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Collana	Theoretical Computer Science and General Issues, , 2512-2029 ; ; 5286
Disciplina	512.0285
Soggetti	Artificial intelligence Computer science Computer storage devices Memory management (Computer science) Computer science—Mathematics Neurosciences Artificial Intelligence Theory of Computation Computer Memory Structure Symbolic and Algebraic Manipulation Neuroscience
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Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Hippocampus and Neural Oscillations -- The Brain Computation Based on Synchronization of Nonlinear Oscillations: On Theta Rhythms in Rat Hippocampus and Human Scalp EEG -- Theta Phase Coding in Human Hippocampus: A Combined Approach of a Computational Model and Human Brain Activity Analyses -- Mechanisms for Memory-Guided Behavior Involving Persistent Firing and Theta Rhythm Oscillations in the Entorhinal Cortex -- Encoding and Replay of Dynamic Attractors with Multiple Frequencies: Analysis of a STDP Based Learning Rule -- A Biophysical Model of Cortical Up and Down States: Excitatory-Inhibitory Balance and H-Current -- Dynamics in Olfactory System and Behaviour

-- Dynamical Architecture of the Mammalian Olfactory System -- From Behaviour to Brain Dynamics -- Correlation Structure of Spiking Trains -- Impact of Higher-Order Correlations on Coincidence Distributions of Massively Parallel Data -- Comparing Kurtosis Score to Traditional Statistical Metrics for Characterizing the Structure in Neural Ensemble Activity -- Neural Network Theories on Associative Memory -- Pioneeristic Works on Neuronal Nets: A Short History -- Place-Field and Memory Formation in the Hippocampus -- Improving Recall in an Associative Neural Network of Spiking Neurons.

Sommario/riassunto

This book is devoted to graduate students and researchers with different scientific background (including physics, mathematics, biology, neuroscience, etc.) who wish to learn brain science beyond the boundary of their fields. The volume presents 12 thoroughly revised tutorial papers based on lectures given by leading researchers at the 12th International Summer School on Neural Networks in Erice, Italy, in December 2007. The 12 invited and contributed papers presented provide primarily high-level tutorial coverage of the fields related to neurdynamics, reporting recent experimental and theoretical results investigating the role of collective dynamics in hippocampal and parahippocampal regions and in the mammalian olfactory system. The book is divided into topical sections on hippocampus and neural oscillations, dynamics in olfactory system and behaviour, correlation structure of spiking trains, and neural network theories on associative memory.
