Join Radboud Summer School 2019!

Analyzing Neural Time Series Data

change perspective

Radboud University
Rhythmic activity such as oscillations and synchronization are widespread in neural time series data, and are thought to have important roles in brain function, including providing temporal structure to shape information-processing, dynamically routing information processing, and synchronizing dynamics over multiple spatial and temporal scales. Detailed theories are important for understanding the role of rhythmic activity in the brain, but appropriate data analyses are absolutely essential. Unfortunately, there is often a gap between scientists’ ideas about how to analyze their data, and their knowledge of the mathematical and practical steps to analyze the data in order to test these ideas.

The purpose of this course is to provide an understanding of advanced neural time series (LFP/EEG/MEG) analyses, with a strong focus on time-frequency and synchronization analyses. If you want to analyze your neuroscience data on your own, this course will certainly help get you started. It will also provide a firm basis for using analysis toolboxes such as eeglab or fieldtrip, although the course does not provide instructions for how to use these toolboxes. Each day will be a mix of lectures and hands-on labwork. You will have the opportunity to implement the discussed concepts in Matlab. It is an intensive course designed for learning, but there will be plenty of coffee and chocolates to keep you motivated. This material has been taught by Dr. Cohen for nearly a decade, and is the basis of the book Analyzing Neural Time Series Data (MIT Press, 2014).

After this course you are able to
• Understand the mechanics of the Fourier transform and how to implement it in Matlab
• Use complex wavelet convolution to extract time-frequency information from timeseries data
• Simulate data to test the accuracy of data analysis methods and effects of parameters
• Implement non-parametric statistics to evaluate statistical significance while correcting for multiple comparisons

Number of EC
2 ECTS credits

Course leader
Michael Cohen, Assistant professor
Donders Center for Neuroscience
Cognitive Neuroscience, Radboudumc
Admission documents
Motivation letter and CV

Entry level
Master, PhD, Postdoc and Professional

This course is designed for
Everyone who has experience with data analysis and wants a deeper understanding of advanced data analysis methods and Matlab. Master students are also welcome if they have had some experience with neuroscience data analysis

> More course details on our website

Course dates
Monday 8 July - Friday 12 July 2019
Monday 5 August - Friday 9 August 2019

Course fee
€ 550

Deadline application
1 May 2019 - for the July course
1 June 2019 - for the August course

Discounts
• 10% discount for early bird applicants. The early bird deadline is 1 March 2019.
• 15% discount for students and PhD candidates from partner universities. Please note that these discounts can be combined if you apply before 1 March 2019.

Apply now!
What is the RSS experience?

RSS is more than just a course!

Radboud Summer School offers you a unique opportunity to meet other students and researchers from all over the world with different cultural and academic backgrounds. You will also get to know Radboud University and the city of Nijmegen. Our social programme includes a welcome reception, guest lecture and farewell drinks. And for a small fee you can join our BBQ, River Cruise on a pancake boat, a Pub Quiz, Sports Activities or a City Game.

Want to know more?
Have a look at what participants have said about their experience on our website!

Contact
T. +31-248187706
E: Radboudsummerschool@ru.nl
F: RadboudSummerSchool
I: Radboudsummerschool

www.ru.nl/radboudsummerschool