

9th

GRAZ BCI

Graz Brain-Computer Interface Conference

Join Forces - Increase Performance

9-12 SEPTEMBER 2024
GRAZ, AUSTRIA



Institute of Neural Engineering ■ Graz University of Technology

Program Book



bci.tugraz.at



@GrazBCI

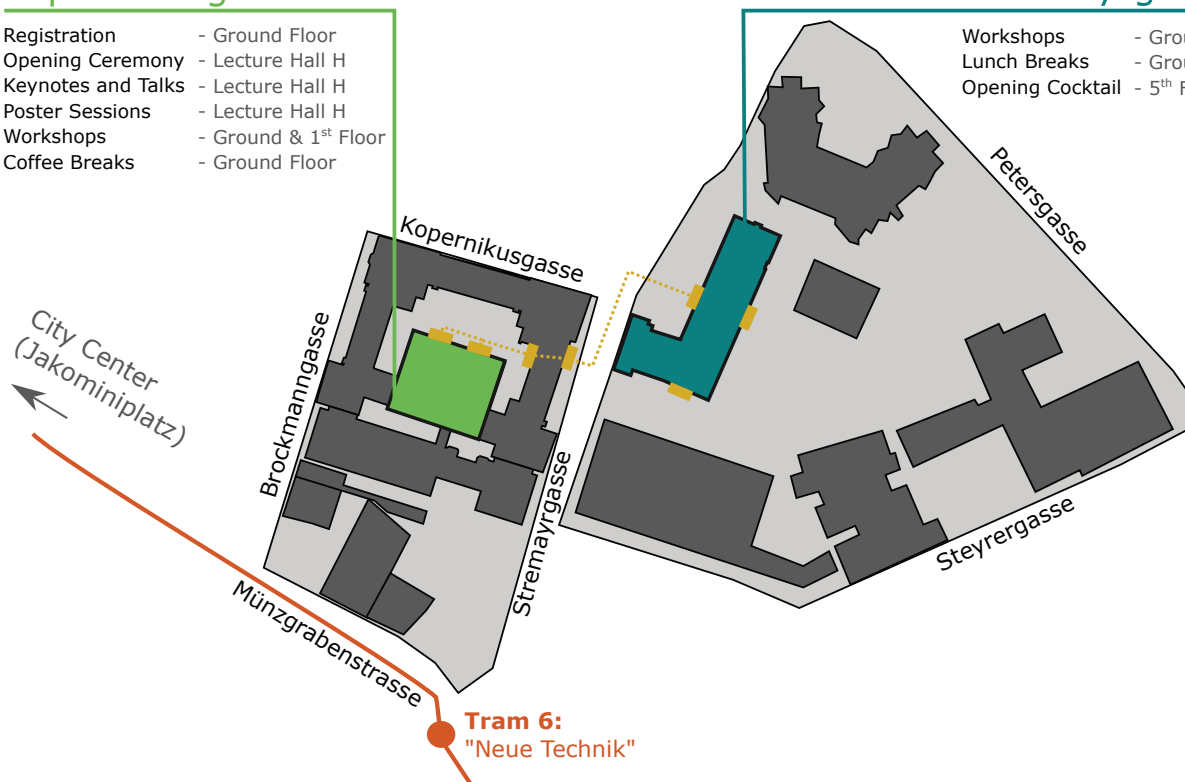


Kopernikusgasse 24

- | | |
|--------------------|----------------------------------|
| Registration | - Ground Floor |
| Opening Ceremony | - Lecture Hall H |
| Keynotes and Talks | - Lecture Hall H |
| Poster Sessions | - Lecture Hall H |
| Workshops | - Ground & 1 st Floor |
| Coffee Breaks | - Ground Floor |

Stremayrgasse 16

- | | |
|------------------|--|
| Workshops | - Ground & 1 st & 3 rd Floor |
| Lunch Breaks | - Ground Floor |
| Opening Cocktail | - 5 th Floor, Rooftop |



- Entrances
- Tram
- Tram stop

Join Forces - Increase Performance

We chose this year's conference title to concisely reflect the current state of the BCI research field. Researchers from both, the invasive and non-invasive communities, have increasingly worked together, forming a unified community. Techniques from the non-invasive field are now being applied in invasive research and vice versa. Additionally, we are at a point where the definition of a BCI is being questioned and needs to be reformulated. These questions and many more are crucial and need to be addressed achieving progress in BCI research.

The 9th Graz Brain-Computer Interface Conference (GBCIC2024) provides a platform for extensive discussions and exchanges among BCI experts from over 22 countries. We have received nearly 100 scientific contributions from approximately 476 authors, all peer-reviewed by at least two different reviewers. Accepted papers will be openly accessible and published by Verlag der TU Graz. The present conference proceedings are the result of this rigorous review process.

As a partnered event of the BCI Society, we have assembled a diverse and multifaceted program. We have organized several workshops as Satellite Events before the conference. During the conference, researchers will present their work either as talks or posters. We are fortunate that renowned experts in the field such as Dr. Andrea Kübler, Dr. Jennifer Collinger, Dr. Camille Jeunet-Kelway, Dr. Nick Ramsey, and Dr. Henri Lorch accepted our invitation to present keynote addresses at the conference. After a break of several years, GBCIC2024 will conclude with a tour to the South Styrian Vine Yards.

The BCI conferences held in Graz, Austria, are considered an international initiative that fosters stronger scientific cooperation in the BCI field.

We wish all participants an exciting and stimulating Graz BCI Conference 2024.



Gernot Müller-Putz, Conference Chair



Participants of the 8th Graz BCI Conference

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Conference Chair

Gernot R. Müller-Putz

Industrial Sponsoring

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Tangermann Michael

Thielen Jordy

Tonin Luca

Valeriani Davide

Vansteensel Mariska

Vourvopoulos Athanasios

Wimmer Michael

Wriessnegger Selina

Events

Opening Cocktail

Monday, September 9, 19:00

Stremayrgasse 16, 5th floor (Rooftop)

Conference Dinner

Wednesday, September 11, 19:30

Schloßberg 7, "Schloßberg Restaurant"

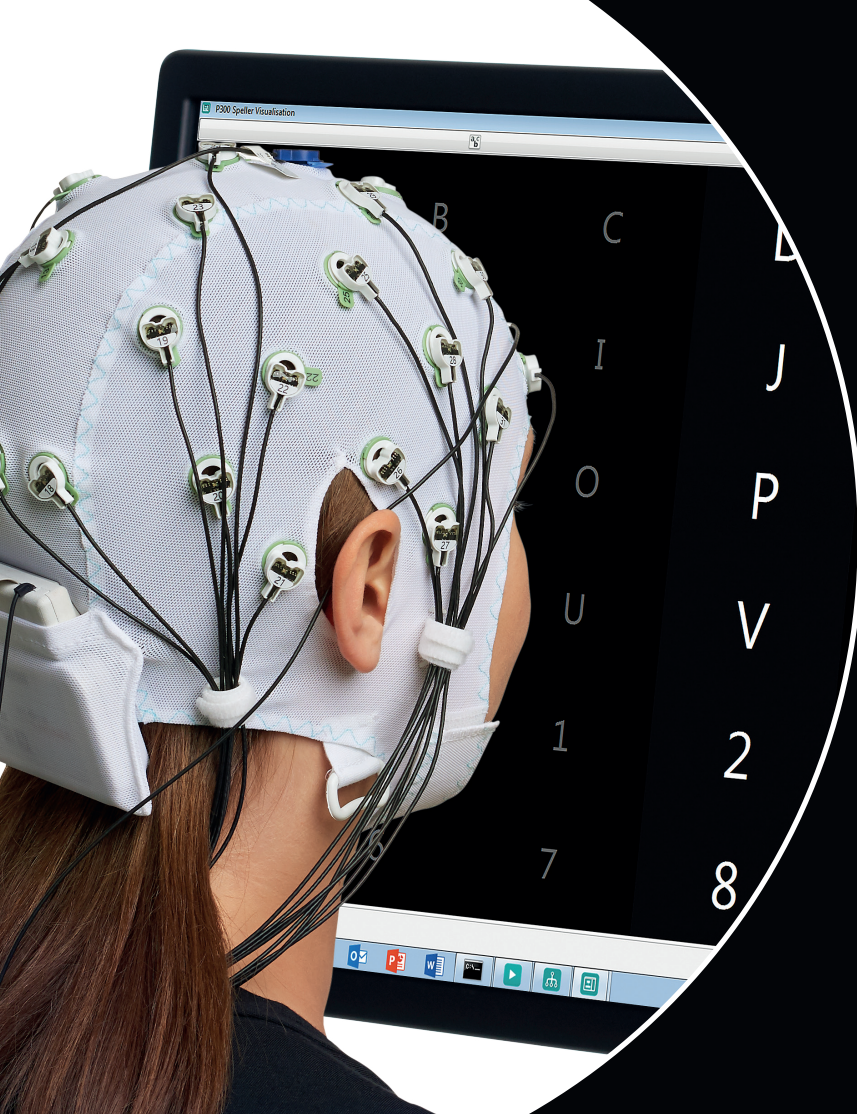
Vine Yard Tour

Thursday, September 12, ca. 14:00 - 18:00

Bus to the South of Styria

Schedule

Satellite Events					
September 9 Monday					
Workshop Registration					
08:30-08:45					
09:00-09:15	WS #1: Successful translation of neurotechnologies (<i>Stremayrgasse 16, Ground floor, HS BMT</i>)	WS #9: Aesthetic experience decoding with multi-modal passive brain-computer interfaces (<i>Stremayrgasse 16, 1st floor, BMT01046</i>)	WS #3: Navigating the latest advancements in c-VEP BCI: From experimental paradigms to decoding techniques (<i>Stremayrgasse 16, 3rd floor, BMT03094</i>)	WS #2: Designing brain-computer interfaces, from theory to real-life scenarios (<i>Kopernikusgasse 24, Ground floor, Lecture Hall H</i>)	WS #4: The role of proprioceptive feedback through embodied VR, robotics, and neuromodulation in restorative BCI's (<i>Kopernikusgasse 24, 1st floor, Room HS A</i>)
09:15-09:30					
09:30-09:45					
09:45-10:00					
10:00-10:15					
10:15-10:30					
10:30-10:45					
11:00-11:15	WS #6: Implantable devices for closed-loop neural sensing and stimulation (<i>Stremayrgasse 16, Ground floor, HS BMT</i>)	WS #7: Design an incredible neurogame with the unicorn unity interface (<i>Stremayrgasse 16, 1st floor, BMT01046</i>)	WS #8: MEDUSA©: An innovative software ecosystem to accelerate BCI and cognitive neuroscience experimentation (<i>Stremayrgasse 16, 3rd floor, BMT03094</i>)	WS #5: Variabilities in brain-computer interactions (<i>Kopernikusgasse 24, Ground floor, Lecture Hall H</i>)	
11:15-11:30					
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Workshops

Workshop #1: Successful translation of neurotechnologies

Monday, September 9, 9:00 - 14:00 - Stremayrgasse 16, Ground floor, Room HS BMT

Organizers

Gerwin Schalk, Mayo Clinic, Fudan University
Tim Denison, Oxford University
Kai J. Miller, Mayo Clinic Rochester
Phoenix Peng, NeuroXess
Michael Tangermann, Donders Institute/Radboud University

Description

BCI research has provided thousands of demonstrations that interfacing with the brain has the potential to be useful to patients. However, with few exceptions, this research has not yet resulted in solutions that can improve brain-related function of a large number of people. After an initial workshop in Shanghai in 2022, a Satellite Event at the BCI Meeting in June 2023, a Satellite Event at SfN in November 2023, and based on a formal analysis described in an upcoming article in Nature Reviews Bioengineering, we are now proposing another workshop that is dedicated to the question of how to translate neuroscientific achievements into clinically and commercially successful solutions. In this workshop series, world-reknown speakers from academia and industry discuss: 1) neurotechnologies and their historical context; 2) opportunities for translation; 3) scientific, technical, financial, and regulatory challenges; and 4) suggestions for the design, implementation, and optimization of non-invasive and invasive neurotechnologies.

Workshop #2: Designing brain-computer interfaces, from theory to real-life scenarios

Monday, September 9, 9:00 - 12:00 - Kopernikusgasse 24, Ground floor, Lecture Hall H "Ulrich Santner"

Organizers

Bruno Aristimunha, Université Paris-Saclay, Inria TAU, CNRS, France
Pierre Clisson, Timeflux, Paris, France
Marie-Constance Corsi, NERV team, ICM, Inria, INSERM, Paris-Sorbonne Université, Paris, France
Arthur Desbois, NERV team, ICM, Inria, INSERM, Paris-Sorbonne Université, Paris, France
Pierre Guetschel, Donders Institute for Brain, Cognition and Behaviour, Radboud University, Nijmegen, the Netherlands

Description

A guided tour of recent & innovative open-source tools helping to design and use EEG-based Brain-Computer Interfaces (BCI). We will explore real-world applications of BCI, the main paradigms used in the field, and the different types of variabilities to overcome. With HappyFeat, you will gain practical knowledge in extracting and selecting features from EEG signals. With Braindecode, you will discover tools to develop deep learning-based pipelines. Additionally, you will learn how to benchmark machine-learning frameworks using MOABB, a powerful tool that prioritizes reproducibility and replicability. Then, you will acquire practical experience through hands-on activities and tutorials. We will introduce Timeflux, a Python framework tailored for the development of realtime BCI applications. After delving into the challenges faced by end-users, we will unveil a novel BCI paradigm designed to streamline calibration time, prioritize visual comfort, and deliver high accuracy using dry EEG technology.

Workshop #3: Navigating the latest advancements in c-VEP BCI: From experimental paradigms to decoding techniques

Monday, September 9, 9:00 - 12:00 - Stremayrgasse 16, 3rd floor, Room BMT03094

Organizers

Jordy Thielen, Radboud University, Nijmegen, the Netherlands
Sara Ahmadi, Radboud University, Nijmegen, the Netherlands
Frederic Dehais, ISAE-SUPAERO, Toulouse, France
Pierre Clisson, Timeflux, France
Sebastien Velut, ISAE-SUPAERO, Toulouse, France
Victor Martinez-Cagigal, University of Valladolid, Valladolid, Spain
Eduardo Santamaría-Vázquez, University of Valladolid, Valladolid, Spain

Description

The goal of this workshop is to provide both theoretical as well as practical information on the latest developments of BCIs that use the code-modulated visual evoked potential (c-VEP) as measured by EEG. This workshop promises a comprehensive overview and hands-on exploration of both sophisticated experimental paradigms as well as cutting-edge decoding methods, both leading to higher performance as well as higher user-acceptance of the c-VEP BCI system. The workshop will start with an introduction to c-VEP, followed by an in-depth discussion of current developments in c-VEP experimental paradigms including burst codes, non-binary codes, and a novel auditory paradigm. The focus will then shift to decoding techniques, including trial-level prediction and zero-training, bitwise decoding using deep learning, and decoding using a Riemannian pipeline and deep learning. Finally, the workshop will conclude with interactive live c-VEP BCI demos featuring 'flickers on top' in combination with 'Timeflux', 'Medusa BCI', and 'PyntBCI'.

Workshop #4: The role of proprioceptive feedback through embodied VR, robotics, and neuromodulation in restorative BCI's

Monday, September 9, 9:00 - 12:00 - Kopernikusgasse 24, 1st floor, Room HS A

Organizers

Athanasios Vourvopoulos, Institute for Systems and Robotics (ISR-Lisboa)
Serafeim Perdikis, University of Essex
Silvia Orlandi, University of Bologna
Stefano Tortora, University of Padova
Luca Tonin, University of Padova

Description

Restorative Brain-Computer Interfaces (BCIs) can provide access to motor rehabilitation training to patients who lack volitional movement. This training is reinforced by rewarding feedback in order to strengthen key motor pathways that are thought to support motor recovery after stroke. Moreover, BCIs are capable of providing proprioceptive feedback to patients in order to close the intention-action-perception loop of the trained movement. This workshop intends to combine insightful talks and interactive discussions to illuminate the integration of proprioceptive feedback in motor function restoration through the use of embodied virtual reality (VR), robotics, and functional electrical stimulation (FES) for individuals with motor impairments. It will also delve into design principles, clinical applications, and future directions of these innovative technologies. Finally, by fostering dialogue and collaboration, this workshop aims to inspire novel approaches in neurorehabilitation, reshaping the landscape of non-invasive BCI development and enhancing the lives of those affected by motor disabilities.

Workshop #5: Variabilities in brain-computer interactions

Monday, September 9, 14:00 - 17:00 - Kopernikusgasse 24, Ground floor, Lecture Hall H "Ulrich Santner"

Organizers

Fabien Lotte, Inria Center at the University of Bordeaux, LaBRI, France
Maurice Rekrut, DFKI Saarbrücken, Germany
Marc Tabie, DFKI Bremen, Germany
Sébastien Rimbart, Inria Center at the University of Bordeaux, LaBRI, France
Tobias Jungbluth, DFKI Saarbrücken, Germany
Niklas Küper, DFKI Bremen, Germany

Description

Whereas BCIs are promising for many applications, they are not reliable. Their reliability degrades even more across users or when used across contexts (e.g., across days or for changing users' states) due to various sources of variabilities. Unfortunately, such variabilities are 1) often ignored in the literature, as most BCIs are assessed in a single context, for a single day, and with user-specific designs, and 2) poorly understood. Thus, for BCIs to fulfil their promises and to be used in practice outside laboratories, we need to make them robust to such variabilities. This workshop aims at contributing to this issue, by gathering speakers working on BCI variabilities, to survey the various known sources of variabilities for different BCI types, present some methods to address them, and discuss with the audience to identify the most promising next steps and challenges to tackle BCI variabilities.

Workshop #6: Implantable devices for closed-loop neural sensing and stimulation

Monday, September 9, 14:00 - 17:00 - Stremayrgasse 16, Ground floor, Room HS BMT

Organizers

Kai J. Miller, Pediatrics & Biomedical Engineering, Mayo Clinic Rochester, USA

Nuri F. Ince, Biomedical Engineering & Physiology, Mayo Clinic Rochester, USA

Martin Schüttler, CorTec GmbH, Freiburg, Germany

Peter Brunner, Neurology & Biomedical Engineering, Washington University School of Medicine

Description

This workshop is intended for scientists, engineers, and clinicians interested in using implantable devices for brain-computer interface and neuromodulation studies in the pre-clinical and clinical setting. The workshop will introduce the CorTec Brain Interchange System as an exemplary open-to-use device platform. The didactic objective this workshop is for the attendees to understand the range of scientific questions that can be asked, the translational applications that can be realized, and the scientific, engineering, clinical, and regulatory considerations that need to be addressed when using implantable devices that support neural sensing and stimulation. The practical objective of this workshop is for the attendees to gain hands-on experience in using the CorTec Brain Interchange System as an exemplary device platform in the laboratory setting, and to ask questions and form scientific collaborations with investigators experienced in using implantable devices for closed-loop neural sensing and stimulation.

Workshop #7: Design an incredible neurogame with the unicorn unity interface

Monday, September 9, 14:00 - 17:00 - Stremayrgasse 16, 1st floor, Room BMT01046

Organizers

Leonhard Schreiner, g.tec Medical Engineering GmbH, Graz, Austria

Description

BCI-controlled game has been at the core of BCI research for more than 20 years, yet building a fun experience with BCI carries several challenges. At g.tec we developed a toolkit for seamlessly integrating BCI interactions into the Unity game engine. This allows developers and designers to focus on the game mechanics without worrying about building a pipeline for signal processing and classification, and even to fast prototyping gamified research tasks. During this workshop the main functionalities of this Unity plugin are presented together with design guidelines for neurogames and a live demo of existing applications built with it. Then a hands-on session will follow, in which participants will transform an existing videogame into a neurogame by choosing and tuning the BCI paradigm of their preference.

Workshop #8: MEDUSA©: An innovative software ecosystem to accelerate BCI and cognitive neuroscience experimentation

Monday, September 9, 14:00 - 17:00 - Stremayrgasse 16, 3rd floor, Room BMT03094

Organizers

Eduardo Santamaría-Vázquez, Department of Signal Theory and Communications, University of Valladolid, Spain

Víctor Martínez-Cagigal, Department of Informatics, University of Valladolid, Spain

Description

This workshop introduces MEDUSA© (www.medusabci.com), an open-source Python based software ecosystem to develop brain-computer interface (BCI) systems and neuroscience experiments that aims to address the limitations of current BCI platforms. MEDUSA© includes a comprehensive suite of signal processing functions, deep learning architectures, and functional connectivity analysis tools. Moreover, MEDUSA© empowers researchers with ready-to-use BCI paradigms and cognitive neuroscience experiments while recording synchronized biosignal data (e.g., EEG, ECG, EOG, etc.), highlighting BCI spellers based on code-modulated visual-evoked potentials and eventrelated potentials, motor imagery, neurofeedback and neuropsychological evaluation tasks. Additionally, we will delve into the development of custom experiments for MEDUSA©, leveraging its modularity, flexibility, scalability and extensive compatibility with biosignal recording equipment to reduce implementation time. Finally, we will introduce how the platform fosters collaboration and reproducibility through an app market accessible via our website. Join us to learn more about this project in this practical workshop.

Workshop #9: Aesthetic experience decoding with multi-modal passive brain-computer-interfaces

Monday, September 9, 9:00 - 12:00 - Stremayrgasse 16, 1st floor, Room BMT01046

Organizers

Marc Welter, Inria Center at the University of Bordeaux, France

Dominik Welke, University of Leeds, UK, Max-Planck-Institute of Empirical Aesthetics, Germany

Description

Aesthetic experience is a complex phenomenon and highly individual (Vessel et al. 2018), but research suggests that experiencing art can be beneficial to health and well-being (Fancourt & Finn, 2019) or creativity (Welke & Vessel 2021). Passive Brain-Computer-Interfaces (BCIs) able to decode personal preference or other aspects of the aesthetic experience could be used to improve these benefits by selecting art works that evokes desirable neurophysiological responses. They could furthermore improve user experience in digital spaces by personalizing content without requiring explicit user feedback that might interrupt the experience. This workshop brings together BCI and Neuroaesthetic researchers working with various data modalities to aid the development of ecologically-valid BCIs for decoding aesthetic preferences. In particular we will discuss potential bio-markers of various facets of the complex aesthetic experience. Finally, challenges to BCIs decoding aesthetic experience outside the lab will be discussed, such as determining optimal calibration strategies for online decoding.



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Initiative Gehirnforschung Steiermark

INGE St. ist ein Netzwerk welches dem Austausch von Ideen und aktuellen Ergebnissen neurowissenschaftlicher Experten und Interessierter dient. Gegründet wurde INGE St. 2005 in Zusammenarbeit der steirischen Landesregierung mit den Grazer Universitäten bzw. Hochschulen. Seither werden von INGE St. Vorträge, Tagungen, Workshops, Netzwerktreffen und andere Veranstaltungen zu Themen der Gehirnforschung organisiert. Die zwei Hauptziele des Vereins sind die Stärkung der interdisziplinären Zusammenarbeit in den Neurowissenschaften und die Kommunikation relevanter Ergebnisse an die interessierte Öffentlichkeit.

7. Oktober 2024 / Öffentliches Symposium der INGE St. / „An Krisen wachsen. Forschung – Einsichten – Erfahrungen“ / 16:00 – 20:30 in der Aula der Karl-Franzens-Universität Graz.

Styrian Brain Research Initiative

INGE St. is a networking platform fostering the exchange of ideas and current results among researchers of all neuroscientific disciplines in Styria. The association was founded in 2005 by representatives of all universities in Styria where neuroscience research is being conducted. It is supported by the Styrian state government. INGE St. regularly organizes lectures, conferences, workshops, network meetings and other events. The two main goals of the association are fostering interdisciplinary cooperation in neuroscience and communicating relevant results to the public.



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Program

Tuesday, September 10

Paper no.

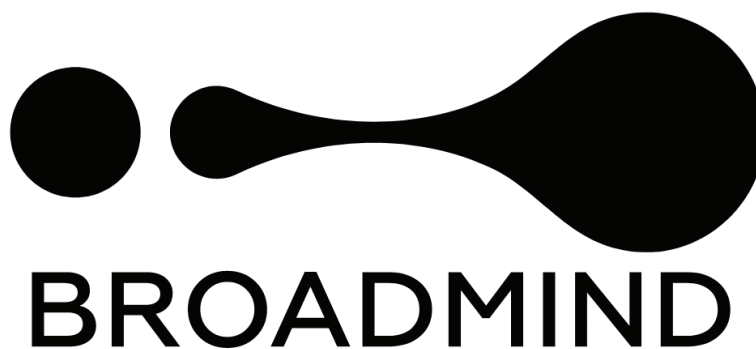
08:45		Opening Ceremony
09:00		Keynote: Implantable BCI systems for use in real-life: Exciting expectations versus a road paved with potholes Dr. Nick Ramsey, UMC Utrecht Brain Center, Department of Neurology and Neurosurgery, Utrecht, The Netherlands
10:00	26	Identifying new features for BCI control: Spectral changes in the motor thalamus reveal hand representation during overt and imagined movement Matthew R. Baker, Bryan T. Klassen, Michael A. Jensen, Gabriela Ojeda Valencia, Samantha A. Banks and Kai J. Miller
10:15	17	Predictors of ECoG-BCI performances across subjects and sessions derived from idle state characteristics Lucas Struber, Félix Martel, Serpil Karakas, Violaine Juillard, Angelina Bellicha, Fabien Sauter, Stéphan Chabardès, Henri Lorach, Guillaume Charvet and Tetiana Aksenova
10:30		<i>Coffee Break</i>
11:00	75	Double-blind and sham-controlled augmented reality EEG-neurofeedback study Lisa Berger, Guilherme Wood and Silvia Kober
11:15	13	High-performance neural decoding of 14 Dutch keywords Elena Charlotte Offenberg, Julia Berezutskaya, Zachary Freudenburg and Nick Ramsey
11:30	74	Introducing the use of thermal neurofeedback François Le Jeune, Emile Savalle, Anatole Lécuyer, Marc Macé, Pierre Maurel and Léa Pillette
11:45	45	Assessing calibration durations for c-VEP-based BCIs: Insights from non-binary patterns and spatial frequency variations Víctor Martínez-Cagigal, Álvaro Fernández-Rodríguez, Eduardo Santamaría-Vázquez, Ana Martín-Fernández and Roberto Hornero
12:00	4	Investigating temporal variations in MRCPs and their influence on classification: A 10-hour EEG study Johanna Egger, Kyriaki Kostoglou and Gernot R. Müller-Putz
12:15	65	Approximate UMAP allows for high-rate online visualization of high-dimensional data streams Peter Wassenaar, Pierre Guetschel and Michael Tangermann
12:30		<i>Lunch Break</i>
14:00		<i>Poster Session + Coffee</i>
16:00		Keynote: BCI-based neurofeedback training procedures to restore or improve motor skills: A user-centred approach Dr. Camille Jeunet-Kelway, University Bordeaux, CNRS, Institut de Neurosciences Cognitive et Intégratives d'Aquitaine, Bordeaux, France
17:00	37	Integrating CorTec Braininterchange device and BCI2000 with a cloud interface Filip Mivalt, Frederik Lampert, Max A. van den Boom, Jiwon Kim, Andrea Duque-Lopez, Will Engelhardt, Inyong Kim, Su-Youne Chang, Dora Hermes, Peter Brunner, Vaclav Kremen, Nuri F. Ince, Gerwin Schalk, Gregory A. Worrell and Kai J. Miller
17:15	46	Improved motor imagery decoding with spatiotemporal filtering based on beta burst kernels Sotirios Papadopoulos, Ludovic Darmet, Maciej J Szul, Congedo Marco, James J Bonaiuto and Jérémie Mattout
17:30	50	Reliability of individual task-related midline-frontal-theta frequency for neurofeedback training Maria Pfeiffer, Eva Masson, Andrea Kübler and Johannes Rodrigues
17:45	51	Motor imagery vividness and naturalistic inner speech habits in speech imagery classification Manuel Hons, Silvia Erika Kober, Selina Christin Wriessnegger and Guilherme Wood

09:00		Keynote: Hans Berger Lecture: Unleashing the brain's secret - really? Dr. Andrea Kübler, Institute of Psychology, University of Würzburg, Würzburg, Germany
10:00	5	S-JEPA: Towards seamless cross-dataset transfer through dynamic spatial attention Pierre Guetschel, Thomas Moreau and Michael Tangermann
10:15	60	To repeat or not to repeat? ERP-based assessment of the level of consciousness - A case study Lucas Struber, Félix Martel, Serpil Karakas, Violaine Juillard, Angelina Bellicha, Fabien Sauter, Stéphan Chabardès, Henri Lorach, Guillaume Charvet and Tetiana Aksenova
10:30		<i>Coffee Break</i>
11:00	52	REVIRE: A virtual reality platform for BCI-based motor rehabilitation Lucija Mihić Zidar, Philipp Raggam, Farhad Mohammadian, Aneta Barłoga and Moritz Grosse-Wentrup
11:15	75	Neurofeedback performance under challenging conditions: The theta-agency interplay Claire Dussard, Léa Pillette, Cassandra Dumas, Laurent Hugueville, Brian Lau, Camille Jeunet and Nathalie George
11:30	30	Finding the optimal six: Decoding from a large set of hand gestures with 7T FMRI for improved BCI control Maria Kromm, Sophia Schellander, Mariana Pedroso Branco, Mathijs Raemaekers and Nick Ramsey
11:45	24	Recording the SSSEP with the cEEGrid Jimmy Petit, Matthias Eidel, José Rouillard and Andrea Kübler
12:00	8	Introducing the ASME-speller, auditory BCI speller utilizing stream segregation: A pilot study Simon Kojima and Shin'Ichiro Kanoh
12:15	28	Detection of motion termination from EEG during the execution of continuous hand movement Markus Crell and Gernot R. Müller Putz
12:30		<i>Lunch Break</i>
14:00		<i>Poster Session + Coffee</i>
16:00		Keynote: Brain-controlled spinal cord stimulation to restore voluntary movements after spinal cord injury Dr. Henri Lorach, NeuroRestore, EPFL, Lausanne, Switzerland
17:00	20	Towards Riemannian EEG classifiers to detect awake and anesthetized states using median nerve stimulation Valérie Marissens Cueva, Sébastien Rimbert, Ana Maria Cebolla Alvarez, Mathieu Petieau, Viktoriya Vitkova, Iraj Hashemi, Guy Cheron, Claude Meistelman, Philippe Guerci, Denis Schmartz, Seyed Javad Bidgoli, Laurent Bougrain and Fabien Lotte
17:15	87	Bayesian model of individual learning to control a motor imagery BCI Côme Annicchiarico, Jérémie Mattout and Fabien Lotte
17:30	2	An EMG-based brain-computer interface for communication-impaired patients: A case study Philipp Raggam, Manuel Eder, Alexia-Theodora Popa, Peter Fugger and Moritz Grosse-Wentrup
17:45	69	Project NAFAS: Announcement and brief overview Laurens R. Krol and Thorsten O. Zander
19:30		<i>Conference Dinner</i>

Thursday, September 12

Paper no.

09:00		<u>Keynote:</u> Sensorimotor brain-computer interfaces for arm and hand function Dr. Jennifer Collinger, University of Pittsburgh
10:00	21	Neuronal avalanches for EEG-based motor imagery BCI Camilla Mannino, Marie-Constance Corsi, Pierpaolo Sorrentino and Mario Chavez
10:15	31	Transferring BCI models from calibration to control: Observing shifts in EEG features Ivo de Jong, Lüke van den Wittenboer, Matias Valdenegro-Toro and Andreea Sburlea
10:30	91	Comparing fingers and gestures for BCI control using an optimized classical machine learning decoder Dirk Keller, Mariska Vansteensel, Siamak Mehrkanoon and Mariana P. Branco
10:45	34	Dynamic brain networks in motor imagery-based BCI Tristan Venot, Arthur Desbois and Fabrizio De Vico Fallani
11:00		<i>Poster Session</i> + <i>Coffee</i>
12:30		<i>Awards and Closing Ceremony</i>



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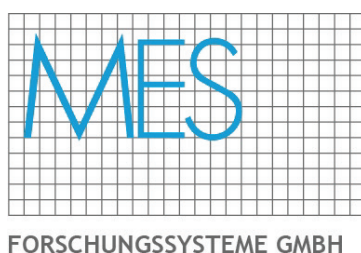


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