



**SFB 1315**

Mechanisms and Disturbances in Memory Consolidation:  
From synapses to systems

Tuesday

**NOV 21, 2023**  
**4:00 pm CET**

BCCN Lecture Hall

Philippstr. 13, Berlin

ZOOM ID: 7754910236

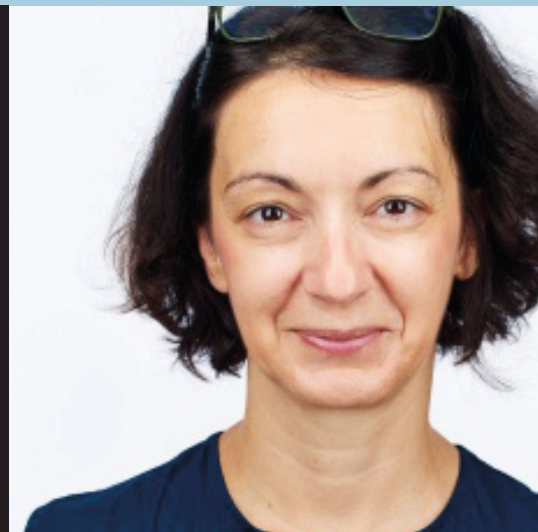
SFB1315.ifb@hu-berlin.de

SFB 1315 LECTURE SERIES 2023

# NATURAL COMPUTATIONS: FROM SINGLE CELLS TO NEURONAL NETWORKS

**ANETA KOESKA**

Lise Meitner Research Group Leader  
Cellular Computations and Learning  
Max Planck Institute for Neurobiology of Behavior-Caesar  
Bonn



Funded by

**DFG** Deutsche  
Forschungsgemeinschaft  
German Research Foundation



SFB 1315

Mechanisms and Disturbances in Memory Consolidation:  
From synapses to systems

Tuesday

NOV 21, 2023  
4:00 pm CET

BCCN Lecture Hall

Philipstr. 13, Berlin

ZOOM ID: 7754910236

SFB1315.ifb@hu-berlin.de

# NATURAL COMPUTATIONS: FROM SINGLE CELLS TO NEURONAL NETWORKS

**A fundamental characteristic of living systems is sensing and integrating multi-dimensional sensory signals with memory in order to generate complex self-organized behaviors in continuously changing environments.**

Using computations on the level of signaling networks in single-cells, we have identified that non-neuronal cells utilize dynamical ghost states as a memory-generating mechanism in order to integrate information from time-varying signals, and verified experimentally that ghost states are an emergent feature of cell-surface receptor networks organized at criticality.

**I will discuss a development of theoretical framework for biological computation with ghost states, and explore to which extent we can expand the findings from signaling networks in single non-neuronal cells to computations performed by neuronal networks in general.**

## About the Speaker

Since May 2020, PD Dr. Aneta Koseska is leading the Lise Meitner Research Group 'Cellular computations and learning'.

This invited talk is hosted by (Ao6), who will introduce the speaker and Q&A will be moderated by SFB1315 Speaker Matthew Larkum.

## Certificate of attendance:

Please contact team assistant [serenella.brinati.1@hu-berlin.de](mailto:serenella.brinati.1@hu-berlin.de)



Funded by



Deutsche  
Forschungsgemeinschaft  
German Research Foundation