Join Radboud Summer School 2018!

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 those ideas.

The purpose of this course is to provide a firm grounding for understanding advances neural time series (LFP/EEG/MEG) analyses, with a strong focus on time-frequency and synchronization analyses. The course is mathematically rigorous but is approachable to researchers with no formal background in mathematics. If you want to analyze your neuroscience data completely on your own, this course will certainly help you get 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 lab work. During the lab work you will have the opportunity to implement the concepts discussed in the lecture in Matlab. Lab work is done individually or in small groups of 2-3 students. There will be homework assignments to help you consolidate and develop your newly learned skills (homework is not graded, and solutions will be provided the following day).

You have to bring a laptop with Matlab or Octave (a free Matlab-like software) installed. Desktop computers will not be available.

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

**Number of EC**
2 ECTS credits

**Entry level**
Master, PhD, Post-doc and Professional

**Course leader**
Michael Cohen, Assistant professor, CNS, Radboud UMC

**For whom is this course designed**
Students with a special interest in Health Disparities and in Primary Care and healthcare in an international context.

**Dates**
Monday 6 August – Friday 10 August 2018

**Deadline application**
1 June 2018

**Course fee**
€ 585

**Discounts**
• 10% discount for early bird applicants. The early bird deadline is 1 April 2018.
• 15% discount for students and PhD candidates from partner universities.
Want to be part of the RSS experience?

More than just a course!
Radboud Summer School is more than an academic event. It is a unique opportunity to meet other international students and researchers, to get to know Radboud University and the city of Nijmegen. Our participants come from all over the world and have different cultural and academic backgrounds. Our programme includes the following activities free of charge: welcome reception, guest lecture and farewell drink. We also offer sports activities, a BBQ, a river cruise on a Pancake Boat and a city tour for a small fee.

Have a look at what participants have said about their experience!

You can find more details about the courses on our website

Register now!

Contact
T. +31-248187706
E: Radboudsummerschool@ru.nl
W: www.ru.nl/radboudsummerschool
F: RadboudSummerSchool

www.ru.nl/radboudsummerschool, 5-17 August 2018