

Society for Chaos Theory in Psychology and Life Sciences



7TH INTERNATIONAL NONLINEAR SCIENCE CONFERENCE

Paracelsus Medical University
Salzburg, Austria
April 6-8, 2017

Conference
Program



Dedicated to the development of nonlinear
science worldwide since 1991

INSC 2017

7TH INTERNATIONAL NONLINEAR SCIENCE CONFERENCE

Thursday, 6th of April

9:00h

Welcome Addresses

Dr. Sara Ross, President of the SCTPLS
Prof. Dr. Eva Rohde, Vice Dean of the Paracelsus Medical University Salzburg
Prof. Dr. Günter Schiepek, Conference Chair

9:30h

Synergetics: Some Basic Concepts and Applications

Hermann Haken

10:30h

Coffee Break

A Auditorium Mitte

B Auditorium Süd

11:00h

Evolution of Complexity Science

A Logic for Complexity
Jeffrey Goldstein

The Phenomenon of Autogaslighting in the
Evolution of Civilization
Jason Hu

Interpersonal Synchronization

Turn Taking, Non-Stationarity, and
Synchronization in Physiological Time Series
*Stephen Guastello, David E. Marras, Anthony F.
Peressini, Julian Castro, Michael Equi*

Transient Induced Global Response
Synchronization: Dispositional Cellular
Automata
William Sulis

12:00h

Cognition and Behavior

On the Pervasiveness of Long-Range Memory
Processes in Daily High School Attendance
Rates
Matthijs Koopmans

Operationalization and Measure of
Ambivalence in Psychology and Social Science
Olga Mitina, Ilya Pluzhnikov

Team Dynamics

A Cusp Catastrophe Model for Satisfaction,
Conflict, and Conflict Handling Strategies in
Teams
*Teresa Rebelo, Paulo Renato Lourenço, Isabel
Dimas, Margarida Pinheiro*

Neurorehabilitation Team as a Semi-Open
Complex System
Olga Maksakova

13:00h

Lunch Break

Friday, 7th of April

9:00h

Physiological Synchronization and Group Dynamics in Work Teams

Stephen Guastello

A Auditorium Mitte

B Auditorium Süd

9:45h

Pattern Transitions in Psychotherapy

Emotional-Cognitive Regulation and Critical Instabilities of Affective Experiencing and Cognitive Mastery in Psychotherapy Diaries: Preliminary Results

Catalin Zaharia, Omar Gelo, Erhard Mergenthaler, Günter Schiepek

The Wax and Gold of Therapy: Pattern Transitions and Synchronization of Cognitive, Emotional, and Neuronal Processes in Psychotherapy

Benjamin Aas, Anna Kastinger, Martin Kronbichler, Günter Schiepek

Social Interaction

Possibilities of Interdisciplinary Analysis for Human Group Dynamics

Jesus Mario Serna, Mark McCann, Danilo Liuzzi, Gaetano Dato, Justin Williams, Lorraine Sugar, Sina Tafazoli

Interpersonal Adaptation in Teacher-Student Interactions

Helena Pennings

10:45h

Coffee Break

11:15h

Symposium

Turning Points: Bio-Psycho-Social Pattern Formation and Symmetry Breaking in Psychotherapeutic Processes

Discussants: *David Pincus, Günter Schiepek*

Verbal Pattern Formation and Treatment Outcome in Psychotherapy: A Preliminary Study

Omar Gelo, Gloria Lagetto, Fiorella Leopizzi, Marcello Gallucci, Enrico Ciavolino

Nonstationary Dynamics of Patient's and Therapist's Physiological Variables in Brief Psychodynamic Psychotherapy

Giulio de Felice, Ariana Palmieri, Franco F. Orsucci, Alessandro Giuliani, Silvia Andreassi, Johann Kleinbub

Systemic Binds: The Key Concept for Integrative Psychotherapy

David Pincus

Patterns in Literature and Speech

Nonlinear Dynamical Interaction Patterns in a Discourse Analysis: Shedding Light into the Black Box

Dimitrios Stamovlasis

Fractals in Literature: New Findings

Eystein Glattre, Havard Glattre

Using a Psychosemantic Approach for the Analysis of Motivational Dynamics of Movie's Characters (on the Base of Watching "Rory O'Shea Was Here").

Olga Mitina, Alexandra Plotnikova

12:45h

Lunch Break

14:15h	Data as Self-organized Patterns on Graphs <i>Marc-Thorsten Hütt</i>	
15:00h	<p>Dynamics of Cognition</p> <p>Timescales of Neural Codes in Cognitive Systems <i>Annemarie Peltzer-Karpf</i></p> <p>Complexity and the Dynamics of Novel Thinking: Evidence from Short and Long Term Impacts of Musical Skill Learning <i>Martin Gardiner</i></p>	<p>From Metaphor to Science</p> <p>Cyber-systemic Approaches from a Viewpoint of Clinical Psychology - Transdisciplinary Perspectives <i>Felix Tretter</i></p> <p>From Metaphor to Method: Chaotic Itinerancy and Creative Problem Solving <i>Diane Rosen</i></p>
16:00h	Poster Session and Coffee Break	
17:00h	<p>Psychotherapy: Outcome, Process, and Theory</p> <p>Generalized Multiplicative Model for Assessing Outcome in Psychotherapy: A Case Study of Subjective Well-being <i>Irina Malkina-Pykh</i></p> <p>Modeling Psychotherapy as a Nonlinear Dynamic System <i>Helmut Schöller, Kathrin Viol, Marc-Thorsten Hütt, Günter Schiepek</i></p>	<p>Symposium Discussant: <i>Valery Galkin</i></p> <p>The Analog of Heisenberg's Uncertainty Principle in Biology and Psychology for Description of Complex Homeostatic Systems <i>Valery M. Eskov, Valery V. Eskov, U.V. Vochmina, D.Y. Filatova</i></p> <p>What Does it Mean: Voluntary or Involuntary Movements? <i>Michael I. Zimin, U.P. Zinchenco, A.A. Khadarzev, M.A. Filatova</i></p>
18:00h	Guided tour to the old town of Salzburg Get together in the Müllner-Brewery (traditional beer halls)	

Saturday, 8th of April

9:00h **Experiential Flow as a Complex Adaptive System: Human Resilience and Psychotherapy**
David Pincus

A Auditorium Mitte

B Auditorium Süd

9:45h **Panel Discussion**
Nonlinear Dynamical Systems and
Psychotherapy: Scientific and Practical
Concerns
Chair: *David Pincus*

Discussants:
Giulio de Felice
Omar Gelo
Johann Kleinbub
David Pincus
Günter Schiepek

Symposium
Discussant: Valery M. Eskov

N.A. Bernstein Hypothesis and Eskov-Zinchenko Effect in the Description of Chaotic Dynamics of Homeostatic Biosystems (Complexity)
Olga Filatova, M.I. Zimin, A.E. Bazhenova, T.Y. Poskina

Evolution of Homeostasis as Aging Dynamics of Cardio-Vascular System Parameters
Olga Filatova, Diana Filatova, Julia Bashkatova, V.V. Grigorenko

The Homeostasis and Evolution of Complex Biosystems and Thermodynamics of Non-Equilibrium Systems of I.R. Prigogine
Valery M. Eskov, Valery V. Eskov

10:45h **Coffee Break**

11:15h **Brain Dynamics**

Complexity of Brain Processes During Meditation
Klaus Baerentsen

Dynamic Causal Modeling: A Nonlinear Approach on Modeling Brain Connectivity
Kathrin Viol, Günter Schiepek

System Development

Dispositional Dynamical Systems: Theory, Modeling and Implications for Research
William Sulis

Continuities in Operators of Diagonal Evolution
Irina Trofimova

12:15h **Lunch Break**

13:45h **From Complex Systems to AI and Superbrains. Perspectives of Computational Modeling in Life, Brain, and Social Sciences**
Klaus Mainzer

14:30h **Public Health** **Methods and Theory Development**

Sociology and Complexity. Suicide and Social Integration in Modern Societies: A Reflection on Differentiation and Social Integration Processes from the Perspective of a Non-linear Analysis of Complex Social Systems
Rosalia Condorelli

The Dynamics of Systems with Nonlinear Pairwise Interactions: Theoretical Background
Yuri Pykh

About Two Different Dynamical Systems Keeping Track of (Un)Boundedness, With Applications to Cognition
Adam Gadowski, Bogdan Lent

15:30h-15:45h **Brief Closing Plenary**

Posters

Alexandru Caragea, Catalin Zaharia
Irreversibility and Intentional Characteristics of Tracked Data from Self-Assessments

Matilda Nikolic, Ana Prorokovic, Andrea Tokic
Nonlinear Changes in Cardiovascular and Psychomotor Systems while Performing Fitts Tapping Tasks

Andrea Tokic, Ljiljana Gregov, Matilda Nikolic
The Effects of Shift Work on Nonlinear Aspects of Cardiovascular Dynamics

Takuma Takehara, Funio Ochiai, Naoto Suzuki, Kunio Mizuno, Toru Tazumi, Takayuki Ishikawa, Takanobu Baba, Tokihiro Ogawa
A Big Data Study on How Zipf's Law Governs Multiplex Emotion-Associated Words

Aina Fiol-Veny, Alejandro de la Torre-Luque, Maria Balle, Xavier Bornas
Anxiety and the Enhanced Complexity of Adolescent Boys' Everyday Life Heart Rate

Günter Schiepek, Benjamin Aas, Helmut Schöller
The Synergetic Navigation System – An Internet-Based Technology for Process-Outcome Monitoring