

BrainModes is an annual international meeting focusing on innovative means of understanding complex brain activity and multimodal neuroscience data sets. The objective of these meetings is to foster informal discussion of brain modeling and multivariate data analysis (EEG, MEG, fMRI, etc). The central motif is that of "modes" – how complex brain activity is organized around low dimensional manifolds.

The BrainModes conference 2023 is organized jointly with the European School of Network Neuroscience (euSNN) (<https://eusnn.eu>). Emphasis in the program is on the following topics: network dynamics and coupling modes; modulation/neurostimulation; multiscale modeling; connectivity and structure; network diseases.

Venue

Erika-Haus, UKE Campus, Building W29
Martinistrasse 52, 20246 Hamburg, Germany

Please note

Consumption of food and beverages is allowed on the ground floor but NOT permitted in the lecture hall

Organizers

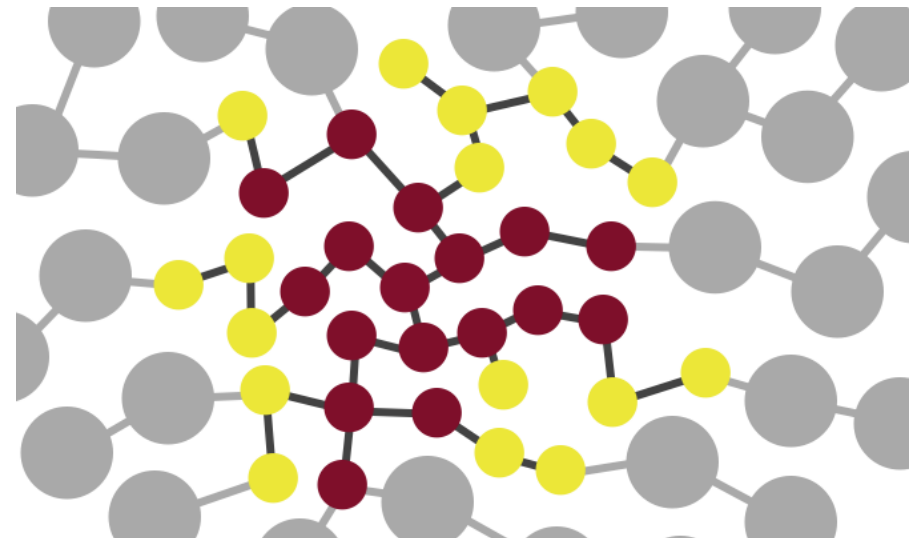
Prof. Dr. Andreas K. Engel, UKE Hamburg
Prof. Dr. Petra Ritter, Charité Berlin
Prof. Dr. Claus Hilgetag, UKE Hamburg

BrainModes

in cooperation with

European School of Network Neuroscience (euSNN)

An Innovative Training Network (ITN) of the Marie Skłodowska-Curie Actions



Nov 29 – Dec 1, 2023

Brainmodes Conference 2023

Multiscale network dynamics:
analysis, modeling, modulation



PROGRAM

Talks 30 min + 15 min discussion

| Wednesday Nov 29 | | |
|-------------------------|--|----------------------|
| 9:15 | Opening | |
| 9:30 | Flexible decision computations in human cortex | Tobias Donner |
| 10:15 | Low-dimensional population coding in pre-frontal cortex: evidence from intracranial recordings in humans | Randolph Helfrich |
| 11:00 | Break | |
| 11:30 | Mind-wandering: how can the brain be adaptively dynamic? | Marieke van Vugt |
| 12:15 | Brain rhythms serve the definition and learning of functional neuronal networks | Pascal Fries |
| 13:00 | Lunch break | |
| 14:00 | A representational role for spontaneous activity in the human brain | Maurizio Corbetta |
| 14:45 | Network modulation with transcranial alternating current stimulation | Bettina Schwab |
| 15:30 | Break | |
| 16:00 | Stimulating and modifying brain networks with multi-locus TMS | Risto Ilmoniemi |
| 16:45 | Plenary discussion | |
| 17:30 | End | |
| Thursday Nov 30 | | |
| 9:30 | Visual consciousness and the technology to restore it in blindness | Pieter Roelfsema |
| 10:15 | Brain hyperexcitability: friend or foe? | Ana Solodkin |
| 11:00 | Break | |
| 11:30 | Developmental rhythms and their life-long shadow on cognition | Ileana Hanganu-Opatz |
| 12:15 | Activity-indexed developmental plasticity unfolds along a sensorimotor-to-associative cortical neuroaxis in humans | Valerie Sydnor |

| 13:00 | Lunch break | |
|---------------------|--|---------------------|
| 14:00 | Large scale MEG/EEG brain network dynamics - temporal and population structure | Mark Woolrich |
| 14:45 | Inferring cellular-level interactions from aggregate measures of neural activity | Stefano Panzeri |
| 15:30 | Break | |
| 16:00 | Edge-centric connectomics | Richard Betzel |
| 16:45 | Plenary discussion | |
| 17:30 | End | |
| Friday Dec 1 | | |
| 9:30 | Inferring principles of cognition by multiscale brain modeling | Petra Ritter |
| 10:15 | A novel large-scale modelling approach for understanding oscillatory brain network dynamics and stimulation effects | Vladimir Litvak |
| 11:00 | Break | |
| 11:30 | Virtual Brain twins - from neuroscience to clinical applications | Viktor Jirsa |
| 12:15 | Neurorehabilitation principles and whole brain digital twin modeling: identifying the networks driving post-stroke functional recovery | Paul Verschure |
| 13:00 | Lunch break | |
| 14:00 | Cerebral cortex connectomics | Moritz Helmstaedter |
| 14:45 | Theoretical and empirical considerations in defining a possibility space for neural architectures | Randy McIntosh |
| 15:30 | Break | |
| 16:00 | Neural correlates of bistable motion perception at macro- and mesoscale using ultra-high field fMRI | Rainer Goebel |
| 16:45 | End of conference | |