

11:20 – 12:00 p.m.	Daniele Marinazzo, Ghent University, Belgium <i>Conserved Ising Model on the Human Connectome</i>
12:00 – 1:10 p.m.	Lunch Break <i>(Session chair: G. Cymbalyuk)</i>
1:10 – 1:50 p.m.	Petra Ritter, Charite, Germany <i>Personalized whole-brain simulations – Linking connectomics and dynamics in the human brain</i>
1:50 – 2:30 p.m.	Andrew James, University of Arkansas, USA <i>Functional brain organization at rest broadly encodes normative variance in cognition</i>
2:30 – 2:50 p.m.	Coffee Break <i>(Session chair: A. Butler)</i>
2:50 – 3:30 p.m.	Viktor Jirsa, Aix-Marseille, France <i>Network mechanisms underlying seizure propagation</i>
3:30 – 4:10 p.m.	Sridevi Sarma, Johns Hopkins University, USA <i>Network dynamics of the brain and influence of the epileptic seizure onset zone</i>
4:10 p.m.	Closing

BrainModes 2015 website: <http://brainmodes.gsu.edu>

Organizers:

Mukesh Dhamala, Department of Physics, College of Arts and Sciences and
Andrew Butler, Byrdine F. Lewis School of Nursing and Health Professions
Georgia State University

Pre-Workshop Course

December 8-9, 2015

Kell Hall, Room 131, Georgia State University, Atlanta, GA, USA

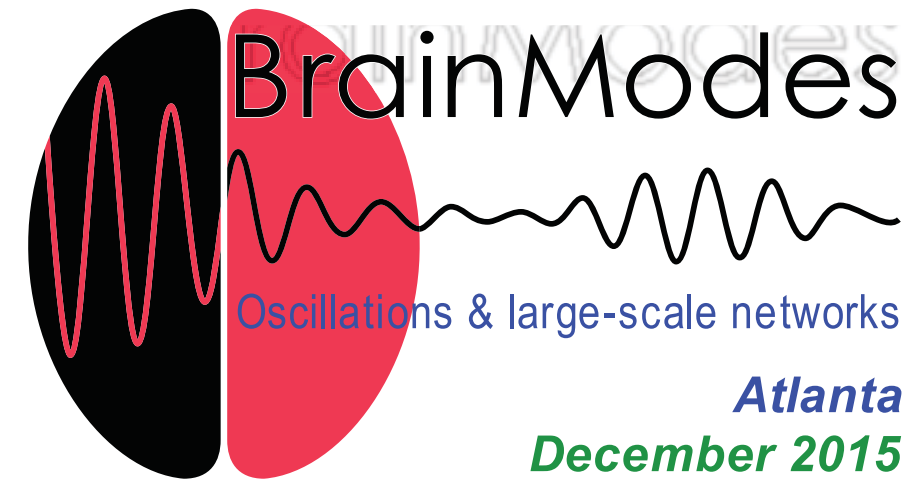
BrainModes Workshop

December 10-11, 2015

Cinefest, Student Center West, Georgia State University, Atlanta, GA, USA

December 10, 2015

Poster Presentation/Reception in the Westin Hotel, 210 Peachtree St. NW Atlanta, GA, USA



BrainModes 2015

BrainModes 2015 is an annual meeting that brings together international experts from various disciplines and seeks to explore innovative means of understanding complex brain activity and multimodal neuroscience data sets. This year's workshop will feature keynote addressed by leading academics in the field of brain oscillatory processes and large-scale networks in functions and dysfunctions.

A pre-workshop is intended to provide participants with the foundations of neuroimaging and computational/cognitive neuroscience necessary for a systematic study of the brain. This pre-workshop course is limited to the first 50 registrants.

Pre-workshop course on December 8 is taught by: I. Belykh, G. Cymbalyuk, M. Dhamala, A. Shilnikov (Georgia State University), S. Keilholz (Georgia Institute of Technology/Emory University), T. Liu (University of Georgia); and demonstration on December 9 by Brain Products, TheVirtualBrain, MagVenture.

Pre-Workshop Course (December 8 and December 9)

(location: 131 Kell Hall)

Tuesday December 8, 2015

- 8:30 – 9:00 a.m. Registration and Continental Breakfast
- 9:00 – 10:00 a.m. Mukesh Dhamala, Georgia State University, USA
Functional Neuroimaging and Brain Network Activity: Methods and Applications
- 10:00 – 11:00 a.m. Shella Keilholz, Georgia Tech/Emory University, USA
The origins of functional connectivity: neural and nonneural contributors
- 11:00 – 12:00 p.m. Tianming Liu, University of Georgia, USA
Introduction to DICCCOL and HAFNI
(<http://caid.cs.uga.edu/>)
- 12:00 – 1:15 p.m. Lunch Break
- 1:15 – 2:15 p.m. Gennady Cymbalyuk, Georgia State University, USA
Cellular mechanisms of rhythm generation
- 2:15 – 3:15 p.m. Andrey Shilnikov, Georgia State University, USA
Elements of bifurcation theory for neural networks: GPU assisted approach
- 3:15pm – 4:15 p.m. Igor Belykh, Georgia State University, USA
Neuronal dynamics from a complex network perspective

Wednesday December 9, 2015

- 8:30 – 9:00 a.m. Continental Breakfast
- 9:00 – 10: 45 a.m. Brain Products (<http://www.brainproducts.com/>)
(EEG system, recordings and applications)
- 10:45 – 12:30 p.m. MagVenture (<http://www.magventure.com/en-gb/>)
(TMS system and applications)
- 12:30 – 1:30 p.m. Lunch Break
- 1:30pm – 4:00 p.m. The Virtual Brain (<http://www.thevirtualbrain.org/>)
(Simulation Platform for Human Brain Activity)

Workshop Program (December 10 and December 11)

(location: Cinefest, Student Center West)

Thursday December 10, 2015

- 8:15 – 9:00 a.m. Registration and Continental Breakfast
- 9:00 – 9:15 a.m. Welcoming remarks
(Session chair: M. Dhamala)
- 9:15 – 10:00 a.m. Nancy Kopell, Boston University, USA
From Anesthesia to Parkinson's Disease: PD as a dynamical disease

- 10:00 – 10:40 a.m. Randy McIntosh, University of Toronto, Canada
Balance of local and global dynamics in healthy and dysfunctional brain networks
- 10:40 – 11:00 a.m. Coffee Break
(Session chair: S. Keilholz)
- 11:00 – 11:40 a.m. Anton Arkhipov, Allen Institute, USA
High-Throughput Experimental and Computational Exploration of the Cortex
- 11:40 am – 12:20 p.m. Larry Snyder, Washington University, St. Louis, USA
Oxygen and Electricity: Neurophysiological underpinnings of correlated oxygen fluctuations
- 12:20 – 1:30 p.m. Lunch Break
(Session chair: A. Shilnikov)
- 1:30 – 2:10 p.m. Maxim Bazhenov, UC Riverside, USA
Synaptic Mechanisms of Memory Consolidation during Sleep Slow Oscillations
- 2:10 – 2:50 p.m. Wilson Truccolo, Brown University, USA
From Neuronal Ensemble Point Process Observations to Brain Modes
- 2:50 – 3:10 p.m. Coffee Break
(Session chair: T. Liu)
- 3:10 – 3:50 p.m. Mingzhou Ding, University of Florida, USA
Imaging Human Brain Function with Simultaneous EEG-fMRI
- 3:50 – 4:30 p.m. Srikantan Nagarajan, UC San Francisco, USA
Functional imaging of neural oscillatory networks during rest and during speaking
- 4:30 – 5:10 p.m. Dipanjan Roy, University of Hyderabad, India
Differential hemispheric dominance and synchrony based on EEG functional connectivity at rest and auditory task
- 6:00 - 7:30 p.m.- Poster Session/Reception (at the Westin Hotel)

Friday December 11, 2015

- 8:30 – 9:00 a.m. Continental Breakfast
(Session chair: J. Turner)
- 9:00 – 9:40 a.m. Steven Bressler, Florida Atlantic University, USA
Top-Down Processing in Neurocognitive Networks
- 9:40 – 10:20 a.m. Sabine Kastner, Princeton University, USA
Neural Network Dynamics for Attentional Selection in the Primate Brain
- 10:20 – 10:40 a.m. Coffee Break
(Session chair: I. Belykh)
- 10:40 – 11:20 a.m. Gijs Plomp, University of Fribourg, Switzerland
Local and large-scale interactions between cortical layers in sensory processes