



## 1<sup>st</sup> Seminar on invasive and non-invasive neurostimulation methods

Movement Disorders and Neurostimulation

Department of Neurology

Focus Program Translational Neuroscience (FTN)

Johannes Gutenberg University Medical Center Mainz

Langenbeckstr. 1

55131 Mainz, Germany

**17.-18. November 2016**

Dear colleagues, dear FTN and rmn<sup>2</sup> members,

We cordially invite you to our seminar on invasive and non-invasive stimulation techniques. In this seminar we will concentrate on developments in this field of neuroscience. We will present an introduction to the different modalities like transcranial magnetic (TMS) and direct current stimulation (tDCS), as well as invasive stimulation techniques like deep brain stimulation (DBS). We will discuss the different applications of these techniques within the existing theoretical background and will provide algorithms for the use of these methods in research and clinical practice. Moreover, we will address issues of plasticity induction and measurement in animal and human experimental settings. We will close with practical hands-on sessions of data acquisition and analyses of the acquired data (EEG, EMG, TMS-evoked potentials). The course is best suited for PhD students and post-docs, however everyone is welcome. We are very happy to have excellent speakers who will share their knowledge on neurostimulation with the participants.

Kind regards

A handwritten signature in blue ink, appearing to read 'Sergiu Groppa'.

Sergiu Groppa

A handwritten signature in blue ink, appearing to read 'Muthuramam Muthuraman'.

Muthuramam Muthuraman

**Date: 17.11.2016**

Time	Speaker	Title
09:15 – 10:00	Sergiu Groppa	Introduction, past and future of the stimulation techniques
10:00 – 10:45	Muthuraman Muthuraman	Neurostimulation and multimodal imaging
10:45 – 11:00		Coffee break
11:00 – 11:20	Martin Glaser	DBS practical and neurosurgical issues
11:20 – 11:45	Nabin Koirala	DBS network mechanism
11:45 – 12:30	Til Ole Bergmann	Transcranial brain stimulation to study neuronal oscillations
12:30 – 13:30		Lunch Break
13:30 – 15:30	Chaitanya Chirumamilla	TMS-EEG measurement (U5 lab neurology)

**Date: 18.11.2016**

Time	Speaker	Title
09:15 – 10:00	Gabriel Gonzalez Escamilla	Introduction to tDCS
10:00 – 10:45	Andreas Vlachos	Releasing the cortical brake? rTMS induces LTD of inhibition
10:45 – 11:00		Coffee break
11:00 – 11:45	Isabelle Arnoux	(Back) translational approaches in preclinical research on rodent models of neurological disorders
11:45 – 12:30	Florian Müller-Dalhaus	The pharmacology of TMS measures of neural excitability and plasticity
12:30 – 13:30		Lunch Break
13:30 – 15:30	Gabriel Gonzalez & Chaitanya Chirumamilla	TMS-EEG analysis (NIC)

**Speakers:**

**Prof. Dr. Andreas Vlachos**

Institute for Anatomie II  
Heinrich-Heine University, Dusseldorf, Germany

**Dr. Florian Müller Dahlhaus**

Department of Psychiatrie and Psychotherapie  
Johannes Gutenberg-University, Mainz, Germany

**Dr. rer. nat Gabriel Gonzalez-Escamilla**

Movement Disorders and Neurostimulation  
Biomedical Statistics and Multimodal Signal Processing Unit  
Department of Neurology  
Johannes Gutenberg-University, Mainz, Germany

**Dr. Isabelle Arnoux**

Molecular Imaging and Optogenetic  
Mainz Animal Imaging Center  
Johannes Gutenberg-University, Mainz, Germany

**Dr. Martin Glaser**

Functional Neurosurgery  
Department of Neurosurgery  
Johannes Gutenberg-University, Mainz, Germany

**Msc. Nabin Koirala**

Movement Disorders and Neurostimulation  
Biomedical Statistics and Multimodal Signal Processing Unit  
Department of Neurology  
Johannes Gutenberg-University, Mainz, Germany

**Dr. phil. Til Ole Bergmann**

Department of Neurology and Stroke  
University Hospital, Tübingen, Germany

**Msc. Venkata Chaitanya Chirumamilla**

Movement Disorders and Neurostimulation  
Biomedical Statistics and Multimodal Signal Processing Unit  
Department of Neurology  
Johannes Gutenberg-University, Mainz, Germany

All the talks will take place in the Department of Neurology, Mainz, Germany.

**Seminar Room 1,  
Department of Neurology,  
Johannes-Gutenberg-University Hospital,  
Langenbeckstr. 1  
55131 Mainz, Germany**

We are happy to welcome you to the seminar in Mainz.

For registration please send me an email to **mmuthura@uni-mainz.de**.

Organizers:

**Prof. Dr. med. Sergiu Groppa**  
Movement Disorders and Neurostimulation  
Department of Neurology  
Johannes Gutenberg-University, Mainz, Germany

**Prof. Dr.-Ing Muthuraman Muthuraman**  
Movement Disorders and Neurostimulation  
Biomedical Statistics and Multimodal Signal Processing Unit  
Department of Neurology  
Johannes Gutenberg-University, Mainz, Germany