

Contents

Correlations of Cellular Activities in the Nervous System: Physiological and Methodological Considerations	1
Jose Luis Perez Velazquez, Ramon Guevara Erra, Richard Wennberg, and Luis Garcia Dominguez	
Synchronization Between Sources: Emerging Methods for Understanding Large-Scale Functional Networks in the Human Brain ...	25
Sam M. Doesburg and Lawrence M. Ward	
Approaches to the Detection of Direct Directed Interactions in Neuronal Networks	43
Ariane Schad, Jakob Nawrath, Michael Jachan, Kathrin Henschel, Linda Spindeler, Jens Timmer, and Björn Schelter	
The Phase Oscillator Approximation in Neuroscience: An Analytical Framework to Study Coherent Activity in Neural Networks	65
Roberto F. Galán	
From Synchronisation to Networks: Assessment of Functional Connectivity in the Brain	91
Cornelis J. Stam	
The Size of Neuronal Assemblies, Their Frequency of Synchronization, and Their Cognitive Function	117
Johannes Sarnthein and Astrid von Stein	
Synchrony in Neural Networks Underlying Seizure Generation in Human Partial Epilepsies	137
Fabrice Bartolomei and Fabrice Wendling	
Detection of Phase Synchronization in Multivariate Single Brain Signals by a Clustering Approach	149
Axel Hutt and Matthias H.J. Munk	

Denoising and Averaging Techniques for Electrophysiological Data	165
Matthias Ihrke, Hecke Schrobsdorff, and J. Michael Herrmann	
Dissection of Synchronous Population Discharges In Vitro	191
Ivan Cohen and Liset Menendez de la Prida	
Time–Frequency Methods and Brain Rhythm Signal Processing	225
Jesse Gillis	
Complex Network Modeling: A New Approach to Neurosciences	241
Yamir Moreno	
Index	265

Supplemental electronic material can be found at
<http://www.springer.com/978-0-387-93796-0>

Coordinated Activity in the Brain
Measurements and Relevance to Brain Function and
Behavior

Perez velazquez, J.L.; Wennberg, R. (Eds.)

2009, XIII, 277 p., Hardcover

ISBN: 978-0-387-93796-0