

# Program

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## **Sunday, 27 February**

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| 17:00 - 18:30 | Registration in guest house 4, library   |
| 18:30         | Meeting for joint walk to the restaurant<br>(meeting point: in front of the main building, pond) |
| 19:00 - 20:00 | Welcome dinner at the restaurant 'Il Grottino da Salvatore', Reckestraße 5, 01187 Dresden        |

**Monday, 28 February**

- 09:15 - 09:30      **Jan-Michael Rost (director of the MIPKs) & scientific coordinators**  
Opening
- 09:30 - 10:30      **Christoph Bandt** (University of Greifswald)  
orpatt22 opening talk: Statistics and modelling of order patterns in univariate time series (on-site)
- 10:30 - 11:00      Coffee break
- 11:00 - 11:30      **Milan Palus** (Czech Academy of Sciences)  
Ordinal patterns in causality detection (virtual)
- 11:30 - 12:00      **Aditi Kathpalia** (Czech Academy of Sciences)  
Ordinal Patterns for Compression-Complexity based Causality Detection (virtual)
- 12:00 - 12:30      **Miguel Cornelles Soriano**  
(University of Balearic Islands)  
Time-Delay Identification Using Ordinal Quantifiers (virtual)
- 12:30 - 13:30      Lunch break
- 13:30 - 14:30      Informal discussions
- 14:30 - 15:00      **Claudio Delrieux** (Universidad Nacional del Sur)  
Ordinal Patterns in Eye Tracking Signals (virtual)
- 15:00 - 15:30      **Walter Legnani** (National Technological University – Buenos Aires Regional Faculty)  
Proposal of a Data Set for Classification ECG Signals (virtual)

- 15:30 - 16:00      **Haroldo V. Ribeiro** (State University of Maringá)  
Characterizing images with ordinal methods  
(virtual)
- 16:00 - 16:30      Coffee break
- chair orpatt22 colloquium: Matthew Eiles (MPIPKS)*
- 16:30 - 17:30      **orpatt22 colloquium: Jürgen Kurths**  
(Potsdam Institute for Climate Impact Research)  
Climate Meets Complex Systems: Exploring  
Predictability of Extreme Climate Events via a  
Complex Network Approach (on-site)
- 17:30 - 18:00      Discussion on colloquium's talk
- 18:00 - 18:30      Informal discussions
- 18:30 - 19:30      Dinner at the PKS cafeteria
- 19:30 - 20:00      Informal discussions

**Tuesday, 01 March**

- 09:00 - 09:30      **Alejandro Frery**  
(Victoria University of Wellington)  
A Test for White Noise in the Entropy-Complexity Plane (virtual)
- 09:30 - 10:00      **Hiroshi Gotoda** (Tokyo University of Science)  
Ordinal pattern-based analysis of spatiotemporal dynamics in flame and combustion instabilities (virtual)
- 10:00 - 10:30      **Piergiulio Tempesta**  
(Complutense University of Madrid)  
A unified approach to the ordinal analysis of deterministic and random processes I: complexity classes and group entropies (virtual)
- 10:30 - 11:00      Coffee break
- 11:00 - 11:30      **Ulrich Parlitz** (Max Planck Institute for Dynamics and Self-Organization)  
Characterizing multivariate time series in live sciences using ordinal patterns (on-site)
- 11:30 - 12:00      **Reik Donner** (Hochschule Magdeburg-Stendal)  
Causal inference from multivariate time series using transition network representations based on ordinal patterns, graphlets and event synchrony (on-site)
- 12:00 - 12:30      **Inga Kottlarz** (Max Planck Institute for Dynamics and Self-Organization)  
Ordinal Patterns as Robust Biomarkers in Multichannel EEG Time Series (on-site)
- 12:30 - 13:30      Lunch break

- 13:30 - 14:30      Informal discussions
- 14:30 - 15:00      **Luciano Zunino** (National Scientific and Technical Research Council, Buenos Aires)  
A versatile ordinal distance for time series analysis (virtual)
- 15:00 - 15:30      **Fernando Montani**  
(Universidad Nacional de La Plata)  
Rhythms pattern activity and collective oscillations in neural structures: exploring the role of the different frequency bands (virtual)
- 15:30 - 16:00      **Helena Bordini de Lucas**  
(Federal University of Alagoas)  
A symbolic information approach to characterize response-related differences in cortical activity during a Go/No-Go task (virtual)
- 16:00 - 16:30      Coffee break
- 16:30 - 17:00      **Massimiliano Zanin** (Instituto de Física Interdisciplinar y Sistemas Complejos IFISC)  
Analysing gait through ordinal patterns (on-site)
- 17:00 - 17:30      **Johann Martínez**  
(Spanish National Research Council)  
Football & brain as simple examples of Ord Patt versatility (on-site)
- 17:30 - 18:30      Discussion session on  
'Ordinal Patterns and Machine Learning'

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18:30 - 19:30	Dinner at the PKS cafeteria
19:30 - 20:00	Informal discussions

## Wednesday, 02 March

- 09:00 - 09:30      **Beata Graff** (Medical University of Gdansk)  
Challenges in cardiorespiratory regulation assessment (virtual)
- 09:30 - 10:00      **Grzegorz Graff**  
(Gdansk University of Technology)  
Ordinal patterns in the assessment of information transfer between blood pressure and heart rate (virtual)
- 10:00 - 10:30      **»talk was canceled: Evgeniy Petrov«**  
(National Academy of Sciences of Ukraine)  
Ordinal spaces (virtual)
- 10:30 - 11:00      Coffee break
- 11:00 - 11:30      **Cristina Masoller** (Universitat Politècnica De Catalunya)  
Neural coding of weak signals in noisy environments using ordinal spike patterns (on-site)
- 11:30 - 12:00      **Christian Weiss**  
(Helmut Schmidt University Hamburg)  
Measuring Dispersion and Serial Dependence in Ordinal Time Series based on the Cumulative Paired phi-Entropy (on-site)
- 12:00 - 12:30      **Annika Betken** (University of Twente)  
Rank-based change-point analysis for long-range dependent time series (on-site)
- 12:30 - 13:30      Lunch break
- 13:30 - 14:30      Informal discussions

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- 14:30 - 15:00      **Klaus Lehnertz** (University Hospital Bonn)  
Ordinal methods for a characterization of  
evolving functional brain networks (virtual)
- 15:00 - 15:30      **Holger Lange**  
(The Norwegian Institute of Bioeconomy Research)  
Ordinal pattern analysis in environmental sciences  
(virtual)
- 15:30 - 16:00      **María Muñoz-Guillermo**  
(Polytechnic University of Cartagena)  
Time series and forecasting: an approach using  
ordinal patterns (virtual)
- 16:00 - 16:30      Coffee break
- 16:30                Departure for downtown Dresden  
(meeting point: in front of the institute's main  
building/pond)
- 17:00 - 19:00      Guided walking tour of Neustadt and Altstadt  
of Dresden
- 19:00 - 21:00      Workshop dinner at the restaurant 'Freiberger  
Schankhaus', Neumarkt 8, 01067 Dresden



**Thursday, 03 March**

- 09:30 - 10:00      **Michael Small** (University of Western Australia)  
Ordinal networks - dynamics and entropy (virtual)
- 10:00 - 10:30      **Aurelio F. Bariviera** (Universitat Rovira i Virgili)  
Cryptocurrency market analysis using information theory quantifiers (virtual)
- 10:30 - 11:00      Coffee break
- 11:00 - 11:30      **Inmaculada Leyva**  
(Universidad Rey Juan Carlos Madrid)  
How complex is to be a hub? Dynamical complexity and the structure of complex networks (on-site)
- 11:30 - 12:00      **Dimitris Kugiumtzis**  
(Aristotle University of Thessaloniki)  
Connectivity estimation of symbols sequences using Discrete Partial Mutual Information from Mixed Embedding (on-site)
- 12:00 - 12:30      **José Maria Amigó**  
(Miguel Hernandez University)  
A unified approach to the ordinal analysis of deterministic and random processes II: complexity-based permutation entropies (on-site)
- 12:30 - 12:35      Group photo in Zoom
- 12:35 - 13:30      Lunch break
- 13:30 - 14:30      Informal discussions
- 14:30 - 15:00      **Jean Sire Armand Eyebe Fouda**  
(University of Yaoundé I)

- Applicability of ordinal pattern entropies to ECG beat classification (virtual)
- 15:00 - 15:30 **Diego Mateos** (Consejo Nacional de Investigaciones Científicas y Técnicas)  
Complexity of brain dynamics as a correlate of consciousness in anaesthetized monkeys (virtual)
- 15:30 - 16:00 **Fernanda Matias**  
(Universidade Federal de Alagoas)  
Statistical complexity is maximized close to criticality in cortical dynamics (virtual)
- 16:00 - 16:30 Coffee break
- 16:30 - 17:00 **Alexander Schnurr** (University of Siegen)  
Ordinal patterns and ordinal pattern dependence from a statistical point-of-view (virtual)
- 17:00 - 17:30 **Marisa Mohr** (University of Luebeck)  
A Review of Multivariate Ordinal Pattern Representations (virtual)
- 17:30 - 18:30 Discussion session on  
'Statistical Aspects of Ordinal Pattern Distributions'
- 18:30 - 19:30 Dinner at the PKS cafeteria
- 19:30 - 20:00 Informal discussions

**Friday, 04 March**

- 09:00 - 09:30     **Yoshito Hirata** (University of Tsukuba)  
Ordinal patterns for characterizing nonlinear stochastic systems (virtual)
- 09:30 - 10:00     **Taichi Haruna**  
(Tokyo Woman's Christian University)  
Partially Ordered Permutation Complexity (virtual)
- 10:00 - 10:30     **Yong Zou** (East China Normal University)  
Ordinal pattern transition networks for multivariate time series analysis (virtual)
- 10:30 - 11:00     Coffee break
- 11:00 - 11:30     **Karsten Keller** (University of Luebeck)  
Ordinal pattern based analysis: Quantification of roughness and asymmetry (on-site)
- 11:30 - 12:00     **Oswaldo A. Rosso**  
(Universidade Federal de Alagoas)  
The causal entropy-complexity plane (on-site)
- 12:00 - 12:30     Closing
- 12:30 - 13:30     Lunch break
- 13:30             Informal discussions & departure