfield, Linda Malone, Rex Oleson, Randall Shumaker, Annie Wu, Adam Campbell

#### **49 - Mutual Information as a tool for Identifying Phase Transitions in Complex Systems**

Robert Wicks, Sandra Chapman, Richard Dendy

#### **51 - Emergent Socially Rational Utilitarianism in a Peer-to-Peer System**

Andrea Marcozzi, David Hales

#### **65 - Offdiagonal Complexity: A computationally quick complexity measure for graphs and networks**

Jens Christian Clausen

#### **69 - A Network Game with Attackers and a Defender: A Survey**

Marios Mavronicolas, Vicky Papadopoulou, Anna Philippou, Paul Spirakis

#### **71 - Coevolutionary dynamics: From finite to infinite populations**

Arne Traulsen, Jens Christian Clausen, Christoph Hauert

#### **73 - Markovian Dynamics for Hard Problem Instances: A critical survey and innovative applications**

Charilaos Efthymiou, Paul Spirakis

#### **74 - Power-law spectra in time series generated by Rule 150 and other cellular automata**

Jan Nagler, Jens Christian Clausen

#### **84 - SIMPEST: an agent-based model to simulate plague epidemics in Madagascar**

Dominique Badariotti, Arnaud Banos, Vincent Laperrière, Jean-Pierre Müller

#### **98 - Creating a framework for modelling complexity on socio-economic networks**

Andrew Evans, Alison Heppenstall, Mark Birkin

#### **107 - Efficiency in Technological Networks as Complex Organizations: An Approach from Game Theory**

Nieves Arranz, J. Carlos Fdez de Arroyabe

#### **111 - A description of El Niño Souther Oscillation Index through Tsallis Nonextensive Statistical Mechanics**

Filippo Petroni, Marcel Ausloos

#### **123 - Perfect Sampling using the Stochastic Simulation Algorithm**

Martin Hemberg, Mauricio Barahona

#### **125 - An overview, discussion, and demonstration of the Reconstruction Principle of Inductive Reasoning**

Berkan Eskikaya

#### **144 - Mixing Simulation Styles - A Declarative Add-on for the General Purpose Modelling Frameworks**

Bogdan Werth

#### **157 - Managerial intervention and instability in healthcare organisations: the role of complexity in explaining the scope of effective management**

David Brookfield, Denis Smith

#### **159 - Emergence of Cooperation in Innovation Networks**

Michael Koenig, Stefano Battiston, Frank Schweitzer

#### **172 - Simulation of Higher Order Self-Assembly**

Jens Peter Schroer, Kristian Lindgren

#### **187 - Clustering as a mechanism for repulsion between particles in DPD simulations**

Johan Nyström, Anders Eriksson, Martin Nilsson Jacobi, Kolbjorn Tunstrom

#### **192 - Fairness state with plastic preferences**

Elena Ramirez, Juan Guillermo Diaz Ochoa

#### **196 - The role of priority in the mobility of a system of two kinds of random particles**

Michael Maragakis, Panos Argyrakis, Shlomo Havlin

#### **200 - BitBang: A Model and Framework for Complexity Research**

Tiago Baptista, Telmo Menezes, Ernesto Costa

#### **208 - Power Games: The Impact of Sharing Power on Development Projects**

Crighton Nichols

#### **220 - Reconstructing Models for Local Government from Survey Data**

Jeffrey Johnson, Clive Downs

### Poster Session 2

#### **36 - Sleep microstructure analysis using Recurrence Plots: evidence for a subcortical oscillator**

Priano Lorenzo, Saccomandi Fabio, Mauro Alessandro, Guiot Caterina

#### **54 - On Degree-Based Decentralized Search in Complex Networks**

Shi Xiao, Gaoxi Xiao

#### **55 - Probabilistic inductive classes of graphs**

Natasa Kejzar, Vladimir Batagelj

#### **67 - Control of a Chaotic Autocatalytic Reaction System**

Ankur Mukherjee, S.K. Scott, Dominic Searson, Mark Willis, Allen Wright

#### **68 - Distance and height statistics in growing networks**

Renaud Lambiotte, Paul Krapivsky

**76 - Statistical analysis of Polish public transport networks**

Julian Sienkiewicz, Janusz A. Holyst

**77 - Ising model on two connected Barabasi-Albert networks**

Krzysztof Suchecki, Janusz Holyst

**78 - Network Discovery in Random Graphs**

Thomas Erlebach, Alexander Hall, Matus Mihalak

**91 - Effect Of Forcing Term On A Three Dimensional Artificial Neural Network**

Pritha Das, Atin Das

**106 - A Scale-Free Network Growth Model Based On Local Operators**

Fatih Ogun, Haluk Bingol

**120 - A model for Social Networks**

Riitta Toivonen, Jukka-Pekka Onnela, Jari Saramäki, Jörkki Hyvönen, János Kertész, Kimmo Kaski

**121 - Evolving Artificial Cell Signaling Networks**

James Decraene, George Mitchell, Ciaran Kelly, Barry McMullin

**132 - Do wandering albatrosses really perform Levy flights when foraging?**

Andrew Edwards, Nick Watkins, Mervyn Freeman, Richard Phillips

**151 - Simulation and Measurement of a Two-stage Complex Network Model**

Hongwei Luo, Kathy Horadam

**152 - On Protocell "Computation"**

Ciaran Kelly, Barry McMullin, Darragh O'Brien

**155 - Analysis of diameter distributions in tree-ring growth**

Maurizia Gandini, Paola Nola, Guido Caldarelli

**161 - Structure and dynamics of mycelial networks**

Dan Bebber, Mark Fricker, Peter Darragh, Juliet Hynes, Lynne Boddy

**171 - Analysis of IRC (Internet Relay Chat) Networks**

Murat Sensoy, Haluk Bingol

**174 - Inferring Connectivity from Dynamics on Networks**

Max Little, Patrick McSharry

**176 - Maximum entropy method for the reconstruction of networks**

Yohann Grondin, Derek Raine

**178 - Network Disconnectedness: a Novel Robustness Metric for Infrastructure Networks**

Alex K. S. Ng, Janet Efstathiou

**188 - Towards a unified model of protocell evolution**

Anders Eriksson, Olof Görnerup, Martin Nilsson Jacobi, Steen Rasmussen

**197 - Study of language evolution and population dynamics of two interacting species on scale free and random networks**

Alkiviadis Kalampokis, Kosmas Kosmidis, Panos Argyrakis

**205 - Structural stability, morphogenesis and epigenetic landscape**

Sara Franceschelli, Sara Franceschelli

**212 - The effect of network mixing patterns on contact tracing efficacy**

Istvan Kiss, Rowland Kao

**213 - Epidemiological Theory, Social Networks and the Basic Reproduction Ratio**

Rowland Kao, Istvan Kiss