

# Scientific Program

Monday, July 05

## Morning session

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|---------------|---|
| 8:15 – 8:45   | Registration  |
| 8:45 – 9:00   | Opening   |
| 9:00 – 9:35   | <b>Ed Ott</b> , Maryland<br><i>The stability of gene network dynamics</i>   |
| 9:35 – 10:10  | <b>Paul Glendinning</b> , Manchester<br><i>Pairing up in dynamical networks</i>   |
| 10:10 – 10:45 | <b>Francesco Ginelli</b> , Paris<br><i>Lyapunov analysis captures the collective dynamics of large chaotic systems</i>        |
| 10:45 – 11:15 | Coffee and tea  |
| 11:15 – 11:50 | <b>Antonio Politi</b> , Florence<br><i>Collective behaviour in a heterogeneous network of integrate-and-fire neurons</i>      |
| 11:50 – 12:25 | <b>Carlo Laing</b> , Massey<br><i>Chimera states in heterogeneous Kuramoto networks</i>                                       |
| 12:25 – 13:00 | <b>Hiroshi Kori</b> , Ochanomizu<br><i>Collective phase diffusion and temporal precision in networks of noisy oscillators</i> |



## Monday, July 05

### Afternoon session

- 14:30 – 15:05    **Eckehard Schöll**, Berlin  
*Delay-coupled complex networks: controlling synchrony in neural networks and beyond*
- 15:05 – 15:40    **Ulrich Parlitz**, Göttingen  
*Identification and characterization of dynamical networks*
- 15:40 – 16:15    **Serhiy Yanchuk**, Berlin  
*Multiple patterns in a ring of delay coupled oscillators*
- 16:15 – 16:45    Coffee and tea
- 16:45 – 17:20    **Alexander Dmitriev**, Moscow  
*Network centric systems*
- 17:20 – 17:55    **Michael Schiek**, Jülich  
*iSANLA – intelligent Sensor and Actuator Network for Life Science Applications*
- 17:55 – 18:30    **Ilya Sysoev**, Saratov  
*Data analysis and coupling estimation using forecasting models*
- 19:00              *Welcome Party, Restaurant “O’Panas”*



## Tuesday, July 06

### Morning session

- 9:00 – 9:35     **Hiroaki Daido**, Osaka  
*Dynamics of large populations of coupled active and inactive oscillators: Aging transition and spatiotemporal chaos*
- 9:35 – 10:10    **Gennady Cymbalyuk**, Atlanta  
*Scaling of bursting activity of a neuron*
- 10:10 – 10:45   **Michael Zaks**, Berlin  
*Slow switching and reemergent clusters in networks of nonidentical phase oscillators*
- 10:45 – 11:15   Coffee and tea
- 11:15 – 11:50   **Bernold Fiedler**, Berlin  
*Pyragas control of spatio-temporal patterns: Andronov-Hopf bifurcation*
- 11:50 – 12:25   **Oleh Omel'chenko**, Berlin/Kyiv  
*Moving Chimera states*
- 12:25 – 13:00   **Matthias Wolfrum**, Berlin  
*Chimera states are chaotic transients*



## Tuesday, July 06

### Afternoon session

- 14:30 – 14:50    **Judith Lehnert**, Berlin  
*Zero-lag and cluster synchronization in networks of excitable systems*
- 14:50 – 15:10    **Taras Girnyk**, Kyiv  
*Twisted and multitwisted waves in a network of repulsive coupled oscillators*
- 15:10 – 15:30    **Zoran Levnajic**, Potsdam  
*Phase-response curves in ensembles and networks of coupled oscillators*
- 15:30 – 15:50    **Anastasiia Panchuk**, Kyiv  
*Coupled FitzHugh-Nagumo systems: patterns induced by a delay coupling and a feedback*
- 15:50 – 16:10    **Mario Mulansky**, Potsdam  
*Scaling properties of disordered, strongly nonlinear lattices*
- 16:10 – 16:40    Coffee and tea
- 16:40 – 17:00    **Alexander Makarenko**, Kyiv  
*Neural networks with anticipation: problems and prospects*
- 17:00 – 17:20    **Philipp Hövel**, Berlin  
*Cooperative dynamics in coupled FitzHugh-Nagumo systems*
- 17:20 – 17:40    **Oleksandr Sudakov**, Kyiv  
*Application of GRID technologies for massive non-linear dynamics simulations*
- 17:40 – 18:00    **Sergii Vozniuk** and **Andrii Vozniuk**, Kyiv  
*The online system for scientific collaboration and data analysis*
- 18:00 – 18:20    **Vasily Vakorin**, Toronto  
*Exploring an interplay between complexity and causality with application to a neuromagnetic source network*



## Wednesday, July 07

### Morning session

- 9:00 – 9:35     **Theo Geisel**, Göttingen  
*Phase transitions towards self-organized criticality in neuronal networks*
- 9:35 – 10:10    **Jürgen Kurths**, Potsdam  
*The backbone of the climate network*
- 10:10 – 10:45   **Bastien Fernandez**, Marseille  
*Spatial chaos of traveling waves has a unique velocity*
- 10:45 – 11:15   Coffee and tea
- 11:15 – 11:50   **Yuri Maistrenko** and **Iryna Omelchenko**, Kyiv/Berlin  
*Chimera states at the transition from coherence to incoherence*
- 11:50 – 12:25   **Michael Rosenblum**, Potsdam  
*Global nonlinear coupling: what happens when synchrony breaks*
- 12:25 – 13:00   **Tomasz Kapitaniak**, Lodz  
*Odd sympathy revisited*
- 15:00             *Boat trip & Conference dinner*



## Thursday, July 08

### Morning session

- 9:00 – 9:35     **Peter Ashwin**, Exeter  
*Dynamic clustering in coupled phase oscillators*
- 9:35 – 10:10    **Igor Chueshov**, Kharkiv  
*Inertial manifolds and master-slave synchronization in coupled infinite-dimensional systems*
- 10:10 – 10:45   **Fatihcan Atay**, Leipzig  
*Consensus and synchronization on networks with time-varying and delayed connections*
- 10:45 – 11:15    Coffee and tea
- 11:15 – 11:50   **Alessandro Torcini**, Florence  
*Collective oscillations in disordered neural networks*
- 11:50 – 12:25   **Maurice Courbage**, Paris  
*Chaotic map-based model in neurodynamics*
- 12:25 – 13:00   **Alexander Loskutov**, Moscow  
*Quantitative measure of complexity in non-homogeneous networks of coupled maps*



## Thursday, July 08

### Afternoon session

- 14:30 – 14:50    **Maxim Komarov**, Nizhny Novgorod  
*Metastable states and transient activity in neuronal models*
- 14:50 – 15:10    **Thomas Dahms**, Berlin  
*Chaotic laser dynamics in networks with multiple delays*
- 15:10 – 15:30    **Iliya Kashchenko**, Yaroslavl  
*Multistability in nonlinear parabolic systems with weak diffusion*
- 15:30 – 15:50    **Daria Maloziomova**, Yaroslavl  
*The buffer phenomenon in the generalization of the Swift-Hohenberg equation*
- 15:50 – 16:10    **Birgit Hein**, Regensburg  
*Localisation in quantum search algorithms*
- 16:10 – 16:40    Coffee and tea
- 16:40 – 17:00    **Anna Vasylenko**, Kyiv  
*Hyperchaos in discrete Kuramoto model*
- 17:00 – 17:20    **Mykola Matviichuk**, Kyiv  
*Common periodic trajectories of two chaotic maps*
- 17:20 – 17:40    **Julio Rodriguez**, Lausanne/Bielefeld  
*Networks of adaptive frequency oscillators and parametric resonance*
- 17:40 – 18:00    **Jeremi Kazimierz Ochab**, Cracow  
*Synchronization of coupled oscillators in a local one-dimensional Kuramoto model*



## Friday, July 09

### Morning session

- 9:00 – 9:35     **Martin Hasler**, Lausanne  
*Average consensus on networks and applications*
- 9:35 – 10:10    **Oleksandr Burylko**, Kyiv  
*Heteroclinic cycles in coupled phase oscillators systems with asymmetric coupling functions*
- 10:10 – 10:45   **Arkady Pikovsky**, Potsdam  
*Uncovering interaction of coupled oscillators from data*
- 10:45 – 11:15   Coffee and tea
- 11:15 – 11:50   **Oleksandr Sharkovsky** and **Sergiy Berezovsky**, Kyiv  
*Computer turbulence and Chimera states*
- 11:50 – 12:25   **Sergey Glyzin**, Yaroslavl  
*Wave processes in the system of coupled oscillators appearing in neurodynamics*
- 12:25 – 13:00   **Vasyl Ustimenko**, Kyiv  
*Complex dynamical systems with large girth indicator related chaos and applications to quantum computing*
- 13:00            Closing
- 13:15            *Deregistration*

