1. Record Nr. UNISALENTO991003599359707536

Titolo	Principles of computational modelling in neuroscience / David Sterratt ... [et al.]
Pubbl/distr/stampa	Cambridge ; New York : Cambridge University Press, 2011
ISBN	9780521877954 (hbk.)
Descrizione fisica	xi, 390 p. : ill. (some col.) ; 26 cm
Classificazione	LC QP357.5
Altri autori (Persone)	Sterratt, Davidauthor
Disciplina	612.801/13
Soggetti	Computational neuroscience
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references (p. [351]- and index
Sommario/riassunto	"The nervous system is made up of a large number of interacting elements. To understand how such a complex system functions requires the construction and analysis of computational models at many different levels. This book provides a step-by-step account of how to model the neuron and neural circuitry to understand the nervous system at all levels, from ion channels to networks. Starting with a simple model of the neuron as an electrical circuit, gradually more details are added to include the effects of neuronal morphology, synapses, ion channels and intracellular signalling. The principle of abstraction is explained through chapters on simplifying models, and how simplified models can be used in networks. This theme is continued in a final chapter on modelling the development of the nervous system. Requiring an elementary background in neuroscience and some high school mathematics, this textbook is an ideal basis for a course on computational neuroscience"--