BCCN - TVB training course

December 3, 2019

General info

Date: **December 3, 2019**
Time: **8.30 - 17.45**
Location:
Lectures (Petra): **AUDITORIUM BCCN**
Lectures/Hands-on tutorials: **Informatic room PHYS DPT**

Support staff

Julie/Paul: Organizers
Jessica: AV technician

Materials

- Laptop
- Laptop adaptors, charger
- Power strip
- Microphone, pointer
- ...

Course materials

- TVB Distribution (last version) installed on the computer
- TVB-data downloaded
- Hands-out GUI

PROGRAM

December 3, morning session
Lectures

8.30 - 10.00 **Guide tour of The Virtual Brain**
Petra Ritter

Introduction of brain network simulations with The Virtual Brain simulator software: Concepts and overview of its applications (neuroimaging, resting-state, epilepsy, stroke, Alzheimer, etc.), extensions (mouse and macaque brain) and new developments (co-simulation platform TVB-NEST).

Location: AUDITORIUM BCCN

10.00 - 10.30 **Move to Informatic Room**

10.30 - 11.00 **Coffee Break***

11.00 - 12.15 **Theory behind TVB: Introduction to large-scale brain network modeling**
Andreas Spiegler

Introduction to the main building blocks of large-scale brain network modeling using TVB: large-scale connectome, local dynamics (neural mass), integrator (noise), stimulation, monitor, …, region and surface-based modeling.

12.15 - 12.45 **TVB architecture**
Julie Courtiol

Overview of the structural core of the software and presentation of the (graphic and scripting user) interfaces.

12.45 - 14.00 **Lunch Break***

*not provided

December 3, afternoon session
Hands-On tutorials using GUI & SUI

14.00 - 15.00 **First steps with TVB: Generate your first virtual brain model (GUI)**
Jan Stasiński

Step-by-step learn how to simulate a brain network model using TVB.

15.00 - 16.00 **TVB Clinical Application: Modeling epileptogenic brain activity (GUI)**
Julie Courtiol

Using a specific model for epilepsy, learn how to create and simulate a virtual epileptic patient's brain using TVB.

16.00 - 16.30 **Coffee Break***

16.30 - 17.30 **TVB-NEST: Bridging multiscale activity by co-simulation (SUI)**
Denis Perdikis

Step-by-step learn how to perform a co-simulation embedding spiking neural networks into large-scale brain networks using TVB.

17.30 - 17.45 **Discussion & Concluding words**

*not provided