

# BIOMAG 2026 Poster List

*Posters are organized by scientific category. Within each category, posters are listed in numerical order. Please refer to the Poster Viewing Schedule for stand-by sessions.*

## Poster Viewing Schedule

| Poster Session | Date               | Time        | Location | Poster Stand-by                                                                                         |
|----------------|--------------------|-------------|----------|---------------------------------------------------------------------------------------------------------|
| I              | Sunday, August 23  | 15:35–16:35 | Hall 5   | Clinical: Poster 1–18<br>Cognition: Poster 71–90<br>OPM: Poster 148、150–161<br>Other: Poster 198–209    |
| II             | Monday, August 24  | 15:35–16:35 | Hall 5   | Clinical: Poster 19–34<br>Cognition: Poster 91–109<br>OPM: Poster 149、162–173<br>Other: Poster 210–221  |
| III            | Monday, August 24  | 16:35–17:35 | Hall 5   | Clinical: Poster 36–53<br>Cognition: Poster 110–128<br>OPM: Poster 174–186<br>Other: Poster 222–232     |
| IV             | Tuesday, August 25 | 15:35–16:35 | Hall 5   | Clinical: Poster 54–70<br>Cognition: Poster 129–147、244<br>OPM: Poster 187–197<br>Other: Poster 233–243 |

# Poster List

## Poster viewing I:

August 23, 2026, 15:35-16: 35

### Clinical

#### Poster 1

##### **Sleep, Inhibitory Control, and Prefrontal Cortex Activity in Children With Autism Spectrum Disorder**

Jialu Liu<sup>1,2</sup>, Takashi Ikeda<sup>1,2</sup>, Ken Yaoi<sup>3</sup>, Chiaki Hasegawa<sup>2,4</sup>, Sumie Iwasaki<sup>5</sup>, Mitsuru Kikuchi<sup>1,2,6</sup>, Yuko Yoshimura<sup>1,2,7</sup>

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<sup>2</sup> Research Center for Child Mental Development, Kanazawa University, Japan

<sup>3</sup> Faculty of Liberal Arts Department of Psychology, Teikyo University, Japan

<sup>4</sup> Faculty of Integrated Arts and Social Sciences Department of Psychology, Japan Women's University, Japan

<sup>5</sup> Institute for Promotion of Diversity and Inclusion, Kanazawa University, Japan

<sup>6</sup> Department of Psychiatry and Behavioral Science, Graduate School of Medical Science, Kanazawa University, Kanazawa, Japan

<sup>7</sup> Institution of Human and Social Sciences, Kanazawa University, Japan

#### Poster 2

##### **Atypical neural timescales in children with autism: a resting-state MEG study**

Orehkova E.V., Manyukhina V.O., Morozova M.V., Goiaeva D.E., Ovsianikova T.M., Prokofyev A.O., Stroganova T.A.

Center for Neurocognitive Research (MEG Center), Moscow State University of Psychology and Education, Moscow, Russian Federation

#### Poster 3

##### **P100m responses to vowel-like regularities in children with autism spectrum disorders (ASD): Atypical variability and links to language and cognitive abilities**

Ilacai V. Romero Reyes<sup>1</sup>, Kirill A. Fadeev<sup>1</sup>, Dzerassa E. Goiaeva<sup>1</sup>, Tatiana M. Ovsianikova<sup>1</sup>, Andrey O. Prokofyev<sup>1</sup>, Tatiana A. Stroganova<sup>1</sup>, Elena V. Orehkova<sup>1</sup>

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#### Poster 4

##### **Multi-dimensional OPM-MEG reveals coupling between epileptiform discharges and tics with dissociated neural profiles in a pediatric patient**

Yi Du<sup>1</sup>, Tianyu Wang<sup>2</sup>, Shiwei Li<sup>1</sup>, Bo Wang<sup>1</sup>, Pinan Liu<sup>1</sup>

<sup>1</sup> Department of neurosurgery, Beijing Tiantan Hospital, Capital Medical University, Beijing, China

<sup>2</sup> Institute of Biophysics, Chinese Academy of Sciences, Beijing, China

#### Poster 5

##### **SHANK3 microduplications in idiopathic ASD: distinct neurophysiological phenotype**

Olga Sysoeva<sup>1</sup>, Ivan Iourov<sup>2,3</sup>, Dzerassa Goyaeva<sup>4</sup>, Tatiana Oviannikova<sup>4</sup>, Andrey Prokofyev<sup>4</sup>, Tatiana Stroganova<sup>4</sup>

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<sup>3</sup> Veltischev Research and Clinical Institute for Pediatrics and Pediatric Surgery Pirogov Russian National Research Medical University, Moscow, Russia

<sup>4</sup> Center for Neurocognitive Research (MEG Center) of Moscow State University of Psychology and Education, Moscow, Russia

#### Poster 6

##### **Altered Neural Encoding and Network Dynamics of Vowel Structure Are Associated with Speech-in-Noise Deficits in Children with Autism**

Yuhan Zhang<sup>1</sup>, Yongjie Zhu<sup>1</sup>

<sup>1</sup> Dalian University of Technology, Dalian, China

#### Poster 7

##### **Development and Validation of a Multimodal Data-Based Scale for Predicting Epilepsy Surgery Outcomes**

Cai Yuan, MSc<sup>1</sup>, Fangjie Huang, PhD<sup>1,2</sup>, Yueqian Sun, PhD<sup>1</sup>, Shihao Ge, MSc<sup>1</sup>, Xiu Wang, PhD<sup>3</sup>, Xiaoqiu Shao, PhD<sup>1,5\*</sup>, Qun Wang, PhD<sup>1,4,5\*</sup>

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#### Poster 8

##### **(Towards) Linking Mechanical Properties with Neuronal Function**

Stefan Rampp<sup>1,2,4</sup>, Guillaume Flé<sup>2</sup>, Frederik Laun<sup>2</sup>, Daniel Delev<sup>1</sup>, Oliver Schnell<sup>1</sup>, Hajo Hamer<sup>5</sup>, Jan Hinrichsen<sup>6</sup>, Silvia Budday<sup>6</sup>, Arnd Doerfler<sup>4</sup>

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## Poster 9

### Assessment of the Utility of OPM-MEG in Preoperative Localization of Refractory Epilepsy: A Prospective Study

Yuanzhong Shen<sup>1</sup>, Feng Hu<sup>1</sup>, Kai Shu<sup>1</sup>

<sup>1</sup> Department of Neurosurgery, Tongji Hospital, Tongji Medical College, Huazhong University of Science and Technology, Wuhan, Hubei, China

## Poster 10

### Simultaneous OPM-MEG and DCS Cerebral Blood Flow Measurements of Neural-Vascular Dynamics

Erin Mahan<sup>1</sup>, Zacharias Tzitzikas<sup>2</sup>, Ali W. Elshaari<sup>2</sup>, Christoph Pfeiffer<sup>1</sup>, Daniel Lundqvist<sup>1</sup>

<sup>1</sup> Department of Clinical Neuroscience, Karolinska Institutet, Stockholm, Sweden

<sup>2</sup> Department of Applied Physics, KTH Royal Institute of Technology, Stockholm, Sweden.

## Poster 11

### Resting-State Multi-frequency Visual Motor Network Dysfunction in Juvenile Myoclonic Epilepsy: A MEG Study

Liqin Yang<sup>1,2</sup>, Yuping Wang<sup>1,4</sup>, Shujuan Tian<sup>1,3</sup>

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<sup>3</sup> Neuromedical Technology Innovation Center of Hebei Province, Shijiazhuang, Hebei, China

<sup>4</sup> Hebei Provincial Engineering Research Center of Psychosomatic Medicine, Shijiazhuang, Hebei, China

## Poster 12

### Neurophysiology-based biomarkers for psychogenic non-epileptic seizures

Vahe Poghosyan, Majed Al-Hameed, Nadia Al-Tamimi, Ali Al-Otaibi, Alia Fallatah, Fedaa Al-Mohammed and Tahani Al-Otaib  
King Fahad Medical City, Riyadh, KSA

## Poster 13

### Altered Brain-Network Connectivity and Neural Oscillatory Signatures of Inhibitory Control in Patients with Epilepsy

SUN Wei<sup>1,2,3#</sup>, YI Tong<sup>4#</sup>, SHENG Jing-Wei<sup>5</sup>, MENG Qiu-Jian<sup>6</sup>, JIANG Yu-Ying<sup>6</sup>, WU Jiang-Fen<sup>5</sup>, XING Hao-Yang<sup>1,7</sup>, LI JinMei<sup>4\*</sup>, CHEN Zheng-Ju<sup>1,2,3\*</sup>

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7. College of Physics, Sichuan University, Chengdu 610064, China. SUN Wei and YI Tong contributed equally to this work. \*Corresponding authors

## Poster 14

### MEG source localization in epilepsy: validation of dipolar methods thanks to simultaneous MEG-SEEG recordings

Maria Fratell<sup>1</sup>, Victor J. Lopez-Madrone<sup>1</sup>, Samuel Medina Villalon<sup>1,2</sup>, Samy Mokhtari<sup>1</sup>, Fabrice Bartolomei<sup>1,2</sup>, Jean-Michel Badier<sup>1</sup>, Francesca Bonini<sup>1,2</sup>, Christian-G. Bénar<sup>1</sup>

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## Poster 15

### The Role of Multi-delay Arterial Spin Labeling in Presurgical Evaluation of Drug-Resistant Epilepsy and Its Consistency with Magnetoencephalography

Chao Gao<sup>1</sup>, Qing Zhao<sup>2</sup>, Shujuan Tian<sup>1\*</sup>, Yuping Wang<sup>3\*</sup>

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## Poster 16

### Mapping Multi-frequency Absence Epilepsy Networks with both OPM-MEG and SQUID-MEG

Yuanfeng Zhou<sup>1</sup>, Tian Luo<sup>1</sup>, Yi Wang<sup>1</sup>, Yuming Peng<sup>2</sup>, Ming Ding<sup>2</sup>, Jing Xiang<sup>3</sup>

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## Poster 17

### Optimisation of the 'He OPM-MEG data acquisition procedure

Lydia Stoutah<sup>1,2</sup>, Christian Bénar<sup>1</sup>, Etienne Labyt<sup>2</sup>

<sup>1</sup> Institut de Neurosciences des Systèmes, Marseille, France

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## Poster 18

### Application of hidden Markov algorithm to epilepsy focus localization

Ke Bian<sup>1</sup>, Kunzhou Wei<sup>1</sup>, Zhidan Zhang<sup>1</sup>, Chunyan Cao<sup>2</sup>, Xiangyan Kong<sup>1</sup>

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## Cognition

### Poster 71

#### From high-energy consumption to efficient prediction: Developmental changes in neural dynamics of syllable processing

Xiaoqi Yang<sup>1</sup>, Yuting Men<sup>1</sup>, Hua Fan<sup>1</sup>, Ling Liu<sup>1</sup>

<sup>1</sup> Beijing Language and Culture University, Beijing, China

### Poster 72

#### MEG Decoding of Linguistic Categories in Children During Naturalistic Speech

Zhaowei Liu<sup>1</sup>, Xiaohan Zhang<sup>1</sup>, Jiani Ping<sup>1</sup>, Yirong Zhang<sup>1</sup>, Peng Gui<sup>1</sup>, Liping Wang<sup>1</sup>

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### Poster 73

#### The aperiodic 1/f exponent as a marker of task-dependent functional brain states in childhood

Finnilä Elena<sup>1</sup>, van Bijnen Sam<sup>2</sup>, Kujala Jan<sup>3</sup>, Parviainen Tiina<sup>4</sup>

<sup>1</sup> University of Jyväskylä, Centre for Interdisciplinary Brain Research, Finland

### Poster 74

#### Development of brain markers of auditory perception: comparison of brain responses recorded with MEG and simulation

B. Kolozsvári<sup>1,2</sup>, S. van Bijnen<sup>2,3</sup>, N. Tolley<sup>4</sup>, S. Jones<sup>4</sup>, T. Parviainen<sup>1,2</sup>

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### Poster 75

#### Constituent-Constrained Word Prediction during Language Comprehension

Jiajie Zou<sup>1,2</sup>, David Poeppel<sup>3,4</sup>, Nai Ding<sup>1</sup>

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### Poster 76

#### Efficient neural encoding of time intervals in speech and complex sound sequences

Honghua Chen<sup>1</sup>, Jing Wang<sup>1</sup>, Jiaxin Gao<sup>1</sup>, Nai Ding<sup>1,2,3\*</sup>

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### Poster 77

#### Hierarchical language processing relies on transformed reactivation of latent working memory

Jiaqi Li<sup>1</sup>, Yali Pan<sup>1,2</sup>, Hyojin Park<sup>2</sup>, Peter Hagoort<sup>3</sup>, Huan Luo<sup>4</sup>, Ole Jensen<sup>1</sup>

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### Poster 78

#### Fast and Slow Reading Engage Distinct Temporal Dynamics of Semantic Processing

Anastasia Neklyudova<sup>1</sup>, Gurgun Soghoyan<sup>2</sup>, Olga Martynova<sup>1,3</sup>, Olga Sysoeva<sup>1</sup>

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<sup>3</sup> Institute for Cognitive Neuroscience, HSE University, Moscow, Russia

### Poster 79

#### Temporal Hierarchy and Contextual Facilitation in Mandarin Nasal Coda Processing: A Time-Resolved MEG-MVPA Study

Xiaoshan Ying<sup>1</sup>, Li Zhong<sup>1</sup>, Yiqing Li<sup>1</sup>, Yuanmeng Lin<sup>1</sup>, Xiaoqi Yang<sup>1</sup>, Ling Liu<sup>1</sup>

<sup>1</sup> Beijing Language and Culture University, Beijing, China

### Poster 80

#### Attention to the auditory stream modulates auditory sustained negativity but not the neural processing advantage for vowels

Fadeev K.A.<sup>1</sup>, Morozova M.M.<sup>1</sup>, Romero Reyes, I.V.<sup>1</sup>, Orekhova E.V.<sup>1</sup>, Stroganova T.A.<sup>1</sup>

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### Poster 81

#### Mapping the Hierarchical Tuning of Visual Word Recognition using MEG and Fast Periodic Visual Stimulation

Daria Kostanian<sup>1</sup>, Ekaterina Kochetkova<sup>1,2</sup>, Olga Martynova<sup>1,2</sup>, Olga Sysoeva<sup>1,2</sup>.

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#### Poster 82

##### **A MEG-Benchmarked Preprocessing Multiverse for Decoding Naturalistic Speech from Portable EEG**

Yi Li<sup>1</sup>, Maya Inbar<sup>1</sup>, Laura Gwilliams<sup>2</sup>, Alexandra Woolgar<sup>1,3</sup>

<sup>1</sup> MRC Cognition and Brain Sciences Unit, University of Cambridge, Cambridge, UK

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#### Poster 83

##### **Active and passive exposure to speech sounds modifies change detection brain responses in adults, a MEG study**

Kaijun Jiang, Qin Li, Jari L. O. Kurkela, Simo Monto, Jarmo A.

Hämäläinen, Xueqiao Li, Astikainen Piia

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#### Poster 84

##### **Preview effects and natural reading in Chinese using Co-registration of EEG and eye-tracking**

Urs Maurer<sup>1,2</sup>, Lucas Chan<sup>1</sup>, Xin Huang<sup>1,3</sup>, Werner Sommer<sup>4,5,6</sup>, Olaf Dimigen<sup>7</sup>

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#### Poster 85

##### **MEG investigation of adjective order preferences as a syntactic constraint**

Boxuan Li<sup>1</sup>, Liina Pykkänen<sup>1,2</sup>

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#### Poster 86

##### **MEG beta burst suppression signals semantic event boundaries during naturalistic speech**

Abraham Goldstein<sup>1</sup>, Yael Caspi<sup>1</sup>

<sup>1</sup> Bar-Ilan University, Ramat Gan, Israel

#### Poster 87

##### **Isolating Language-Related Working Memory in the Prefrontal Cortex with Delayed Picture Naming and MEG**

Mana Tanifuji<sup>1</sup>, Jihyun Park<sup>1</sup>, Atsushi Mirura<sup>1</sup>, Itsuki Hamada<sup>1</sup>, Shinji Nishimoto<sup>2,3</sup>, Hiromu Sakai<sup>1</sup>

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#### Poster 88

##### **Neural ramping dynamics scale with relative progress in sentences, not elapsed time**

Leonardo Zeine<sup>1,2</sup>, Peter Donhauser<sup>1</sup>, Jiajie Zou<sup>1</sup>, Sonja A. Kotz<sup>3</sup>, David Poeppel<sup>4</sup>

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#### Poster 89

##### **HDND: Hierarchical Dynamic Neural Decoding Framework Unlocks Multilingual Word/Character Retrieval from Non-Invasive Brain Recordings**

Yueyang Li<sup>1</sup>, Shuran Chen<sup>1</sup>, Wai Ting Siok<sup>1,\*</sup>, Nizhuan Wang<sup>1,\*</sup>

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\* denotes the corresponding author

#### Poster 90

##### **Structure-Guided Predictive Preparation during Language Comprehension**

Zhao Xu<sup>1</sup>, Ziyu Wang<sup>1</sup>, Chunhe Li<sup>3</sup>, Jianfeng Feng<sup>1,2</sup>, Yuwei Jiang<sup>1,2</sup>

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## OPM

#### Poster 148

##### **A Compatibility Framework for Simultaneous OPM-MEG and High-Sampling-Rate fNIRS Acquisition**

Jingqi Song<sup>1</sup>, Xingyu Ru<sup>1</sup>, Rui Yang<sup>1</sup>, Yingchun Zhao<sup>1</sup>, Bangxu Fan<sup>1</sup>, Shuai Na<sup>1</sup>, Jia-Hong Gao<sup>1,2</sup>

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## Poster 150

### Assessing Neurovascular Coupling Using a Combined OPM-MEG and fNIRS Imager

Urban Marhl<sup>1</sup>, Pichaya Tappayuthpijam<sup>2</sup>, Stanislaw Wojtkiewicz<sup>3</sup>, Piotr Sawosz<sup>3</sup>, Vojko Jazbinšek<sup>1</sup>, Adam Liebert<sup>3</sup>, Tilmann Sander<sup>2</sup>

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## Poster 151

### Noise reduction in OPM-MEG using an optimized gradiometric sensor configuration

Shun Guo<sup>1,2</sup>, Tianyu Wang<sup>4</sup>, Li Zheng<sup>1</sup>, Zhengyan He<sup>1</sup>, Xingcai Cai<sup>1,2</sup>, Martin Dietz<sup>3</sup>, Fan Wang<sup>1</sup>, Yan Zhuo<sup>1</sup>

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<sup>4</sup> Zhongke Zhiying (Beijing) Technology Co., Ltd.

## Poster 152

### HMM-Distort: an end-to-end pipeline to quantify the performance of source reconstruction algorithms for OPM-based MEG

Alberto Mariola<sup>1</sup>, Chetan Gohil<sup>2</sup>, Gareth R. Barnes<sup>1</sup>

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## Poster 153

### Alternating Optimization for Gain, Orientation, and Position in Vector OPM-MEG

Keita Suzuki, Okito Yamashita

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## Poster 154

### 3D Visualization of Dual-Axis OPM-MEG Signals: Integrated Mapping of Radial and Tangential Magnetic Field Components

Tianyu Wang<sup>2</sup>, Shun Guo<sup>1</sup>, Li Zheng<sup>1</sup>, Zhengyan He<sup>1</sup>, Xingcai Cai<sup>1</sup>, Fan Wang<sup>1</sup>, Yan Zhuo<sup>1</sup>

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## Poster 155

### A Comparative Study of SQUID- and OPM-based MEG for Hippocampal Research

Fedosov Nikita<sup>2,3</sup>, Daria Medvedeva<sup>1,2</sup>, Alexei Ossadtchi<sup>1,2,3</sup>

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Russia

<sup>3</sup> AIRI, Artificial Intelligence, Research Institute, Moscow, Russia

## Poster 156

### OPM-FLUX: A Pipeline for OPM-MEG Data Analysis

Arnab Rakshit<sup>1</sup>, Tara Ghafari<sup>1</sup>, Anna Kowalczyk<sup>2</sup>, Ole Jensen<sup>1</sup>

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## Poster 157

### Optimizing HPI Coil Placement for Small Number of OPM-MEG Sensors

Hayato Watanabe<sup>1,2</sup>, Atsushi Shimojo<sup>2</sup>, Rikuma Itabashi<sup>3</sup>, Han Yu<sup>3</sup>, Ayuri Sakai<sup>4</sup>, Hiromu Sakai<sup>5</sup>, Koichi Yokosawa<sup>2</sup>

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## Poster 158

### A Transfer Learning and Global Artifact Inversion Framework for Near-Field Metallic Artifact Assessment in SERF-MEG

Cheng Qi<sup>1</sup>, Wen Li<sup>1</sup>, Fuzhi Cao<sup>1</sup>, Dongyu Liu<sup>1</sup>, Shiqiang Zheng<sup>1</sup>

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## Poster 159

### Single-trial assessment of gamma-frequency brain oscillations and their modulation using transcranial alternating current stimulation (tACS)

Vincent Jonany<sup>1</sup>, David Haslacher<sup>1</sup>, Stephen Robinson<sup>2</sup>, Tilmann Sander-Thömmes<sup>3</sup>, Jan Zerfowski<sup>1</sup>, Niels Peekhaus<sup>1</sup>, Peter Krüger<sup>3</sup> and Surjo R. Soekadar<sup>1</sup>

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## Poster 160

### An OPM-MEG Study on the Spatiotemporal Patterns and Language-Specific Neural Mechanisms of Auditory Processing of Chinese lexical tones

Hongming Zhang<sup>1#</sup>, Yunqi Shen<sup>1#</sup>, Weigong Pan<sup>1</sup>, Yuying Jiang<sup>2</sup>, Qiuqian Meng<sup>2</sup>, Lihai Tan<sup>3\*</sup>

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## Poster 161

### Cylindrical Magnetic Shielding System for Supine OPM-MEG

Dongxu Li<sup>1</sup>, Jingwei Sheng<sup>2</sup>, Bingjiang Lyu<sup>1</sup>, Kaiyan He<sup>1</sup>, Wenyu Gu<sup>2</sup>, and Jia-Hong Gao<sup>1,3</sup>

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## Other

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### Hyperscanning framework with two MEG systems

Tuomas Tolvanen<sup>1</sup>, Md Sadad Mahamud<sup>1</sup>, Jousmäki<sup>1</sup>, Veli-Matti Saarinen<sup>1</sup>, Andrey Zhdanov<sup>2</sup>, Zhiyuan Ma<sup>3</sup>, Wenzhang Liu<sup>3</sup>, Lauri Parkkonen<sup>2</sup>

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### Eye Tracking in MEG Hyperscanning

Veli-Matti Saarinen<sup>1</sup>, Tuomas Tolvanen<sup>1</sup>, Sadad Mahamud<sup>1</sup>, Zhiyuan Ma<sup>2</sup>, Wenzhang Liu<sup>2</sup>, Veikko Jousmäki<sup>1</sup>

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## Poster 200

### Using Multilayer MEG Source Reconstruction to Resolve Cortical Laminar Activity in Human V1.

Matteo Maspoli<sup>1,2,5</sup>, Danila Shelepenkov<sup>2,3</sup>, Solène Gailhard<sup>1,2</sup>, Sebastien Daligault<sup>4</sup>, Franck Lambertson<sup>4,5</sup>, Denis Schwartz<sup>3,4</sup>, \*Mathilde Bonnefond<sup>2,3</sup>, \*James J. Bonaiuto<sup>1,2</sup>

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## Poster 201

### MEG-Based Neural Spectral Gradients link Cortical Dynamics to Multiscale Brain Organization

Guoyuan Yang<sup>1</sup>, Xiaobo Liu<sup>2</sup>, Xinyu Wu<sup>1</sup>, Tianyi Yan<sup>3</sup>, Jia-Hong Gao<sup>4</sup>, Sylvain Baillet<sup>5</sup>

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## Poster 202

### HeteroRC: Decoding latent information from dynamic neural responses with interpretable heterogeneous reservoir computing

Runhao Lu<sup>1,2</sup>, Sichao Liu<sup>1,3</sup>, Yanan Liu<sup>2</sup>, John Duncan<sup>1</sup>, Richard N. Henson<sup>1</sup>, Alexandra Woolgar<sup>1</sup>

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## Poster 203

### Validating laminar inference using high-precision MEG

Jan Schalla<sup>1,2</sup>, Gelenar Marac<sup>1,2</sup>, Alfons Schnitzler<sup>1,2</sup>, Esther Florin<sup>1,2</sup>

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## Poster 204

### E/MEG alpha-band transient event characteristics during photic stimulation

Hannes Oppermann<sup>1</sup>, Ricardo Bruña<sup>2,3</sup>, Daniel Güllmar<sup>4</sup>, Carsten Klingner<sup>4</sup>, Jens Haueisen<sup>1,4</sup>

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## Poster 205

### LISA: Compact and Interpretable MEG Decoding of Natural Speech through Learned Spatio-Temporal Components

Ilia Semenov<sup>1,2</sup>, Daria Kleeveva<sup>2</sup>, Alexei Voskoboynikov<sup>2</sup>, Ivan Dakhtin<sup>2</sup>, Elizaveta Terekhova<sup>1</sup>, Alexei Ossadtchi<sup>1,2,3</sup>

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## Poster 206

### Forward Equations and Inversion Methods in Moment Domain For focally Extended Source Identification in MEG

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**Poster 207**

**Spatiotemporal Evaluation of EEG/MEG Inverse Methods  
Using a Synthetic Jansen–Rit Network Model of Visual Evoked  
Responses**

Qiong Tao<sup>1</sup>, Joonas Lahtinen<sup>1</sup>, Alexandra Koulouri<sup>1</sup>, Sampsa Pursiainen<sup>1</sup>

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**Poster 208**

**Mutual Component Analysis: extracting meaningful M/EEG  
components from coupled datasets**

Silvia Federica Cotroneo<sup>1</sup>, Marijn Van Vliet<sup>1</sup>, Riitta Salmelin<sup>1</sup>

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**Poster 209**

**Geometry-Aware Source Localization in Unshielded Scalar  
Magnetoencephalography**

Chenxi Sun<sup>1</sup>, Biying Zhao<sup>1</sup>, and Hong Guo<sup>1</sup>

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and Center for Quantum Information Technology, and Institute of Quantum  
Electronics, Peking University, Beijing 100871, China.

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### Clinical

#### Poster 19

##### **Motion tolerance in wearable MEG using dynamic field nulling**

Mainak Jas<sup>1,2</sup>, Teppei Matsubara<sup>1,2</sup>, Steven S. Stufflebeam<sup>1,2</sup>, Padmavathi Sundaram<sup>1,2</sup>, Seppo P. Ahlfors<sup>1,2</sup>

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#### Poster 20

##### **A Comparative Study of Detection and Localization of Interictal Epileptiform Discharges Using a 64-Channel Optically Pumped Magnetometer and a Superconducting Quantum Interference Device.**

Rui Wang<sup>2</sup>, Bingqian Li<sup>1</sup>, Daojin Wang<sup>1</sup>, Xintong Wu<sup>1</sup>, Peng Chen<sup>2</sup>, Stefan Rampp<sup>3</sup>, Haoyang Xin<sup>1</sup>, Jiani Chen<sup>1</sup>,

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#### Poster 21

##### **MEG in Surgical Epilepsy: Moving Forward or to the Front?**

Antol.Bagić, MD, PhD, FAES, FACNS

University of Pittsburgh, Pittsburgh, PA, USA

#### Poster 22

##### **Comparing brain responses to continuous and intermittent transcutaneous vagus nerve stimulation using magnetoencephalography**

Will Woods<sup>1</sup>, Charlotte Keatch<sup>2</sup>, Elisabeth Lambert<sup>1,3</sup>, Tatiana Kameneva<sup>2,3\*</sup>

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#### Poster 23

##### **The effects of MTL-precuneus HD-tACS on episodic memory and the underlying neural oscillatory mechanisms**

Mingyue Zhang<sup>1</sup>, Qiuxuan Yu<sup>2</sup>, Sanwang Wang<sup>1</sup>, Wenrong Wen<sup>1</sup>, Wenling Tu<sup>1</sup>, Yin-Jiao Li<sup>1</sup>, Jiahui Deng<sup>1, #</sup>

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Medical Sciences, Chinese Academy of Medical Sciences and Peking Union Medical College, Beijing, China

#### Poster 24

##### **Acupuncture at Neiguan (PC6) Modulates Frequency- and Region-Specific Cortical Oscillations: Evidence from Resting-State Magnetoencephalography**

Chun Sun<sup>1,2</sup>, Shizhe Deng<sup>1,2\*</sup>, Jiangwei Shi<sup>1,2\*</sup>

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#### Poster 25

##### **The neurocognitive effects of low dose psychedelics**

Vince Polito<sup>1</sup>, Judy D. Zhu<sup>1</sup>, Sophie Smit<sup>2</sup>, Eugenie Dale<sup>1</sup>, Paul Liknaitzky<sup>3</sup>, Paul F.Sowman<sup>4</sup>

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#### Poster 26

##### **Study on the effects and mechanisms of High-Frequency rTMS Stimulation of the Bilateral Parietal Cortex in the Treatment of Insomnia and Mild Cognitive Impairment**

Wenjie xi<sup>1,2</sup>, yuping wang<sup>1,2</sup>

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<sup>2</sup> Hebei Provincial Engineering Research Center of Psychosomatic Medicine

#### Poster 27

##### **Aperiodic and periodic EEG features combined with RMSSD may serve as multimodal arousal biomarkers in neuromodulation**

Siqi Zhang<sup>1,2</sup>, Zhongyu Zhou<sup>1,2</sup>, Wenshuang Wu<sup>1,2</sup>, Jiwei Li<sup>1,2</sup>

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#### Poster 28

##### **Differential Resting-State MEG Microstate Dynamics in Unilateral Sudden Sensorineural Hearing Loss: A Cross-Sectional Study**

Tian Ni<sup>1</sup>, Zhengju Chen<sup>1</sup>, Wei Sun<sup>1</sup>, Qiujian Meng<sup>2</sup>, Tianxu Kang<sup>2</sup>, Yuying Jiang<sup>2</sup>, Xinyi Yao<sup>1</sup>, Xiangling Zhang<sup>1</sup>, Shihong Yi<sup>1</sup>, Zhijun Fu<sup>1</sup>, Yu Zhao<sup>1</sup>, Haotian Liu<sup>1</sup>

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#### Poster 29

##### **MEG oscillation-based functional connectivity identifies clinically relevant depression phenotypes**

Wenya Liu<sup>1,2</sup>, Maria Vesterinen<sup>1,3</sup>, Alexandra Andersson<sup>1</sup>, Paula Partanen<sup>1,4</sup>, Samanta Knapič<sup>1,2</sup>, Joonas J. Juvonen<sup>2</sup>, Felix Siebenhüner<sup>1,2</sup>, Antti Salonen<sup>2</sup>, Hanna Renvall<sup>2,3</sup>, Risto J. Ilmoniemi<sup>2</sup>, Eero Castrén<sup>1</sup>, Erkki Isometsä<sup>5,6</sup>, Dimitri Hanna Renvall<sup>2,3</sup>, Risto J. Ilmoniemi<sup>2</sup>, Eero Castrén<sup>1</sup>, Erkki Isometsä<sup>5,6</sup>, Dimitri Van De Ville<sup>7,8</sup>, J. Matias Palva<sup>1,2,9</sup>, Satu Palva<sup>1,9</sup>

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#### Poster 30

##### **Dynamic Brain Network Spectral Signatures for Early Identification of Bipolar Disorder During Depressive Episodes: A MEG Study Using DyNeMo**

Moxuan Song<sup>1</sup>, Qian Liao<sup>2</sup>, Yi Xia<sup>1</sup>, Wenye Gong<sup>3</sup>, Lingling Hua<sup>1</sup>, Zhijian Yao<sup>1,3</sup>, Qing Lu<sup>2,4</sup>

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#### Poster 31

##### **Frequency-specific $\beta$ -band encoding and connectivity alterations during inhibitory control in schizophrenia**

Yinglin Han<sup>1</sup>, Yishan Du<sup>1</sup>, Xinxin Huang<sup>1</sup>, Zhijian Yao<sup>1</sup>

<sup>1</sup> The Affiliated Brain Hospital of Nanjing Medical University, Nanjing, China

#### Poster 32

##### **OPM-MEG uncovered multi-frequency band dysfunctions in the dorsal visual stream: Neural mechanisms underlying visually induced dizziness in vestibular migraine**

Qi Leng<sup>1</sup>, Yuming Peng<sup>2</sup>, Bo Deng<sup>1</sup>, Mengyuan Yuan<sup>1</sup>, Zhaoxia Li<sup>1</sup>, Ming Ding<sup>2</sup>, Yi Ju<sup>1</sup>

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#### Poster 33

##### **Proteinopathy-related changes in neurophysiological activity during preclinical Alzheimer's disease**

Jonathan Gallego-Rudolf<sup>1</sup>, Alex I. Wiesman<sup>2</sup>, Sylvia Villeneuve<sup>1</sup>, Sylvain Baillet<sup>1,3</sup>, the PREVENT-AD Research Group<sup>1</sup>

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#### Poster 34

##### **Modulatory Effects of GABA on Triple-Network Dynamics and Their Influence on Anhedonia and Cognitive Dysfunction in Depression**

Yiwen Wang<sup>1</sup>, Yingying Huang<sup>1</sup>, Mengzhi Zhang<sup>1</sup>, Azi Shen<sup>1</sup>, Wenye Gong<sup>1</sup>, Qinghua Zhai<sup>1</sup>, Rui Yan<sup>2</sup>, Zhijian Yao<sup>1,2\*</sup>, Qing Lu<sup>3,4\*\*</sup>

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## Cognition

#### Poster 91

##### **Spatiotemporal Dynamics of Language Switching in Chinese-Japanese Bilinguals: An MEG Study**

Jihyun Park<sup>1</sup>, Mana Tanifuji<sup>1</sup>, Shiji Nishimoto<sup>2,3</sup>, Hiromu Sakai<sup>1</sup>

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#### Poster 92

##### **Using co-registered MEG and eye-tracking to understand the cortical systems that support Chinese reading**

Erik D. Reichle<sup>1</sup>, Shuyuan Chen<sup>1</sup>, Roslyn Wong<sup>1</sup>, Lili Yu<sup>1</sup>, Judy Zhu<sup>1</sup>, & Aar on Veldre<sup>2</sup>

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#### Poster 93

##### **Neural signatures of orthographic retrieval difficulty in Chinese handwriting: an MEG study**

Lili Tian<sup>1,2,3</sup>, Mansour Taleshi<sup>2,4</sup>, Timo Saarinen<sup>3</sup>, Pietari Nurmi<sup>1,3</sup>, Ivan Vujaklija<sup>2\*</sup>, Mia Liljeström<sup>1,3\*</sup>

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#### Poster 94

##### **Temporal Dynamics of Neural Representation Formation Revealed by Time-Resolved Representational Similarity Analysis of MEG signals**

Itsuki Hamada<sup>1</sup>, Jion Tominaga<sup>2</sup>, Shinji Nishimoto<sup>3,4</sup>, and Hiromu Sakai<sup>1,5</sup>

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#### Poster 95

##### **Longitudinal neural tuning of predictive coding hierarchy during second language learning**

Lang Qin<sup>1</sup>, Lea Baillargeon<sup>1</sup>, Hao Wang<sup>1</sup>, Jia-Hong Gao<sup>1</sup>

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#### Poster 96

##### **Irregular click trains reveal the resonant nature of auditory neural responses**

Peter W. Donhauser<sup>1</sup>, Natalie Schaworonkow<sup>1</sup>, David Poeppel<sup>2</sup>

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#### Poster 97

##### **Neural encoding in a bilingual cocktail-party setting: When the native language is the distractor**

Xingyu Yang<sup>1,2</sup>, Chengyao Song<sup>1</sup>, Xinran Zhou<sup>1</sup>, Zhuocheng Li<sup>1</sup>, Ling Liu<sup>1</sup>

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#### Poster 98

##### **Cortico-kinematic and cortico-acoustic coherence during overt speech production in adults**

B. Kolozsvári<sup>1,2</sup>, W. Xu<sup>1,2</sup>, G. Gerike<sup>1,2</sup>, J. Kujala<sup>1,2</sup>, T. Parvianen<sup>1,2</sup>, P. Leppänen<sup>1,2</sup>, A. Noiray<sup>3</sup>, J. Häkäläinen<sup>1,2</sup>

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#### Poster 99

##### **Trial-wise MEG Encoding of PROBE-Derived Latent Control Variables in Human Prefrontal Cortex**

Leila Gurbanova<sup>1</sup>, Andrey Timashkov<sup>1</sup>, Viktoria Moiseeva<sup>1</sup>, Anna Shestakova<sup>1</sup>, Oksana Zinchenko<sup>1</sup>

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#### Poster 100

##### **Thalamocortical Disconnection and Cortical Compensation Underlie Memory Decline in Aging**

Sanwang Wang<sup>1</sup>, Qiuxuan Yu<sup>1,2</sup>, Lin Lu<sup>1</sup>

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#### Poster 101

##### **Task demands dynamically structure feature selection, routing, and integration in the human brain**

Yuening Yan<sup>1,\*</sup>, Jiayu Zhan<sup>2,3,4</sup>, Yaocong Duan<sup>1</sup>, Oliver G. B. Garrod<sup>1</sup>, Robin A. A. Ince<sup>1</sup>, Chen Zhou<sup>1</sup>, Rachael E. Jack<sup>1</sup>, & Philippe G. Schyns<sup>1,\*</sup>

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#### Poster 102

##### **Hippocampal phase-amplitude coupling encodes the distance to hidden goals**

Zimo Huang<sup>1,2,\*</sup>, Paris Goumas<sup>1,\*</sup>, James A Bisby<sup>3</sup>, Roman Rodionov<sup>2</sup>, Beate Diehl<sup>2</sup>, Andrew W McEvoy<sup>2</sup>, Umesh Vivekananda<sup>2,4</sup>, Matthew C Walker<sup>2</sup>, Neil Burgess<sup>2,4</sup>, Daniel Bush<sup>1</sup>

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#### Poster 103

##### **Preparatory rule representations are actively maintained during rule switching**

Yuenan Zheng<sup>1</sup>, Daniel Mitchell<sup>1</sup>, Alexandra Woolgar<sup>1</sup>

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#### Poster 104

##### Human hippocampal theta phase precession of button pressing during memory-guided navigation

Danying Wang, Zimo Huang, James A Bisby, Neil Burgess, Daniel Bush

#### Poster 105

##### THE PROBLEM IS NOT PREDICTION: NEURAL MECHANISMS OF PROBABILISTIC REINFORCEMENT LEARNING IN ADOLESCENTS

Pultsina K., Kozunova G.L., Chernyshev, B., Stroganova T

#### Poster 106

##### Structural Learning Shapes Narrative Organization and Resting Neural Replay

Elie El Rassi

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#### Poster 107

##### Narrative Structure Constrains the Influence of Dynamic Emotional Boundaries on Event Sequence Processing

Yuyue Dong<sup>1,2</sup>, Xianfeng Ding, Xin Hao<sup>1,2\*</sup>

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#### Poster 108

##### Fluctuations in sustained attention performance relate to both periodic and aperiodic components of the MEG spectrum

Yann Harel<sup>1</sup>, Clara El Khantour<sup>1</sup>, Arthur Dehgan<sup>1</sup>, Antoine Bellemare-Pepin<sup>1</sup>, Mathieu Landry<sup>2</sup>, Annalisa Pascarella<sup>3</sup>, Karim Jerbi<sup>1</sup>

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#### Poster 109

##### Goal Availability at Decision Point Shapes Prospective Temporal Representation During Goal-directed Navigation

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## OPM

#### Poster 149

##### Performance of Hybrid OPM- and SQUID-MEG Hyperscanning Evaluated by Verbal Communication Task

Yuki Ushijima<sup>1</sup>, Hayato Watanabe<sup>2,3</sup>, Rikuma Itabashi<sup>1</sup>, Atsushi Shimojo<sup>3</sup>, Hiromu Sakai<sup>4</sup>, Yuki Ueda<sup>5</sup>, Noriki Ochi<sup>6</sup>, Takuya Saito<sup>7</sup>, Koichi Yokosawa<sup>3</sup>

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#### Poster 162

##### Initial System-Level Validation of a 312-Channel Dual-Axis OPM-MEG System for High-Density Whole-Head Neuroimaging

Yuming Peng<sup>1</sup>, Bing Yan<sup>1</sup>, Yifu Cao<sup>1</sup>, Haonan Zhang<sup>1</sup>, Ming Ding<sup>1</sup>

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#### Poster 163

##### A high-performance active magnetic shielding system designed for multimodal neuroimaging based on OPM-MEG

Yingchun Zhao<sup>1</sup>, Dongxu Li<sup>2</sup>, Rui Yang<sup>1</sup>, Jingqi Song<sup>1</sup>, Zhuozhang Chen<sup>1</sup>, Xingyu Ru<sup>1</sup>, Jia-Hong Gao<sup>1,2</sup>

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#### Poster 164

##### Inter-subject correlations in OPM-MEG during movie viewing

Paavo Hietala<sup>1,2</sup>, Anni Forsman<sup>1</sup>, Mikael Grön<sup>1</sup>, Linda Henriksson<sup>1</sup>, Lauri Parkkonen<sup>1</sup>

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#### Poster 165

##### Perceptual Access More Than Emotion Category Modulates Aperiodic Reward Signals: An OPM-MEG Study

Pan Wang<sup>1</sup>, Hai-Teng Jiang<sup>1,2\*</sup>

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#### Poster 166

##### Test-Retest Reliability of Duration Mismatch Negativity Measured with Optically Pumped Magnetometer Magnetoencephalography

Liang He<sup>1</sup>, Yitong Wang<sup>1</sup>, Qiujuan Meng<sup>2</sup>, Yuying Jiang<sup>2</sup>, Jiangfen Wu<sup>3</sup>, Jingwei Sheng<sup>3</sup>, Xiaobin Ding<sup>1,\*</sup>

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#### Poster 167

##### **An Integrated OPM-MEG System for Wearable and Multichannel Applications: Validation Through Phantom and Multi-Paradigm Human Experiments**

Rui Yang<sup>1</sup>, Kaiyan He<sup>2</sup>, Yuyao Cai<sup>1</sup>, Zeyu Jin<sup>1</sup>, Hao Cheng<sup>2</sup>, Bingjiang Lyu<sup>1</sup> and Jia-Hong Gao<sup>1,2</sup>

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#### Poster 168

##### **Towards Wearable High-Density MEG: A Compact, Low-Power, and Scalable OPM-MEG Hardware with Automated Control**

Kaiyan He<sup>1</sup>, Rui Yang<sup>2</sup>, Congcong Li<sup>1</sup>, Yuyao Cai<sup>2</sup>, Zeyu Jin<sup>2</sup>, Hao Cheng<sup>1</sup>, Bingjiang Lyu<sup>1</sup> and Jia-Hong Gao<sup>1,2</sup>

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#### Poster 169

##### **Quiet Quitting Tendency Is Associated with Altered Oscillatory Emotional Reactivity: An OPM-MEG Study in Female Healthcare Workers**

Xin Zhang<sup>1,2</sup>, Huaineng Wu<sup>3</sup>, Liyu Cao<sup>1,2</sup>, Haiteng Jiang<sup>1,2,3</sup>

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#### Poster 170

##### **Optimization of optically-pumped magnetometer arrays for cerebellar magnetoencephalography**

Santtu Roos<sup>1</sup>, Matti Hämäläinen<sup>1</sup>, Joonas Iivanainen<sup>1</sup>

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#### Poster 171

##### **Mobile, On-Scalp MEG at Low Cost using OPM Modules**

Nicholas A. Alexander<sup>1</sup>, Alberto Mariola<sup>1</sup>, Sahitya Puvvada<sup>1</sup>, Yulia Bezsudnova<sup>1</sup>, Tim M. Tierney<sup>1</sup>, Gareth R. Barnes<sup>1</sup>, Martina F. Callaghan<sup>1</sup>

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#### Poster 172

##### **Real-World Neuroimaging: Magnetoencephalography Without a Shielded Room**

Yulia Bezsudnova<sup>1</sup>, Nicholas A. Alexander<sup>1</sup>, Stephanie J. Mellor<sup>2</sup>, Sergey Mitryukovskiy<sup>3</sup>, Rudy Romain<sup>3</sup>, Agustin Palacios-Laloy<sup>3</sup>, Gareth R. Barnes<sup>1</sup>, Martina F. Callaghan<sup>1</sup>, Tim M. Tierney<sup>1</sup>

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#### Poster 173

##### **Low-power consumption SERF OPM for MEG**

Zehuan Zhao<sup>1</sup>, Kaiyan He<sup>2</sup>, Yuyao Cai<sup>1</sup>, Rui Yang<sup>1</sup>, Yingchun Zhao<sup>1</sup>, Zeyu Jin<sup>1</sup>, Jia-Hong Gao<sup>1,2</sup>

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### Other

#### Poster 210

##### **Pyriodic: A python package for analysis of respiration data**

Laura Bock Paulsen<sup>1</sup>, Lau Møller Andersen<sup>1,2</sup>

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#### Poster 211

##### **Novel ICA method to detect travelling waves in MEG data**

Yaroslav Kerechani<sup>1</sup>, Pavel Bobrov<sup>1</sup>

<sup>1</sup> HSE University, Moscow, Russia

#### Poster 212

##### **BLCU-1000: A Cross-Modal, Multi-Script MEG Benchmark Dataset for Covert and Overt Speech**

Zhuocheng Li<sup>1</sup>, Yanjia Zeng<sup>1</sup>, Xiaoqi Yang<sup>1</sup>, Xiaoshan Ying<sup>1</sup>, Hongwei Bian<sup>1</sup>, Ling Liu<sup>1</sup>

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#### Poster 213

##### **Fidelity of non-cerebral source localization in MEG depends on the strength and topography of simultaneous cerebral activation: a simulation study**

Line Kruse<sup>1</sup>, Laura Bock Paulsen<sup>1</sup>, Lauri Parkkonen<sup>2</sup>, Lau Møller Andersen<sup>1,3</sup>

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#### Poster 214

##### Multiscale Neural Fingerprints Across EEG, MEG, and fMRI

Anya Dietrich<sup>1</sup>, Yuranny Cabral Calderin<sup>3</sup>, Yue Sun<sup>1,6</sup>, Michael Wibral<sup>5</sup>, Oliver Tüscher<sup>2,4</sup>, Georgios Michalareas<sup>1,6,7</sup>

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#### Poster 215

##### Connectivity Informed Standardized Kalman Filtering for Spatio-Temporal EEG/MEG Source Localization

Gihani Seneviratne<sup>1</sup>, Dilshanie Prasikala<sup>1</sup>, Sampsa Pursiainen<sup>1</sup>, Joonas Lahtinen<sup>1</sup>, Alexandra Koulouri<sup>1</sup>

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#### Poster 216

##### Dynamic Source Reconstruction for MEG: A Nonlinear State-Space Framework for Recovering Propagating Cortical Patterns

Anna Kubiak<sup>1</sup>, Nikita Fedosov<sup>1</sup>, Alexei Ossadtchi<sup>1,2</sup>

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#### Poster 217

##### The role of structural heterogeneity in shaping brain flexibility

Matteo Neri<sup>1,2</sup>, Marianna Angioielli<sup>3,5</sup>, Elsa Bourgue<sup>3</sup>, Camille Mazzara<sup>3,6</sup>, Emahnuel Troisi Lopez<sup>4</sup>, Matteo Demuru<sup>5</sup>, Mario De Luca<sup>5</sup>, Enrica Gallo<sup>5</sup>, Mario Quarantelli<sup>7</sup>, Andrea Brovelli<sup>1</sup>, Pierpaolo Sorrentino<sup>3,5</sup>

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#### Poster 218

##### Toward Quantum-Ready Residual-Aware Binary Optimization for Sparse MEG Source Localization

Arim Ryou<sup>1</sup>, Kiwoong Kim<sup>1</sup>

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#### Poster 219

##### MEG Inversion using Heterogeneous Source Model with Spherical Poisson Wavelet Expansion for Estimating the Epileptic Foci

Kohei Shimazu<sup>1</sup>, Yuichiro Shiota<sup>2</sup>, Takaaki Nara<sup>1</sup>

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#### Poster 220

##### Interpretable Decoding of Frequency-Resolved Functional Connectivity

Santeri Ruuskanen<sup>1</sup>, Eero Saarro<sup>1</sup>, Carola Caivano<sup>1</sup>, Lauri Parkkonen<sup>1</sup>, Ivan Zubarev<sup>1,2</sup>

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#### Poster 221

##### Impact of Sensor Type, Shielding, and Denoising on MEG Signal Quality and Source Localization

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**Poster viewing III:**  
**August 24, 2026, 16:35-17: 35**

**Clinical**

**Poster 36**

**State-dependent spectral slowing in Lewy body dementia: MEG resting-state dynamic connectivity study**

Simon Griffin<sup>1,2</sup>, Isaac Yu<sup>3</sup>, Zohreh Morshedizad<sup>1,2</sup>, Anastasia Barnes<sup>1,2</sup>, Melissa J. Armstrong<sup>1,2</sup>, Abbas Babajani-Feremi<sup>1,2</sup>

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**Poster 37**

**Task-Specific Gamma-Band Alterations in Laryngeal dystonia: An OPM-MEG Study**

Jiahao Li<sup>1</sup>, Imadoudini Hassimi Safia<sup>2</sup>, Hanbing Shao<sup>1</sup>, Qingli Yu<sup>2</sup>, Liqiong Liu<sup>1</sup>, Xue Huang<sup>1</sup>, Wei Sun<sup>1</sup>, Yuying Jiang<sup>3</sup>, Qiujian Meng<sup>3</sup>, Hui Yang<sup>2</sup>, Xiaoqi Huang<sup>1</sup>

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**Poster 38**

**Functional Connectivity Characteristics of the Frontoparietal Control Network in Major Depressive Disorder Patients with Insomnia: A Magnetoencephalography Study**

Yingying Huang<sup>1</sup>, Yiwen Wang<sup>1</sup>, Du Yishan<sup>2</sup>, Lu Qing<sup>3</sup>, Yao Zhijian<sup>1,2</sup>

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**Poster 39**

**Task-Based OPM-MEG Reveals Hippocampal Oscillatory Markers of Immediate Memory Across Two Working-Memory Paradigms in Older Adults**

Xiaoyu Wang<sup>1</sup>, Yuming Peng<sup>2</sup>, Bing Yan<sup>2</sup>, Jiafeng Wang<sup>1</sup>, Yun Zhang<sup>2</sup>, Yixiang Zhang<sup>2</sup>, Yan Wang<sup>1</sup>, Ziwei Chen<sup>1</sup>, Chunyan Li<sup>1</sup>, Lin Cong<sup>1</sup>, Chengxuan Qiu<sup>1</sup>, Ming Ding<sup>2</sup>, Lin Song<sup>1</sup>, Yifeng Du<sup>1</sup>

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**Poster 40**

**Reduced neural sensitivity to semantic relatedness in mild cognitive impairment**

Pietari Nurmi<sup>1</sup>, Timo Saarinen<sup>2</sup>, Antti Kinnunen<sup>2,4</sup>, Ville Mäntynen<sup>2</sup>, Jaakko Hotta<sup>2,3</sup>, Anne Koivisto<sup>5</sup>, Hanna Renvall<sup>1,2</sup> and Mia Liljeström<sup>1,2</sup>

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**Poster 41**

**Heartbeat-Evoked Responses during Bayesian Learning in Bipolar Disorder and Healthy Controls: An MEG Study**

Marina Ivanova<sup>1</sup>, Vadim Nikulin<sup>2</sup>, Maria Herrojo Ruiz<sup>3</sup>

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**Poster 42**

**Altered time-resolved cortical hierarchy and synergy function in first-episode drug-naïve schizophrenia during sensory attenuation: A MEG study**

Lingling Hua<sup>1</sup>, Yinglin Han<sup>1</sup>, Shuangyu Cai<sup>1</sup>, Yishan Du<sup>1</sup>, Junling Sheng<sup>1</sup>, Chen He<sup>1</sup>, Yingying Huang<sup>2</sup>, Xinxin Huang<sup>1</sup>, Li Xue<sup>3</sup>, Junneng Shao<sup>1</sup>, Qiao Liao<sup>3</sup>, Ming Xiao<sup>4</sup>, Zhijian Yao<sup>1,2</sup>, Qing Lu<sup>3,5</sup>

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**Poster 43**

**Neuromelanin-sensitive imaging study in patients with bipolar disorder and their unaffected first-degree relatives**

Wang Yujue<sup>1</sup>, Lin Pinhua<sup>1</sup>, Bao Junchen<sup>2</sup>, Xiong Tingting<sup>2</sup>, Hua Lingling<sup>2</sup>, Yan Rui<sup>2</sup>, Shi Jiabo<sup>2</sup>, Lu Qing<sup>3,4</sup>, Yao Zhijian<sup>1,2,\*</sup>

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#### Poster 44

##### **Major Depressive Disorder with Mixed Features Exhibits Altered Structural-Functional Coupling: A Resting-State MEG and DTI Study**

Tingting Xiong<sup>1</sup>, Hao Tang<sup>1</sup>, Yujue Wang<sup>2</sup>, Zhijian Yao<sup>1,2,3</sup>, Qing Lu<sup>3,4</sup>

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#### Poster 45

##### **Central autonomic network oscillatory alterations, heart rate variability, and symptom severity in major depressive disorder: a cross-sectional case-control MEG study**

Junling Sheng<sup>a,1</sup>, Yi Xia<sup>a,1</sup>, Shuangyu Cai<sup>a</sup>, Yujue Wang<sup>a,b</sup>, Lingling Hua<sup>a</sup>, Yishan Du<sup>a</sup>, Hao Sun<sup>a,b</sup>, Na Shen<sup>a,b</sup>, Yingying Huang<sup>a,b</sup>, Yinglin Han<sup>a</sup>, Wei You<sup>a</sup>, Qian Liao<sup>c,d</sup>, Han Zhang<sup>c,d</sup>, Jiabo Shi<sup>a</sup>, Hao Tang<sup>a,\*</sup>, Qing Lu<sup>c,d,\*\*</sup>, Zhijian Yao<sup>a,b,c,\*\*\*</sup>

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#### Poster 46

##### **Magnetoencephalography captures oscillatory dynamics in deep brain regions**

Chetan Gohil<sup>1</sup>, George O' Neill<sup>2</sup>, Vladimir Litvak<sup>3</sup>, Gareth Barnes<sup>3</sup>, Shikun Zhan<sup>4</sup>, Wei Liu<sup>4</sup>, Bomin Sun<sup>4</sup>, Chunyan Cao<sup>4</sup>, Daniel Bush<sup>2</sup>, Umesh Vivekananda<sup>1</sup>

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#### Poster 47

##### **Reduced prefrontal gamma power mediate the relationship between evening chronotype and anhedonia in major depressive disorder**

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#### Poster 48

##### **Abnormal beta bursts of depression in the orbitofrontal cortex and its relationship with clinical symptoms**

Li Xue<sup>1,2</sup>, Xiaowen Hu<sup>3,4</sup>, Siqi Zhang<sup>3,4</sup>, Zhilu Chen<sup>1,2</sup>, Zhijian Yao<sup>1,2</sup>, Qing Lu<sup>3,4</sup>

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#### Poster 49

##### **The Neural Mechanisms of Vigilance Decrement in Individuals with Excessive Daytime Sleepiness: A MEG study**

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#### Poster 50

##### **Neurovascular Unit Impairment and Dynamic Brain Network Abnormalities in Alzheimer's Disease-Associated Subclinical Epileptiform Activity: A Multimodal Study**

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#### Poster 51

##### **A MEG Investigation of Alpha Modulation During Reward Anticipation in Bipolar Disorder and Unaffected First-Degree Relatives**

Pinhua Lin<sup>1</sup>, Lingling Hua<sup>2</sup>, Hao Tang<sup>2</sup>, Yujue Wang<sup>2</sup>, Qing Lu<sup>3</sup>, Zhijian Yao<sup>1,2</sup>

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## Poster 52

### Preoperative MEG risk score predicts progression risk in diffuse glioma

Velmurugan Jayabal<sup>1</sup>, Apisit Kaewsanit<sup>1</sup>, Leighton Hinkley<sup>1</sup>, Dylan Davis<sup>1</sup>, Natalie Brunwin<sup>1</sup>, Anne Findlay<sup>1</sup>, Mitchel Berger<sup>2</sup>, Shawn Hervey-Jumper<sup>2</sup>, Srikantan S. Nagarajan<sup>1</sup>

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## Poster 53

### Speech Entrainment in Schizophrenia: An OPM-MEG Approach

Victoria R. Poulton<sup>1</sup>, Dario Gordillo<sup>1</sup>, Tobias Schweiger<sup>1</sup>, Tineke Grent-'t-Jong<sup>1</sup>, Lars Meyer<sup>2</sup>, Nikos Chalas<sup>3</sup>, Wolfram Hinzen<sup>4</sup>, Peter Krüger<sup>5</sup>, Joachim Gross<sup>3</sup>, Peter J. Uhlhaas<sup>1</sup>

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## Cognition

## Poster 110

### Temporal dynamics of valence prioritization during abstract concept-symbol associative learning: A MEG study

Tianyu Gao<sup>1,2</sup> & Shihui Han<sup>3</sup>

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## Poster 111

### Theta-band functional gradient dynamics coordinates the formation and reactivation of melodic memory

Rui Yu<sup>1</sup>, Junrui Zhang<sup>1</sup>, Di Wu<sup>1</sup>, Yuqi Shen<sup>1</sup>, Yuxin Li<sup>1</sup>, Chen Zhu<sup>2</sup>, Ming Ding<sup>2</sup>, Baoming Li<sup>1</sup>, Zhe Zhang<sup>1,3</sup>

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## Poster 112

### Eye Movements Facilitate Sequential Spatial Memory Reconstruction: Evidence from Simultaneous MEG and Eye Tracking

Xiao Lin<sup>1</sup>, Qiangdong Wang<sup>2</sup>, Xikai Wang<sup>3</sup>, Lin Lu<sup>1,3,4,5</sup>

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## Poster 113

### Active rehearsal after overnight sleep strengthens emerging semantic representations of novel action words: a two-day MEG study

Razorenova<sup>a,b#</sup>, A. Pavlova<sup>b,c</sup>, B. Chernyshev<sup>b,d</sup>, T. Stroganova<sup>b</sup>

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## Poster 114

### Structural bias in network learning: Spontaneous emergence of hierarchy from homogeneity

Zitong Yang<sup>1,2,3</sup>, Muzhi Wang<sup>1,2,3,4</sup>, Huan Luo<sup>1,2,3</sup>

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## Poster 115

### Event Boundaries Trigger Neural Temporal Context Reinstatement that Predicts Trial-level Temporal Order Memory

Benhao Lu<sup>1</sup>, Jiahao Wang<sup>1</sup>, Bolong Wang<sup>2</sup>, Xiangzhen Kong<sup>2</sup>, Yi Pu<sup>1</sup>

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#### Poster 116

##### **Sense of Agency Enhances Object-Spatial Memory Binding: An MEG Study**

Qiaoyue Ren<sup>1</sup>, Fosco Bernasconi<sup>1</sup>, Bruno Herbelin<sup>1</sup>, Olaf Blanke<sup>1</sup>

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#### Poster 117

##### **A MEG Investigation of beta oscillations visuospatial sequence learning on the serial reaction time task**

Qianying Ma, Ling Liu

Beijing Language and Culture University, Beijing, China

#### Poster 118

##### **Mapping The Appraising Brain: Probing the Neural Representations of Appraisals and Emotions**

Qingying Ye<sup>1,2</sup>, Severi Santavirta<sup>1,2</sup>, Asli Erdemli<sup>3,4</sup>, Jinglu Chen<sup>1,2</sup>, Vesa

Putm kinen<sup>1,2</sup>, David Sander<sup>3,4</sup>, Lauri Nummenmaa<sup>1,2,5</sup>

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#### Poster 119

##### **Posterior Cortical Dynamics Underlie Visual Awareness While Prefrontal Activity Reflects Report**

Liang He<sup>1</sup>, Zhige Zhang<sup>1</sup>, Yuetan Wang<sup>1</sup>, Qiujian Meng<sup>2</sup>, Yuying

Jiang<sup>2</sup>, Wei Xu<sup>3,4</sup>, Jiangfen Wu<sup>3</sup>, Jingwei Sheng<sup>3</sup>, Zheng Ye<sup>5,\*</sup>, Xiaobin

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#### Poster 120

##### **A MEG Investigation of Pre-exposure Warning Effects on Neural Synchrony During Real-World Political News**

Morozova Alexandra<sup>1</sup>, Monahhova Eliana<sup>2</sup>, Klucharev Vasily<sup>1</sup>, Kosonogov Vladimir<sup>3</sup>.

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#### Poster 121

##### **Chemoarchitectural constraints on the functional connectome confer resilience in human brain aging**

Santiago I. Flores-Alonso<sup>1,2</sup>, Jack P. Solomon<sup>1,2</sup>, Simon Dobri<sup>2,3</sup>, Anthony R. McIntosh<sup>1,2</sup>, Alex I. Wiesman<sup>1,2,\*</sup>

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#### Poster 122

##### **Positive Subliminal Evaluative Conditioning Reduces Stigma Toward Schizophrenia: A MEG Study**

Haoyun Zhao<sup>1,#</sup>, Dixin Wang<sup>2,#</sup>, Qiandong Wang<sup>3</sup>, Waxun Su<sup>3</sup>, Sanwang

Wang<sup>4</sup>, Xikai Wang<sup>1</sup>, Tingting Li<sup>4</sup>, Xin Wen<sup>1</sup>, Mingzhe Li<sup>1</sup>, Xiao Lin<sup>4,\*</sup>,

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#### Poster 123

##### **Short-term visual deprivation alters frequency of visual gamma oscillations.The direction of effect depends on excitatory drive.**

Plieva A.M.<sup>1</sup>, Prokofyev A.O.<sup>1</sup>, Stroganova T.A.<sup>1</sup>, Orekhova E.V.<sup>1</sup>

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#### Poster 124

##### **Stable task context with flexible temporal coupling across preparatory and stimulus processing**

Xiaoshu Lin<sup>12</sup>, Weiyong Xu<sup>12</sup>, Chaoxiong Ye<sup>1</sup>, Tiina Parviainen<sup>12</sup>

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#### Poster 125

##### **Neural Correlates of Implicit Cross-Modal Cognitive Processing**

Yangjiayi Mu, Qinhui Yao, Ziyu Wang, Yuwei Jiang

#### Poster 126

##### **Spatiotemporal cortical hierarchies of object real-world size, retinal size, and depth representations in natural image perception**

Enqi Zhang<sup>1</sup>, Yongjie Zhu<sup>1</sup>

<sup>1</sup> Dalian University of Technology, Dalian, China

## Poster 127

### Adversarially Testing GNWT and IIT with a Novel Inattentional Blindness Paradigm via ME

Xuan Cui<sup>1</sup>, Ling Liu<sup>2,3</sup>, Pablo Oyarzo<sup>4</sup>, Oscar Ferrante<sup>5</sup>, Ole Jensen<sup>1,6</sup>, Huan Luo<sup>2</sup>, Lucia Melloni<sup>7,8,9,10</sup>, Michael Pitts<sup>11</sup>, Liad Mudrik<sup>8,12,13</sup>, Cogitate consortium<sup>14</sup>

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<sup>14</sup> Funder: Templeton World Charity Foundation

## Poster 128

### The role of low-frequency oscillations in visual feature prediction

Danila Shelepenkov<sup>2,3</sup>, Matteo Maspoli<sup>1,2,3,5</sup>, Tommy Clausner<sup>4</sup>, Mathilde Bonnefond<sup>2,3</sup>

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## OPM

## Poster 174

### External coil-based co-registration and validation for flexible-helmet OPM-MEG

Doyle<sup>1</sup>, D. Bobela<sup>1</sup>, J. Osborne<sup>1</sup>, M. Brookes<sup>2</sup>, V. Shah<sup>1</sup>

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## Poster 175

### Fully Automated SPSSA-Based Coupled Multi-Parameter Optimization for Optically Pumped Magnetometer Sensors

Yuyao Cai<sup>1</sup>, Kaiyan He<sup>2</sup>, Rui Yang<sup>1</sup>, Zeyu Jin<sup>1</sup>, Zehuan Zhao<sup>1</sup>, Yingchun Zhao<sup>1</sup>, Congcong Li<sup>2</sup>, Bingjiang Lyu<sup>2</sup>, Jia-Hong Gao<sup>1,2</sup>

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## Poster 176

### Polarization-Dynamics Modeling of Optical-Axis Demodulation for Three-Axis Closed-Loop OPMs

Zeyu Jin<sup>1</sup>, Kaiyan He<sup>2</sup>, Rui Yang<sup>1</sup>, Yuyao Cai<sup>1</sup>, Bingjiang Lyu<sup>2</sup>, Jia-Hong Gao<sup>1,2</sup>

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## Poster 177

### Recursively Applied Leadfield elimination (RALFE) provides accurate localization in a task-oriented paradigm

M. Razorenova<sup>a,d,#</sup>, D.A. Medvedeva<sup>a,c</sup>, N.P. Fedosov<sup>b,c</sup>, A.E. Ossadtchi<sup>a,c</sup>, N.A. Koshev<sup>a,b</sup>

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## Poster 178

### Tangential steady-state visual evoked field for a magnetic flux concentrator-enhanced magnetoencephalography system

Tingyu Zhu<sup>1</sup>, Wenyu Shang<sup>1</sup>, Masaki Sekino<sup>1</sup>

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## Poster 179

### Contactless OPM-Based Functional Magnetoretinotomography

Daria Medvedeva<sup>1,2</sup>, Nikita Fedosov<sup>2,3</sup>, Alexei Ossadtchi<sup>1,2,3</sup>

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## Poster 180

### Can Triaxial OPM-MEG Replace SQUID-MEG? A Source Localization Comparison

Laura Gee, Denis Schwartz, Christian Bénar, Théodore Papadopoulos

## Poster 181

### A comparison of OPM-MEG and EEG for visual steady-state responses

Takashi Ikeda<sup>1</sup>, Chiaki Hasegawa<sup>1</sup>, Yuko Yoshimura<sup>1</sup>, Sumie Iwasaki<sup>2</sup>, Hirofumi Morise<sup>1</sup>, Mitsuru Kikuchi<sup>1</sup>

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## Poster 182

### Source-Localization Accuracy of HEDscan OPM Systems using Phantoms

Teresa Cheung<sup>1,3,4</sup>, George O'Neil<sup>1</sup>, Orang Alem<sup>1,2</sup>, Tyler Maydew<sup>1</sup>, Svenja Knappe<sup>1,2</sup>

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## Poster 183

### Feasibility of a Dual-Wavelength Pulsed Pump-Probe Scalar Atomic Magnetometer for Motor-Cortex MEG

SeongHyeon Park<sup>1</sup>, Kiwoong Kim<sup>1</sup>

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## Poster 184

### Assessing Motion Tolerance in HEDscan OPMs Without Panel Coils: A Multisite Study

Svenja Knappe<sup>1,2</sup>, George O'Neill<sup>1</sup>, Orang Alem<sup>1,2\*</sup>, Tyler Maydew<sup>1</sup>, Teresa Cheung<sup>1,3,4</sup>

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## Poster 185

### OPM-MEG in a compact magnetic shield

Mikael Grön, Paavo Hietala, Olli Pikkarainen, Markus Henttonen, Eelis Eklund, Eemeli Luostarinen, Joonas Iivanainen, Lauri Parkkonen  
Department of Neuroscience and Biomedical Engineering, Aalto University, Espoo, Finland

## Poster 186

### Tracking Social Brain Activity During Movie-Watching with OPM-MEG

Robert A. Seymour<sup>1</sup>, Seamus O'Sullivan<sup>1</sup>, Elena Boto<sup>2</sup>, Matt J. Brookes<sup>2</sup>, Laurel S. Morris<sup>3,4</sup>, Mark W. Woolrich<sup>1</sup>

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## Other

## Poster 222

### Building multi-site MEG norms: quantifying across-site variability

Lili Tian<sup>1,2</sup>, Pietari Nurmi<sup>1</sup>, Fatemeh Ahaninjan<sup>3</sup>, Jan Kujala<sup>3</sup>, Amande Pauls<sup>2</sup>, Hanna Kaltiainen<sup>2</sup>, Hanna Renvall<sup>1,2</sup>, Mia Liljeström<sup>1,2</sup>

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## Poster 223

### MEG-GPT-2: A Generative Foundation Model for MEG with Neuroscientifically Meaningful Representations

SungJun Cho<sup>1</sup>, Chetan Gohil<sup>1</sup>, Oiwi Parker Jones<sup>2</sup>, Mark Woolrich<sup>1</sup>

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## Poster 224

### A Variational Framework for Comparing Brain HMM Dynamics

Alessio Basti\*, Fabio Camilli\*, Laura Marzetti\*

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## Poster 225

### Neural Network Enhanced Extraction of Fetal Magnetocardiography from Single-Channel Noncontact Recordings

Ziyan Zhou, Kun Yang, Yafen Cai, Yu Xin and Xiangyan Kong  
Ningbo University, Ningbo, China

## Poster 226

### SQUID Gradiometer Based Magnetocardiography and Clinical Application

Xiangyan Kong, Zhidan Zhang, Kun Yang, Ben Li, Ziyan Zhou  
Ningbo University, Ningbo, China

## Poster 227

### Investigation of the Effects of Sensor Array Geometry on Magnetocardiographic Measurements

Wenyu Shang<sup>1</sup>, Shinichi Chikaki<sup>1</sup>, Motofumi Fushimi<sup>2</sup>, Masaki Sekino<sup>1</sup>

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## Poster 228

### High Resolution Animal Magnetocardiography Using Atomic Magnetometer

Kun Yang<sup>1</sup>, Chuangzhen Guo<sup>1</sup>, Kun Zou<sup>2</sup>, Ziyan Zhou<sup>1</sup>, Yongjuan Guo<sup>2</sup>, Zhidan Zhang<sup>1</sup>, Yafen Cai<sup>1</sup>, Xiangyan Kong<sup>1</sup>

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## Poster 229

### Physics-Constrained ECG-to-Cardiac Field Modeling for Computational Magnetocardiography

Jingqiu Hou, Yu Xin Ziyang Zhou, Kun Yang, Zhidan Zhang and Xiangyan Kong  
Ningbo University, Zhejiang, P. R. China

#### **Poster 230**

##### **Diamond-based quantum sensors for magnetocardiography**

Arne Wickenbrock<sup>1,2</sup>

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#### **Poster 231**

##### **Multi-Modal Magnetomechanical Fetal Cardiac Imaging: Simultaneous Fetal Magnetocardiography and Fetal Echocardiography**

Gabriela Tardelli<sup>1</sup>, Janette Strasburger<sup>2</sup>, Ronald Wakai<sup>1</sup>

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#### **Poster 232**

##### **Brain-Gastric Phase-Amplitude Coupling in Healthy Adults: A Pilot Observational Study**

Yaxin Zhang<sup>1,2</sup>, Shujuan Tian<sup>1,2</sup>, Yuping Wang<sup>1,2</sup>

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### Clinical

#### Poster 54

##### An EEG study on Transient Beta Events Features in Successful Cognitive Aging

Alejandra García-Colomo<sup>1,2</sup>, Blanca Pilar Carvajal<sup>1,2</sup>, Noemí López-Núñez<sup>1,2</sup>, Danylyna Shpakivska-Bilan<sup>1,2</sup>, María Eugenia López García<sup>1,2</sup>.

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#### Poster 55

##### OPM-MEG enhances the detection of visual gamma-band responses in schizophrenia

D. Gordillo<sup>1</sup>, M. Brickwedde<sup>1,2</sup>, P. Anders<sup>2</sup>, P. Krüger<sup>2</sup>, T. Sander<sup>2</sup> and P.J. Uhlhaas<sup>1</sup>

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#### Poster 56

##### Developing a real-movement OPM-MEG navigation task to probe medial temporal lobe dysfunction in early Alzheimer's disease

Katarzyna Rudzka<sup>1</sup>, Rashmil Tufail<sup>1</sup>, Ramaa Sri Lalitha Sahitya Puvvada<sup>1</sup>, Dennis Chan<sup>1</sup>, Gareth Barnes<sup>1</sup>, Neil Burgess<sup>1</sup>

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#### Poster 57

##### Multimodal EEG-MEG and Stress-Response Signatures of Sleep Reactivity and Insomnia Vulnerability

Sifan Hu<sup>1</sup>, Yingying Zhou<sup>1</sup>, Li Wang<sup>1</sup>, Qing Wang<sup>1</sup>, Hongqiang Sun<sup>1\*</sup>, Jiahong Gao<sup>2\*</sup>

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#### Poster 58

##### Trait-like nap sleep microstructural deficits and stress-related emotional processing: a MEG-EEG study

Qing Wang<sup>1</sup>, Sifan Hu<sup>1</sup>, Li Wang<sup>1</sup>, Yingying Zhou<sup>1</sup>, Hongqiang Sun<sup>1\*</sup>

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#### Poster 59

##### Associations Between EEG-MEG Oscillatory and Source Markers with Daytime Nap for Stress Reactivity in Insomnia

Li Wang<sup>1,\*</sup>, Sifan Hu<sup>1,\*</sup>, Yingying Zhou<sup>1</sup>, Qing Wang<sup>1</sup>, Hongqiang Sun<sup>1,\*</sup>

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#### Poster 60

##### Sex Differences in Depressive Working Memory Impairment: Common Frontal Deficits and Male-Specific Occipital Compensation

Xumiao Wang<sup>1,\*</sup>, Haowen Zou<sup>2,\*</sup>, Qing Lu<sup>3,4\*</sup>, Zhijian Yao<sup>1,4,5\*</sup>

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#### Poster 61

##### Age-Matched MEG Network Templates in Insomnia

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#### Poster 62

##### Precision Identification and Subtyping of Mild Cognitive Impairment Based on MEG Brain Network Modeling

Liming Shang<sup>1</sup>, Xuan Yan<sup>1</sup>, Zhenwei Wu<sup>2</sup>, Zhuoyan Cui<sup>2</sup>, Nan Zhang<sup>3</sup>, Shujuan Tian<sup>1,3</sup>, Yuping Wang<sup>3,4</sup>

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#### Poster 63

##### **Multimodal 3D- CNN Classification Framework for Early Detection of Mild Cognitive Impairment**

Segun Christopher Ogunmakin<sup>1</sup>, KongFatt Wong-Lin<sup>1</sup>, Saugat Bhattacharyya<sup>1</sup>, Girijesh Prasad<sup>1</sup>

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#### Poster 64

##### **Reliable Motor Mapping With OPM-MEG for Preserving Motor Function in Brain Tumor Surgery**

Tai Sun<sup>1</sup>, Ming Ding<sup>2</sup>, Xiaohan Chi<sup>1</sup>, Kang Liu<sup>1</sup>, Yang zhang<sup>1</sup>, Nan Ji<sup>1</sup>

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#### Poster 65

##### **Somatosensory timing and cerebellar-basal ganglia beta-band interactions in Parkinson's disease**

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#### Poster 66

##### **Monitoring Sensorimotor Plasticity During VR Mirror Training in Congenital Hand Amelia Using MEG: Case Report**

Sazonov Oleg<sup>1</sup>, Daria Kleeva<sup>2</sup>, Alex Ossadtchi<sup>1</sup>

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#### Poster 67

##### **Personalised BCI for Post-Stroke Rehabilitation: A Pilot Study on the Effects of Mental Fatigue Monitoring in Patients.**

Mark Butler<sup>1</sup>, Kaniska Samanta<sup>1</sup>, Saugat Bhattacharyya<sup>1</sup>, KongFatt Wong-Lin<sup>1</sup>, Girijesh Prasad<sup>1</sup>

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#### Poster 69

##### **Synthesis of non-invasive neural signals to enhance motor brain-computer interface datasets with generative network model.**

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#### Poster 70

##### **MEG Study of Neurophysiological Correlates of Individual Stages of Graded Motor Imagery in Healthy Individuals and Individuals with Phantom Limb Pain**

Bobrov Pavel<sup>1</sup>, Isaev Mihail<sup>1</sup>, Kerechanin Yaroslav<sup>1</sup>, Bazueva Tatiana<sup>2</sup>, Mokienko Olesya<sup>1</sup>

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## Cognition

#### Poster 129

##### **Neural correlates of auditory stimulation induced awakening during sleep: A MEG study**

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#### Poster 130

##### **The cognitive and neural mechanisms underlying the effect of wealth sources on wealth redistribution behavior**

Jiaqi Wang<sup>1\*</sup>, Zhaolin Hu<sup>1\*</sup>, Jie Hu<sup>1#</sup>

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#### Poster 131

##### **Representational geometry of valence and arousal in brain and body during emotional video watching**

Weiyong Xu<sup>1,2</sup>, Pinja Ronkainen<sup>1,2</sup>, Tiina Parviainen<sup>1,2</sup>

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#### Poster 132

##### **Avatar-Mediated Communication Alters Task-Related Alpha-Band Activity Compared with Face-to-Face Communication**

Yu Han<sup>1</sup>, Hayato Watanabe<sup>2,3</sup>, Atsushi Shimojo<sup>3</sup>, Yui Murakami<sup>3,4</sup>, Yuuki Ushijima<sup>1</sup>, Rikuma Itabashi<sup>1</sup>, Takuya Saito<sup>5</sup>, Yuki Ueda<sup>6</sup>, Noriki Ochi<sup>7</sup>, Hiromu Sakai<sup>8</sup>, Takahiro A. Kato<sup>9</sup>, Koichi Yokosawa<sup>3</sup>

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#### Poster 133

##### **Perceptual Ambiguity Flexibly Reconfigures Action Observation and Mentalizing Networks During Social Judgments**

Yu Yuan-Zheng<sup>1</sup>, Wu Hui-Ning<sup>1</sup>, Kuai Shu-Guang<sup>1,2,3</sup>

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#### Poster 134

##### **Neural Mechanisms Underlying Scene-Interaction Matching in Contextualized Social Perception**

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#### Poster 135

##### **Heart-to-Brain Information Transfer Differentiates Focused Attention and Open Monitoring Meditation: an MEG study**

Delia Lucarelli<sup>1,2</sup>, Vittorio Aceto<sup>3</sup>, Alessio Basti<sup>3</sup>, Antea D'Andrea<sup>1,2</sup>, Roberto Guidotti<sup>1,2</sup>, Antonino Raffone<sup>4</sup>, Vittorio Pizzella<sup>1,2</sup>, Laura Marzetti<sup>2,3</sup>

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#### Poster 136

##### **Complexity and Criticality features Reveal Distinct Neural Dynamics Across Meditation Practices: A MEG Study**

Annalisa Pascarella, Philipp Thölke, David Meunier, Jordan O' byrne, Tarek Lajnef, Antonino Raffone, Roberto Guidotti, Vittorio Pizzella, Laura Marzetti, Karim Jerbi

#### Poster 137

##### **How wealth sources shape redistribution: Dynamic modulation of prosocial motives and their neural representations**

Jiaqi Wang<sup>1\*</sup>, Zhaolin Hu<sup>1\*</sup>, Yanyu Zhang, Jie Hu<sup>1#</sup>

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#### Poster 138

##### **Brain-like Representational Geometry in Large Language Model Learning of Recursive Nested Structures**

Zhiang Yan<sup>1,2</sup>, Hao Wang<sup>1</sup>, Jia-Hong Gao<sup>1,3</sup>, Bingjiang Lyu<sup>3</sup>

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#### Poster 139

##### **Investigating MEG Brain States During Meditation Using Hidden Markov Models**

Lorenza Guerriero<sup>1</sup>, Riccardo Aceto<sup>1</sup>, Saeed Makkinayeri<sup>1</sup>, Alessio Basti<sup>1</sup>, Pierpaolo Croce<sup>1</sup>, Giulia Pieramico<sup>1</sup>, Antonino Raffone<sup>2</sup>, Vittorio Pizzella<sup>1</sup>, Laura Marzetti<sup>1</sup>

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#### Poster 140

##### **Source-level MEG microstates reveal distinct dynamical features of focused attention and open monitoring meditation**

D' Andrea A<sup>1\*</sup>, Croce P<sup>1\*</sup>, O' Byrne J<sup>2</sup>, Jerbi K<sup>2</sup>, Pascarella A<sup>3</sup>, Raffone A<sup>4</sup>, Pizzella V<sup>1,5</sup>, Marzetti L<sup>5,6</sup>.

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#### Poster 141

##### **MEG Investigation of Expectation-Related Modulation of Hunger Perception**

Xuan Yan<sup>1</sup>, Liming Shang<sup>1</sup>, Yutong He<sup>2</sup>, Nan Zhang<sup>3</sup>, Shujuan Tian<sup>1,3</sup>, Yuping Wang<sup>3,4</sup>

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#### Poster 142

##### **Late Higher-Order Network Integration During Incomplete Contour Perception: A Source-Space MEG Study**

Liming Shang<sup>1</sup>, Xuan Yan<sup>1</sup>, Jiwen Chen<sup>2</sup>, Nan Zhang<sup>3</sup>, Shujuan Tian<sup>1,3</sup>, Yuping Wang<sup>3,4</sup>

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#### Poster 143

##### **Volitional muscle activation intensifies cortical processing of proprioceptive afference from the hand**

Junru Chen<sup>1,2</sup>, Feiyue Li<sup>1,2</sup>, Harri Piitulainen<sup>1,2</sup>

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#### Poster 144

##### **Stronger patellar tendon tap intensifies cortical processing of the respective proprioceptive afference**

Feiyue Li<sup>1,3</sup>, Anni Byman<sup>2</sup>, Junru Chen<sup>1,3</sup>, Toni Mujunen<sup>4</sup>, Harri Piitulainen<sup>1,3</sup>

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#### Poster 145

##### **Cortical regions supporting tapping rhythm control**

Keiko Fukuda<sup>1</sup>, Takato Takenaka<sup>1</sup>, Mituki Nagahashi<sup>1</sup>, Hayato Watanabe<sup>2,3</sup>, Atsushi Shimojo<sup>2</sup>, Koichi Yokosawa<sup>2</sup>

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#### Poster 146

##### **Anticipatory Sensorimotor Synchronization Across Limbs**

Georgios Michalareas<sup>1,2,3</sup>, Matthias Grabenhorst<sup>4,2</sup>, Yue Sun<sup>1,3</sup>

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#### Poster 147

##### **MEG reveals visual suppression during attention shifts**

Zixiao Zhang<sup>1,3</sup>, Sheng He<sup>1,2,3</sup>, Jiedong Zhang<sup>1,3</sup>

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#### Poster 244

##### **Neural correlates of auditory stimulation induced awakening during sleep: A MEG study**

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## OPM

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##### **Markerless 3D Motion Capture for Wearable OPM-MEG**

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#### Poster 188

##### **Single probe beam tri-axial optically pumped magnetometer based on Voigt rotation for MEG detection.**

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#### Poster 189

##### **Effects of scalp-to-sensor distance on the signal-to-noise ratio in MEG**

Seppo P. Ahlfors<sup>1</sup>, Teppei Matsubara<sup>1</sup>, Abbas Sohrabpour<sup>1</sup>, Padmavathi Sundaram<sup>1</sup>, Maria Mody<sup>1</sup>, Mainak Jas<sup>1</sup>

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#### Poster 190

##### **Beta-band dynamics during naturalistic motor learning: an OPM-MEG study**

Joseph Gibson<sup>1</sup>, Jessikah Fildes<sup>1</sup>, Alan Kirby<sup>1</sup>, Niall Holmes<sup>1,2</sup>, Lukas Rier<sup>1,2</sup>, Karen J. Mullinger<sup>1,3</sup>, Peter G. Morris<sup>1</sup>, Matias Ison<sup>4</sup>, Elena Boto<sup>2,1</sup>, Ryan M. Hill<sup>1,2</sup> and Matthew J. Brookes<sup>1,2</sup>

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#### Poster 191

##### Neural Fingerprinting with MEG using a Canonical Hidden Markov Model

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##### Viability of Lightly Shielded Environments for OPM MEG

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#### Poster 193

##### A low-power, compact optically pumped magnetometer cell module with one-dimensional assembly structure

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#### Poster 194

##### Neural processing of attended and ignored acoustic features under binaural unmasking in second-language speech perception

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#### Poster 195

##### Spatiotemporal Dynamics of Fear in the Uncanny Valley: Preliminary Source-Level Findings via OPM-MEG

Zhen Ren<sup>1</sup>, Zhebing Ren<sup>1</sup>, Jianhui Liang<sup>1</sup>, Liping Wang<sup>1</sup>

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#### Poster 196

##### Spatial sampling requirements for triaxial OPM-MEG change across the lifespan

Lukas Rier<sup>1,2</sup>, Niall Holmes<sup>1,2</sup>, Ryan M. Hill<sup>1,2</sup>, and Matthew J. Brookes<sup>1,2</sup>

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#### Poster 197

##### Wireless OPM-based synthetic gradiometer for unconstrained biomagnetic imaging

Hao Cheng<sup>1,2</sup>, Kaiyan He<sup>2</sup>, Yugang Yin<sup>2</sup>, Pingchuan Zou<sup>1,2</sup>, Mingjing Wang<sup>2</sup>, Jia-Hong Gao<sup>1,2</sup>

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#### Poster 244

##### Neural correlates of auditory stimulation induced awakening during sleep: A MEG study

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#### Other

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##### Magnetic transparency enables noninvasive multidepth laryngeal electrophysiology

Biyang Zhao<sup>1</sup>, Chenxi Sun<sup>1</sup>, Yan Yan<sup>2</sup>, Miao Yang<sup>3</sup>, Lianyu Wei<sup>4</sup>, Yali Du<sup>2</sup>, Jianwei Zhang<sup>5</sup>, Haidong Wang<sup>1</sup>, Hong Guo<sup>1\*</sup>

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#### Poster 234

##### Magnetic source analysis for magnetoencephalography using the chained equivalent current element distribution method and an in-silico phantom

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#### Poster 235

##### **Magnetoencephalographic Correlates of Muscle Sympathetic Nerve Activity Bursts: A Multi-Frequency Network Analysis of the Central Autonomic Network**

Will Woods<sup>1</sup>, Mariya Patel<sup>2</sup>, Joe Braun<sup>2</sup>, Charlotte Keatch<sup>3</sup>, Tatiana Kameneva<sup>3</sup>, Elisabeth Lambert<sup>2,4</sup>

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#### Poster 236

##### **Exploring Cardiac Phase Relationships in Reading-Related Saccades During Natural Reading**

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#### Poster 237

##### **In Vivo Non-Invasive Magnetomyography for Small Animals Using SERF magnetometer**

Zhidan Zhang<sup>1</sup>, Kun Zou<sup>2</sup>, Deng Pan<sup>1</sup>, Ziyang Zhou<sup>1</sup>, Kun Yang<sup>1</sup>, Xiangyan Kong<sup>1</sup>

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#### Poster 238

##### **NV center magnetometer based MMG measurements in rats**

Carlos Izquierdo Geiser<sup>1</sup>, Muhib Omar<sup>2</sup>, Dmitry Budker<sup>2</sup>, Ulrich Hofmann<sup>1</sup>, Arne Wickenbrock<sup>2</sup>

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#### Poster 239

##### **Robust Forearm Gesture Decoding Using Electromyography and Magnetomyography Under Sensor Displacement and Inter-Subject Variability**

Zeming Li<sup>1</sup>, Wen Luo<sup>1</sup>, Yinan Hu<sup>1</sup>, Xin Zhou<sup>1</sup>

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#### Poster 240

##### **Multiple pathways involve in bio-response to the hypomagnetic field**

Rong-qiao He<sup>1\*</sup>, Weichuan Mo<sup>1</sup>, Jingpeng Fu<sup>1</sup>, Haitao Zhang<sup>1</sup>, Zijian Zhang<sup>1</sup>, Bingjun Liu<sup>2</sup>, Jie Ren<sup>2</sup>, Ying Liu<sup>1,2</sup>

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#### Poster 241

##### **Hepatic and Splenic Sensitivity to Static Magnetic Fields: From Magnetoreception to Disease Intervention**

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##### **Magnetometer Characterization as Foundation for Non-Cryogenic Biomagnetic Sensing**

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#### Poster 243

##### **Multi-channel SQUID-MEG of cortical population spikes**

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