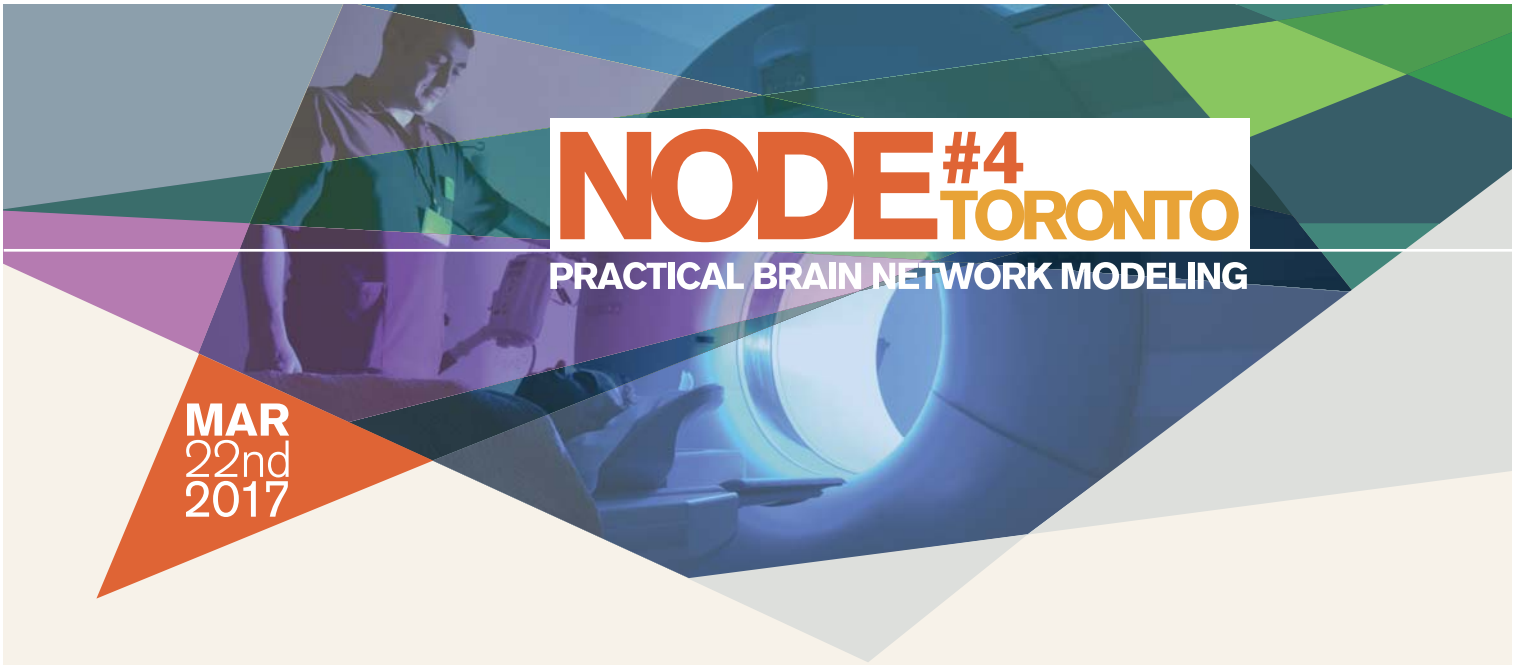


NODE #4 TORONTO

PRACTICAL BRAIN NETWORK MODELING

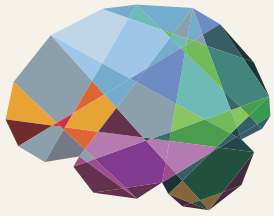
MAR 22nd 2017

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:
Baycrest Health Sciences
Kimel Family Building :: Jacob Family Theatre
3560 Bathurst Street, Toronto, ON, Canada M6A 2E1



THEVIRTUALBRAIN.

PROGRAM
MORNING SESSION

09:00 - 09:15 am
Introduction to workshop & caffeine intake

09:15 - 10:45 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

10:45 - 11:00 am
Coffee break

11:00 - 12:00 am
Interacting with TVB
Working with the web UI, command line and scripting interfaces

12:00 - 01:00 pm
Lunch break

PROGRAM
AFTERNOON SESSION

01:00 - 02:15 pm
Hands-on: How to obtain a TVB friendly dataset
Understanding data formats and setting up pipelines for data extraction

02:15 - 03:15 pm
Hands-on: Modeling brain networks at rest
Modeling a resting state brain and exploring its dynamics

03:15 - 03:30 pm
Coffee break

03:30 - 04:30 pm
Hands-on: Modeling the impact of structural lesions
Working with the Connectome as a "parameter", conduction speed and time delays

04:30 - 05:30 pm
Hands-on: Modeling epilepsy using TVB
Modeling partial seizure propagation for specific patients

05:30 - 05:40 pm
Closing remarks

MORE INFORMATION & REGISTRATION:
WWW.THEVIRTUALBRAIN.ORG/NODE4