



**Toolkit of Cognitive Neuroscience 2014:
Advanced analysis and source modeling of EEG and MEG data**

Date: May 6-9, 2014

Organizers: Robert Oostenveld, Jan-Mathijs Schoffelen

Location: Donders Centre for Cognitive Neuroimaging
Kapittelweg 29, Nijmegen, The Netherlands
Colloquium Room

PROGRAM

Tuesday May 6, 2014

- 09:00–09:30** **Registration, handouts and coffee** (canteen)
- 09.30–09:45** **Welcome**
Robert Oostenveld
- 09:45–10:45** **Introduction to EEG/MEG and introduction to the FieldTrip toolbox** (Lecture)
Robert Oostenveld
- 10:45-11:00** **Coffee Break**
- 11:00–12:00** **Data acquisition demonstration in the EEG and MEG labs**
Jessica Askamp, Erik te Woerd
- MEG acquisition
- EEG acquisition
- 12:00–13:00** **Lunch**
- 13:00–14:45** **Introduction to Event-Related Fields** (Hands-on)
Nietzsche Lam, Diego Lozano Soldevilla, Robert, Jan-Mathijs
- Defining trials
- Identifying artifacts
- Averaging data
- Displaying data
- 14:45–15:15** **Tea Break**
- 15:15–16:30** **Fundamentals of neuronal oscillations and synchrony** (Lecture)
Nietzsche Lam
- 16:30–17:15** **Wrap-up-the-day: special topics, general questions and answers**
Robert, Jan Mathijs



Wednesday May 7, 2014

- 09:00-10:45** **Time-frequency analysis of power** (Hands-on)
Jörn Horschig, Roemer van der Meij, Jim Herring, Nietzsche, Diego
- Time-frequency analysis with multitapers and/or wavelets
- Displaying time-frequency representation
- 10:45-11:00** **Coffee Break**
- 11:00-12:15** **Forward and inverse modeling** (Lecture)
Robert Oostenveld
- 12:15-13:00** **Lunch**
- 13:00-14:00** **Source reconstruction using beamformers** (Lecture)
Eelke Spaak
- 14:00-15:00** **Identifying oscillatory sources using beamformers** (Hands-on)
Haiteng Jiang, Nietzsche, Diego, Jörn, Jim
- 15:00-15:30** **Tea break**
- 15:30-16:30** **Identifying oscillatory sources using beamformers** (Hands-on)
continued
- 16:30-17:15** **Wrap-up-the-day: special topics, general questions and answers**
Robert, Jan-Mathijs
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- 19:00-21:30** **DINNER at**
Humphreys Restaurant
Vismarkt 7 (Waalkade)
6511 VJ Nijmegen
<http://www.humphreys.nl/onze-restaurants/humphreys-nijmegen>



Thursday May 8, 2014

- 09:00-10:00** **Statistics using non-parametric randomization techniques** (Lecture)
Eric Maris
- 10:00-10:15** **Coffee Break**
- 10:15-12:15** **Statistics using non-parametric randomization techniques** (Hands-on)
Eric, Jan-Mathijs, Eelke, Jörn, Haiteng
Cluster-based statistics applied to ERFs and TFRs
- 12:15-13:00** **Lunch**
- 13:00-14:00** **Connectivity analysis in MEG and EEG data** (Lecture)
Jan-Mathijs Schoffelen
- 14:00-15:00** **Analysis of sensor- and source-level connectivity** (Hands-on)
Jan-Mathijs, Robert, Eelke, Haiteng, Jörn
- Simulate and estimate connected networks
- Source level Granger connectivity
- 15:00-15:30** **Tea Break**
- 15:30-16:30** **Analysis of sensor- and source-level connectivity** (Hands-on)
continued
- 16:30-17:15** **Wrap-up-the-day: special topics, general questions and answers**
Robert, Jan-Mathijs
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Friday May 9, 2014

- 9:00-14:00** **FieldTrip playground, bring your own data!**
Robert, Jan-Mathijs, Roemer, Jörn, Diego, Nietzsche, Jim, Haiteng
Analyze your own data using FieldTrip
- 12:30-13:00** **Lunch**
- 14:00-14:15** **Tea break**
- 14:15-15:00** **Testimonial & evaluation**
Robert, Jan-Mathijs
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