

NODE#1 HAMBURG

PRACTICAL BRAIN NETWORK MODELING

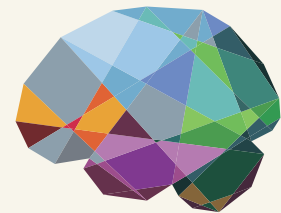
JUNE
7th
2014

Get up to speed about the fundamental principles of full brain network modeling using the open-source neuroinformatics platform The Virtual Brain (TVB).

TVB enables biologically realistic modeling of network dynamics using Connectome-based approaches across different brain scales.

Generate macroscopic neuroimaging signals incl. fMRI, intracranial and stereotactic EEG, surface EEG and MEG for single subjects.

A workshop hosted by the TVB team at:
University Medical Center Hamburg-Eppendorf
Martinistrasse 52 :: Building No. N55, Room No. 210/211
20251 Hamburg :: Germany



THEVIRTUALBRAIN.

PROGRAM MORNING SESSION

09:00 - 09:15 am

A caffeinated history of The Virtual Brain

09:15 - 10:00 am

A generative model of the brain: Describing the building blocks of a brain network model

Basic principles and assumptions, recent studies with different local models, approximation of neural fields

10:00 - 10:30 am

Interacting with TVB

Working with the web UI, command line and scripting interfaces

10:30 - 11:00 am

Coffee break

11:00 - 11:30 am

How to obtain a TVB friendly dataset

Understanding data formats and setting up pipelines for data extraction

11:30 - 12:30 am

Hands-on: Build your own brain network

Running a variety of simulations on a custom-built model

12:30 - 02:00 pm

Lunch break

MORE INFORMATION & REGISTRATION:
WWW.THEVIRTUALBRAIN.ORG/NODE1

PROGRAM AFTERNOON SESSION

02:00 - 02:20 pm

Exporting and sharing your TVB data & results

Analysing TVB results in other computing environments

02:20 - 02:50 pm

Using TVB to determine functional mechanisms in chronic stroke

See practical applications of TVB when studying the effects of chronic strokes

02:50 - 03:20 pm

Hands-on: Modeling the impact of structural lesions

Working with the Connectome as a “parameter”, conduction speed and time delays

03:20 - 03:40 pm

Hands-on: Beyond resting-state and homogeneous models

Designing stimuli to simulate task-driven activity

03:40 - 04:10 pm

Coffee break

04:10 - 04:40 pm

The epileptic brain: Introducing the Epileptor

Learning about a model for seizure dynamics

04:40 - 05:10 pm

Hands-on: Modeling epilepsy using TVB

Building a working example of an epileptic brain