

## **Session Program**

**1-3 Dec 2023**

# **Dynamics of biological systems: emergent phenomena at different scales**

## ***Neural Networks***

Jagiellonian University, A-1-06  
Faculty of Physics, Astronomy and Applied Computer Science, Jagiellonian University, ul. prof.  
Stanisława Łojasiewicza 11, 30-348 Kraków

## Saturday 2 December

14:30

### Neural Networks: Part I

**Session** |**Location:** Jagiellonian University, A-1-06, Faculty of Physics, Astronomy and Applied Computer Science, Jagiellonian University, ul. prof. Stanisława Łojasiewicza 11, 30-348 Kraków |**Convener:** Jeremi Ochab

14:30-15:15

**Cholinergic modulation of neuronal excitability underlies differential dynamics and roles of NREM and REM sleep during sleep dependent memory consolidation.**

**Speaker**

Michał Zochowski

15:15-16:00

**Kinematics of mice reinforcement learning in intelligent cages****Speaker**

Daniel Wójcik

16:00

# Sunday 3 December

09:30

## Neural Networks: Part II

**Session** |

**Location:** Jagiellonian University, A-1-06, Faculty of Physics, Astronomy and Applied Computer Science, Jagiellonian University, ul. prof. Stanisława Łojasiewicza 11, 30-348 Kraków |

**Convener:** Zuzanna Szymańska

09:30–10:15

### Fractal and multifractal organisation of neuroimaging signals in cognitive tasks and in disease

**Speaker**

Jeremi Ochab

10:15–10:35

### Exploring Dendritic Plasticity: How Synaptic and Ion Channel Adaptations Enable Single Neurons to Rival Artificial Neural Network Complexity

**Speaker**

Ziemowit Sławiński

10:35–10:55

### Mapping Brain Connections: The Role of Relaxin 3/RXFP3 system in Behavior and Functionality

**Speaker**

Gabriela Czerniak

10:55–11:15

### About hierarchical correlation reconstruction, multi-feature Granger causality, and others

**Speaker**

Jarek Duda

11:15