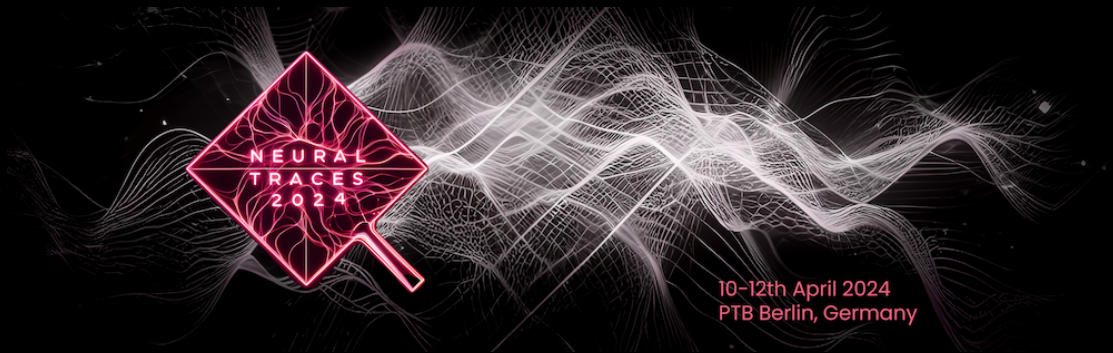


Neural Traces 2024

Advanced M/EEG Methods and Clinical Applications Workshop

10-12th April, 2024

Berlin, Germany



Poster Presentations

Poster Session I: April 10th, 13:55–14:45

Track M1. Signal processing and time series modeling

ID	Poster Title
	<i>Presenter(s)</i>

#15	Mechanisms of modality-specific slowing of sensory processing due to ageing <i>Pranay Yadav (MRC Cognition and Brain Sciences Unit, University of Cambridge, UK)</i>
#25	Brain-fingerprinting correlates of the EEG response to Transcranial Magnetic Stimulation <i>Domenico Voso (Neuroscience and Imaging Department, University of Chieti-Pescara)</i>
#32	Evaluating the reconstruction of complex network measures of functional brain connectivity from M/EEG data <i>Stefan Haufe (TU Berlin, PTB, Charité)</i>
#35	Beta activity shapes heartbeat evoked responses and somatosensory perception with opposing directions <i>Juanli Zhang (MPI for Human Cognitive and Brain Sciences Leipzig)</i>
#49	Robustly Estimating Transmission Time Delays under Mixed Noise Influence with Novel Cross- and Bispectrum Methods <i>Tin Jurhar (Radboud University Nijmegen, Technische Universität Berlin), Stefan Haufe (TU Berlin, PTB, Charité)</i>
#55	Distinguishing between- from within-site phase-amplitude coupling using antisymmetrized bispectra <i>Tien Dung Nguyen (Charité - Universitätsmedizin Berlin, BCCN Berlin), Stefan Haufe (TU Berlin, PTB, Charité)</i>
#60	Connectivity in the visuo-motor network during Smooth Pursuit <i>Yvonne Buschermöhle (Universität Münster)</i>

Track M3. Machine learning, multivariate and statistical modeling

ID	Poster Title	Presenter(s)
#18	Fast and reliable hand motor imagery decoding based on beta burst rate modulations	<i>Sotirios Papadopoulos (University Lyon 1, France)</i>
#19	A general (cluster-) permutation test for mass-univariate Linear Mixed Models	<i>Benedikt Ehinger (University of Stuttgart)</i>
#29	Self-supervised learning for encoding pathological between-subject information in EEG data	<i>Sam Gijsen (Charité – Universitätsmedizin Berlin)</i>
#36	Toward a general, discrete dictionary of events in human neurophysiology	<i>Jevri Hanna</i>
#38	Optimization of M/EEG Spatial Filters for Extraction of ROI Time Series based on Cross-Talk Function	<i>Nikolai Kapralov (Max Planck Institute for Human Cognitive and Brain Sciences, IMPRS NeuroCom)</i>
#48	Responses in oscillatory brain activity and electrodermal activity to interpersonal space intrusion	<i>Birgit Nierula, Andrej Prescher (both - Fraunhofer Heinrich-Hertz-Institute, Vision and Imaging Technologies Department, Interactive & Cognitive Systems Group)</i>
#57	Beyond oscillations? The potential of a diversified characterization of brain state changes	<i>Elio Balestrieri (Universität Münster)</i>

Track C2. Aging and dementia

ID Poster Title

Presenter(s)

#23 Hypoexcitation and connectome disintegration via whole-brain semi-empirical modeling in neurodegeneration

Carlos Coronel (Global Brain Health Institute (GBHI), University of California San Francisco (UCSF), and Trinity College Dublin)

#37 Hemispheric Lateralisation of Spontaneous Brain Oscillations Predict Volumetric Asymmetries in the Basal Ganglia: Unveiling MEG Biomarkers for Early Diagnosis of Neurodegenerative Diseases

Tara Ghafari (Centre for Human Brain Health, School of Psychology, University of Birmingham, UK)

#46 The normal ranges of robust MEG functional connectomes as functions of age and gender

Stefan Haufe (TU Berlin, PTB, Charité)

#53 Unraveling lifespan signatures: Time-series phenotyping and age prediction using MEG

Christina Stier (Universität Münster)

#63 Unraveling of Interplay between Cortical Structure, Function, and Age using Largescale Time-Series Analysis

Jana Fehring (Institute for biomagnetism and biosignalanalysis, Universität Münster, Germany)

Track C3. Psychiatric and developmental disorders

ID	Poster Title	Presenter(s)
#28	The Effects of Physical Exercise on Interoceptive Abilities of Patients with Schizophrenia	Deniz Yilmaz (Max Planck School of Cognition, LMU Klinikum)
#33	Different mindfulness meditation styles are mediated by distinct MEG microstate dynamics and complexity patterns	Antea D'Andrea (Department of Neuroscience, Imaging and Clinical Sciences, University of Chieti-Pescara, Italy)
#40	Neurocomputational characterisation of multisensory processing in Autism and Schizophrenia	Amirreza Nadimi Shahraki (School of Biomedical Sciences, School of Computing, University of Leeds Leeds, UK)
#54	Behavioural and Magnetoencephalographic Correlates of Auditory-Cue Fear Generalization	Jens Bölte (Institut für Psychologie, Universität Münster), Markus Junghöfer (Institute for Biomagnetism and Biosignalanalysis), Riccardo Bianco (Institute for Biomagnetism and Biosignalanalysis)
#58	Multimodal brain-body coupling in health and disease	Daniel Kluger (University of Münster)
#61	Understanding brain function development and heterogeneity using normative modeling in a pediatric rs-EEG dataset	Nikita Agarwal (Physikalisch-Technische Bundesanstalt)
#64	Slow Frequency Steady-State Visual Evoked Fields in Patients with Schizophrenia: A Study with Optically Pumped Magnetometers (OPMs)	Fabian Symanowski (Charité – Universitätsmedizin Berlin)

Poster Session II: April 12th, 13:15–14:05

Track M2. Hardware, forward and inverse modeling

ID	Poster Title	Presenter(s)
#21	HArtMuT—modeling eye and muscle contributors in neuroelectric imaging	<i>Nils Harmening (Technische Universität Berlin)</i>
#43	Joint Hierarchical Bayesian Learning of Sources and Noise for M/EEG Brain Source Imaging	<i>Ali Hashemi (TU Berlin, BIFOLD)</i>
#44	Establishing a framework to measure uncertainty calibration in M/EEG source imaging	<i>Ismail Huseynov (Physikalisch-Technische Bundesanstalt)</i>
#51	Comparing Individual and Standard BEM Head Models in a large EEG Sample	<i>Sikkum Rai (TU Berlin), Nikita Agarwal (PTB)</i>
#52	Enhancing Brain Source Reconstruction Through Pseudo-Inverse Initialization and 3D Neural Networks	<i>Marco Morik (TU Berlin, BIFOLD)</i>
#65	Signal-to-noise comparison for auditory steady-state responses between EEG, OPM-MEG and SQUID-MEG – a validation study	<i>Marion Brickwedde (Department of Child and Adolescent Psychiatry, Charité Universitätsmedizin, Berlin, Germany)</i>
#67	The effect of using template head models on ERP source estimation	<i>Emma Depuydt (Ghent University)</i>

Track M4. Open science

ID	Poster Title	Presenter(s)
#16	UnfoldBIDS.jl: Streamlining regression ERP analysis in Julia	René Skukies (University of Stuttgart, Stuttgart Center for Simulation Science)
#22	The Art of Brainwaves: A Survey on Event-Related Potential Visualization Practices	Vladimir Mikheev (University of Stuttgart)
#30	ROIconnect: An open-source EEGLAB plugin for linear and nonlinear functional connectivity analysis between brain source regions of interest	Tien Dung Nguyen (Charité - Universitätsmedizin Berlin, BCCN Berlin)
#31	PyBispectra: an open-source toolbox for advanced electrophysiological signal processing using the bispectrum	Thomas S. Binns (Movement Disorders Unit, Department of Neurology, Charité - Universitätsmedizin Berlin, Germany)
#39	Multivariate connectivity methods in the MNE-Python toolbox	Thomas S. Binns (Movement Disorders Unit, Department of Neurology, Charité - Universitätsmedizin Berlin, Germany)
#41	UnfoldSim.jl: A toolbox for simulating continuous EEG time series data	Judith Schepers (University of Stuttgart, Institute for Visualisation and Interactive Systems, Stuttgart, Germany)
#47	Investigating the effect of noise-level misspecification in M/EEG inverse solutions	Anuja Negi (Technical University of Berlin)

Track C1. Movement disorders

ID	Poster Title	Presenter(s)
#20	Basal ganglia-muscular communication is related to REM sleep behavior disorder in Parkinson's disease	Zixiao Yin
#26	Levodopa-induced spectral modulation of STN-LFPs in Parkinson's disease patients - a multi-center comparison	Moritz Gerster (MPI for Human Cognitive and Brain Sciences)
#42	Integration and segregation analysis of resting-state MEG in Parkinson's Disease	Igori Comarovschii (Karolinska Institutet), Pascal Helson (KTH Royal Institute of Technology)
#50	Distinct frequency-specific signatures of directed cortico-cortical interaction associated with levodopa-induced dyskinesias	Stefan Haufe (TU Berlin, PTB, Charité)
#56	Pallidal oscillations and clinical improvement in dystonia with deep brain stimulation	Jasmin Del Vecchio Del Vecchio (University Hospital and Julius-Maximilian-University Würzburg)

Track C4. Epilepsy, sleep, consciousness and other disorders

ID	Poster Title	Presenter(s)
#17	Effect of acute 24-Hour Sleep deprivation on Alpha, Beta, and Theta Power of the EEG signal	<i>Seyedeh Fatemeh Khatami Firoozabadi (University of the Pacific)</i>
#24	Generalized sleep decoding with basal ganglia signals in multiple movement disorders	<i>Zixiao Yin</i>
#27	Singularity Spectrum Analysis as an Approach for the Classification of Comatose patients' Vigilance State.	<i>Bechir Hbibi (Faculty of Sciences of Tunis, University of Tunis El Manar)</i>
#34	Relationship between pain intensity and EEG peak alpha frequency in new-onset Long COVID chronic pain	<i>Barbara Silva-Passadouro (Leeds Institute of Rheumatology and Musculoskeletal Medicine, School of Medicine, University of Leeds, UK)</i>
#45	Integrating subdural EEG-derived spectral and functional connectivity features of focal seizures to improve delineation of the epileptogenic zone	<i>Margarita Sison (Charité-Universitätsmedizin Berlin)</i>
#59	A functional network criterion for identifying epileptogenic zones from iEEG recordings	<i>Kelley Smith (Georgia State University)</i>
#66	Minimally Invasive Ictal EEG Source Localization Including Sphenoidal Electrodes	<i>Kara Götz (Charité - Universitätsmedizin Berlin; Epilepsy-Center Berlin-Brandenburg, Institute for Diagnostics of Epilepsy)</i>
