

Neural Traces 2024: Schedule



Day 1: Wednesday

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| 08:30 | Registration |
| 09:00 | Introduction |
| | Session M1: Signal Processing and Time Series Modeling Chairs: Stefan Haufe |
| 09:25 - 10:40 | Natalie Schaworonkow Not just frequency: Neural oscillations and their characteristic waveform shape |
| | Srikantan Nagarajan Structure-function integration with MEG - Spectral graph modeling of neural oscillations |
| | Sara Sommariva MEG inverse problem: A word of caution towards connectivity estimation |
| 10:40 - 11:25 | Coffee Break and Mind-Matching Session I |
| | Session C2: Aging and Dementia Chairs: Srikantan Nagarajan and Erfan Baradarantohidi |
| 11:25 - 13:05 | Kamalini Ranasinghe (Keynote) Neuronal hyperexcitability and neurophysiological manifestations in AD |
| | Myriam Sander Oscillatory traces of age differences in episodic memory |
| | Carlos Coronel Hypoexcitation and connectome disintegration via whole-brain semi-empirical modeling in neurodegeneration (#23) |
| | Tara Ghafari Hemispheric lateralisation of spontaneous brain oscillations predict volumetric asymmetries in the basal ganglia: Unveiling MEG biomarkers for early diagnosis of neurodegenerative diseases (#37) |
| | Jana Fehring Unraveling of interplay between cortical structure, function, and age using largescale time-series analysis (#63) |
| 13:05 | Lunch |
| 13:55 | Poster Session I |
| 14:45 | Coffee Break |
| | Session C3: Psychiatric and Developmental Disorders Chairs: Nikita Agarwal and Lorena Cecilia López Steinmetz |
| 15:05 - 17:00 | Peter Uhlhaas (Keynote) Gamma-band oscillations and schizophrenia: A translational and developmental perspective |
| | Marieke van Vugt From mind-wandering to depression: Using spontaneous thinking to develop EEG biomarkers of rumination |
| | Daniel Kluger Multimodal brain-body coupling in health and disease (#58) |
| | Amirreza Nadimi Shahraki Neurocomputational characterisation of multisensory processing in autism and schizophrenia (#40) |
| | Antea D'Andrea Different mindfulness meditation styles are mediated by distinct MEG microstate dynamics and complexity patterns (#33) |
| | Domenico Voso Brain-fingerprinting correlates of the EEG response to transcranial magnetic stimulation (#25) |

Day 2: Thursday

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| | Session C1: Movement Disorders Chairs: Vadim Nikulin and Jasmin Del Vecchio Del Vecchio |
| 09:00 - 10:40 | Ashwini Oswal (Keynote) Title: TBA |
| | Rachel Spooner Magnetoencephalography for the investigation of distant deep brain stimulation effects in Parkinson's disease |
| | Moritz Gerster Levodopa-induced spectral modulation of STN-LFPs in Parkinson's disease patients - A multi-center comparison (#26) |
| | Zixiao Yin Basal ganglia-muscular communication is related to REM sleep behavior disorder in Parkinson's disease (#20) |
| | Jasmin Del Vecchio Del Vecchio Pallidal oscillations and clinical improvement in dystonia with deep brain stimulation (#56) |
| 10:40 - 11:25 | Coffee Break and Mind-Matching Session II |
| | Session M3: Machine Learning, Multivariate and Statistical Modeling Chairs: Sara Sommariva and Mohammad Orabe |
| 11:25 - 13:05 | Alain de Cheveigné Virtual electrode or virtual scalpel? A cancellation-based approach to data analysis and source localization |
| | TBA |
| | Sam Gijzen Self-supervised learning for encoding pathological between-subject information in EEG data (#29) |
| | Sotirios Papadopoulos Fast and reliable hand motor imagery decoding based on beta burst rate modulations (#18) |
| | Nikolai Kapralov Optimization of M/EEG spatial filters for extraction of ROI time series based on cross-talk function (#38) |
| | Benedikt Ehinger A general (cluster-) permutation test for mass-univariate linear mixed models (#19) |
| 13:05 | Lunch |
| | Session M1: Signal Processing and Time Series Modeling (Cont.) Chairs: Vittorio Pizzella and Nikolai Kapralov |
| 13:55 - 16:00 | Laura Marzetti (Keynote) Title: TBA |
| | TBA |
| | Vadim Nikulin Unifying neural oscillations and evoked responses |
| | Stefan Haufe Estimating across-site PAC, delays, and complex network properties under source mixing |
| | Pranay Yadav Mechanisms of modality-specific slowing of sensory processing due to ageing (#15) |
| 16:00 | Coffee Break |
| 16:20 | Photo |
| 17:30 | Social Event |
| 19:30 | Conference Dinner |

Day 3: Friday

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| | Session M4: Open Science Chairs: Tien Dung Nguyen and Anuja Negi |
| 09:00 - 10:40 | Guiomar Niso (Keynote) Beyond neural traces: Open and reproducible M/EEG research throughout the full cycle |
| | Adina Wagner DataLad - Data management for open science |
| | Thomas Binns and Tien Dung Nguyen ROIconnect and PyBispectra: Open-source toolboxes for advanced EEG signal processing and functional connectivity analysis (#30 and #31) |
| | Anuja Negi Investigating the effect of noise-level misspecification in M/EEG inverse solutions (#47) |
| 10:40 | Coffee Break |
| | Session M2: Hardware, Forward and Inverse Modeling Chairs: Laura Marzetti and Sikkum Rai |
| 11:00 - 12:30 | Jens Haueisen (Keynote) Title: TBA |
| | Tilmann Sander-Thömmes MEG with OPM sensors: Opportunities for signal processing and modeling |
| | Nils Harmening HArtMuT—Modeling eye and muscle contributors in neuroelectric imaging (#21) |
| | Marion Brickwedde Signal-to-noise comparison for auditory steady-state responses between EEG, OPM-MEG and SQUID-MEG – A validation study (#65) |
| 12:30 | Lunch |
| 13:20 | Poster Session II |
| 14:10 | Coffee Break |
| | Session C4: Epilepsy and Sleep Chairs: Kara Götz and Margarita Sison |
| 14:30 - 16:25 | Christophe Grova (Keynote) EEG/MEG source imaging applications in sleep and epilepsy |
| | Pieter van Mierlo Advanced EEG analysis in epilepsy: Localization and diagnosis |
| | Umesh Vivekananda The cognitive implications of epilepsy at a functional network and single neuronal level |
| | Margarita Sison Integrating subdural EEG-derived spectral and functional connectivity features of focal seizures to improve delineation of the epileptogenic zone (#45) |
| | Kara Götz Minimally invasive ictal EEG source localization including sphenoidal electrodes (#66) |
| 16:25 - 16:50 | Closing Remarks |