6th Annual Brain Stimulation and Imaging Meeting

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All times in the program are in Finland time (UTC +3).

Program at glance

**Tuesday May 19, 2020**
11:00–11:15 Opening
11:15–12:55 Oral 1: Transcranial magnetic stimulation with EEG or fMRI
12:55–13:15 Break
13:15–14:15 Poster 1: Transcranial magnetic stimulation 1
14:15–14:30 Break
14:30–16:10 Oral 2: TMS and electrophysiological measurements: clinical applications
16:10–16:30 Break
16:30–17:30 Keynote 1: Stephanie Jones – Biophysically principled neural modeling of EEG to guide interpretation and design of non-invasive brain stimulation
17:30–17:45 Break
17:45–19:45 Oral 3: Modeling and analysis methods
19:45–20:00 Break
20:00–20:50 Poster 2: Transcranial magnetic stimulation 2

**Wednesday May 20, 2020**
11:00–11:50 Poster 3: Development of brain stimulation technology at Aalto University
11:50–12:00 Break
12:00–13:00 Keynote 2: Jari Hyttinen – Stimulation and assessment of emerging in-vitro neuronal models
13:00–13:15 Break
13:15–14:35 Oral 4: Transcranial electrical stimulation 1
14:35–14:55 Break
14:55–16:15 Oral 5: Transcranial electrical stimulation 2
16:15–16:30 Break
16:30–17:20 Poster 4: Electrical and ultrasound stimulation
17:20–17:35 Break
17:35–18:15 Oral 6: Transcranial ultrasound stimulation
18:15–18:30 Break
18:30–19:30 Keynote 3: Vincent Clark – Alternative methods for neuromodulation: ultrasound and infrared
19:30–19:45 Closing
Tuesday May 19, 2020

Opening
11:00 Vincent Clark & Risto Ilmoniemi
Opening

Oral 1: Transcranial magnetic stimulation with EEG or fMRI
11:15 Melina Engelhardt
Functional connectivity of the motor system and the resting motor threshold: a replication study
11:30 Marta Bortoletto
TMS-evoked potentials as a measure of transcallosal conduction delay in the motor system
11:45 Ida Granö
The role of pre-stimulus cortical oscillations for signal propagation after a TMS pulse
12:00 Timo Roine
Connecting to the networks of the human brain with multi-locus transcranial magnetic stimulation
12:15 Federico Chella
The impact of data length on real-time connectivity estimates
12:30–12:55 Zoom discussion with the session speakers

Poster 1: Transcranial magnetic stimulation 1
13:15 Justyna Hobot
The more excited the better? Occipital cortex TMS and visual perception
13:20 Dmitry Lagoda
Transcranial magnetic stimulation of prefrontal cortex for modulation of insight problem solving
13:25 Noora Matilainen
No effect of inter-pulse interval for TMS motor evoked potentials in active muscles
13:30 Dao Nguyen
Feature variability in motor evoked potential in single-pulse transcranial magnetic stimulation
13:35 Pavel Novikov
Fast motor mapping with 2-channel multi-locus TMS
13:40 Ekaterina Ivanina
Focality of the excitatory and inhibitory pp TMS phenomena
13:45 Danylo Lucio Ferreira Cabral
Effects of 8 weeks of aerobic exercise intervention on fitness and neuroplasticity in aging adults
13:50–14:15 Zoom discussion with the session speakers

Oral 2: TMS and electrophysiological measurements: clinical applications
14:30 Mikko Luostarinen
Double facilitating triple pulse in clinical MEP exams
14:45 Elizaveta Nikiforova
SMA as a target for repetitive TMS: a systematic review of the clinical and fundamental approaches
15:00 Manon Desforges
TMS–EEG as a measure of the intermittent theta-burst stimulation’s mechanism in prefrontal cortex
15:15 Silvia Casarotto
TMS–EEG is sensitive to the brain’s capacity for consciousness: a reproducibility study
15:30 Katri Silvennoinen
TMS-evoked potentials in Dravet syndrome – a reduction of components
15:45–16:10 Zoom discussion with the session speakers

Keynote 1
16:30 Stephanie Jones
Biophysically principled neural modeling of EEG to guide interpretation and design of non-invasive brain stimulation
17:15–17:30 Zoom discussion with Stephanie Jones
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Oral 3: Modeling and analysis methods
17:45  Matti Stenroos  A common framework for modelling electroencephalography and transcranial magnetic stimulation
18:00  Nick Davis  Variance in cortical depth across the brain surface
18:15  Daniel Keesser  Gender effects in a subsample of the S1200 HCP cohort – a simulation study
18:30  Giacomo Bertazzoli  The impact of artifact removal methods on TMS–EEG signal: a comparative study
18:45  Tuomas Mutanen  New open-source tools for cleaning artifactual TMS–EEG data
19:00  Juuso Korhonen  Peersourced TMS–EMG MEP annotation tool for algorithm development and open research
19:15–19:45  Zoom discussion with the session speakers

Poster 2: Transcranial magnetic stimulation 2
20:00  Hanna Pankka  Deep learning -based forecasting of EEG time series for brain-state-dependent TMS
20:05  Danielle Sliva  Biophysical neural modeling of EEG to interpret the impact of TMS on brain dynamics
20:10  Johanna Metsomaa  Defining brain excitability states from EEG by data-driven spatio-temporal filtering
20:15  Pauliina Kärkkäinen  Modelling of brain states using a coarse-grained Kuramoto model in TMS–EEG
20:20  Joelle Schroen  New insights into sentence comprehension from a condition-and-perturb TMS–EEG study
20:25  Mar Martín Signes  Exploring the role of prefrontal regions in executive control and conscious perception
20:30–20:50  Zoom discussion with the session speakers

Keynote speakers

Stephanie Jones  Brown University  USA
Jari Hyttinen  Tampere University  Finland
Vincent Clark  University of New Mexico  USA
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**Wednesday May 20, 2020**

**Poster 3: Development of brain stimulation technology at Aalto University**
11:00  Dogu Baran Aydogan  Processing of structural and diffusion MRI for real-time tractography-based nTMS
11:05  Mikko Nyrhinen  The impulse noise of TMS inside a 3T MRI scanner
11:10  Mikko Malmi  Design and production of a 5-coil multi-locus TMS transducer
11:15  Victor Hugo Souza  Towards concurrent multi-locus TMS and functional MRI for rats
11:20  Heikki Sinisalo  Controlled pulse waveforms for TMS
11:25  Veikko Jousmäki  Intermittent photic stimulation in healthy controls in MEG
11:30–11:50  Zoom discussion with the session speakers

**Keynote 2**
12:00  Jari Hyttinen  Stimulation and assessment of emerging in-vitro neuronal models
12:45–13:00  Zoom discussion with Jari Hyttinen

**Oral 4: Transcranial electrical stimulation 1**
13:15  Patrik Simko  Enhancement of visual cognition in healthy seniors using anodal prefrontal tDCS
13:30  Massimo Bertoli  Brain changes due to a personalized neuromodulation against multiple sclerosis fatigue
13:45  Tiam Hosseinian  Phase-synchronized 6-Hz rTMS with tACS induces sustained increase in 6-Hz oscillations
14:00  Erica Varoli  TMS–EEG: a promising tool to study the tDCS effects on cortical excitability
14:15–14:35  Zoom discussion with the session speakers

**Oral 5: Transcranial electrical stimulation 2**
14:55  Miles Wischnewski  The effects of frontal tACS on reversal learning
15:10  Desmond Agboada  Induction of late-phase LTP-like plasticity in the primary motor cortex with repeated anodal tDCS
15:25  Alessia Gallucci  Stimulating the VLPFC modulates frustration-induced aggression: a tDCS experiment
15:40  Tobias Reichenbach  Enhancement of speech-in-noise comprehension through transcranial alternating current stimulation
15:55–16:15  Zoom discussion with the session speakers

**Poster 4: Electrical and ultrasound stimulation**
16:30  Uma Mohan  The effects of direct brain stimulation in humans depend on frequency, amplitude, and white-matter proximity
16:35  Carole Chantal Wagnon  Anodal tDCS over the left or right DLPFC differentially influences memory performance
16:40  Monika Pupíková  Modulation of working memory and resting-state fMRI by tDCS of the right fronto-parietal network
16:45  Eugenia Gianni  FaReMuS modifies the control of everyday movements
16:50  Olga Buivolova  Verb network strengthening treatment combined with tDCS in non-fluent chronic aphasia
16:55 Gösta Ehnholm  Activation of cortical neurons using FUS in the primary somatosensory cortex of the rat in vivo
17:00–17:20  Zoom discussion with the session speakers

**Oral 6: Transcranial ultrasound stimulation**
17:35 Pavel Novak  TPS (Transcranial Pulse Stimulation) reduces significantly Alzheimer’s disease symptoms
17:50 Koos Zevenhoven  Open hybrid MEG–MRI scanner and combining it with transcranial ultrasound stimulation
18:05–18:15  Zoom discussion with the session speakers

**Keynote 3**
18:30 Vincent Clark  Alternative methods for neuromodulation: ultrasound and infrared
19:15–19:30  Zoom discussion with Vincent Clark

**Closing**
19:30 Risto Ilmoniemi & Vincent Clark  Closing

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Risto Ilmoniemi  Aalto University, Finland

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