1. Record Nr. UNINA990002551590403321

Autore	Bookstein, Fred L.
Titolo	The Measurement of Biological Shape and Shape Change / Fred L. Bookstein
Pubbl/distr/stampa	Berlin : Springer Verlag, 1978
ISBN	3540089128
Edizione	[-]
Descrizione fisica	191 p. ; 24 cm
Collana	Lecture notes in biomathematics ; 24
Disciplina	510
Locazione	MAS
Collocazione	MXV-C-9
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia

2. Record Nr. UNINA9910300410003321

Autore	Hramov Alexander E
Titolo	Wavelets in neuroscience / / by Alexander E. Hramov, Alexey A. Koronovskii, Valeri A. Makarov, Alexey N. Pavlov, Evgenia Sitnikova
Pubbl/distr/stampa	Berlin, Heidelberg : , : Springer Berlin Heidelberg : , : Imprint : Springer, , 2015
ISBN	3-662-43850-X
Edizione	[1st ed. 2015.]
Descrizione fisica	1 online resource (331 p.)
Collana	Springer Series in Synergetics, , 0172-7389
Disciplina	515.2433
Soggetti	Statistical physics Biomathematics Neurobiology Physics Signal processing Image processing Speech processing systems Systems biology Applications of Nonlinear Dynamics and Chaos Theory Physiological, Cellular and Medical Topics Applications of Graph Theory and Complex Networks Signal, Image and Speech Processing Systems Biology
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references at the end of each chapters and index.
Nota di contenuto	MathematicalMethods of Signal Processing in Neuroscience -- Brief Tour of Wavelet Theory -- Analysis of Single Neuron Recordings -- Classification of Neuronal Spikes from Extracellular Recordings -- Wavelet Approach to the Study of Rhythmic Neuronal Activity -- Time–Frequency Analysis of EEG: From Theory to Practice -- Automatic Diagnostics and Processing of EEG -- Conclusion -- Index.
Sommario/riassunto	This book examines theoretical and applied aspects of wavelet analysis in neurophysics, describing in detail different practical applications of

the wavelet theory in the areas of neurodynamics and neurophysiology and providing a review of fundamental work that has been carried out in these fields over the last decade. Chapters 1 and 2 introduce and review the relevant foundations of neurophysics and wavelet theory, respectively, pointing on one hand to the various current challenges in neuroscience and introducing on the other the mathematical techniques of the wavelet transform in its two variants (discrete and continuous) as a powerful and versatile tool for investigating the relevant neuronal dynamics. Chapter 3 then analyzes results from examining individual neuron dynamics and intracellular processes. The principles for recognizing neuronal spikes from extracellular recordings and the advantages of using wavelets to address these issues are described and combined with approaches based on wavelet neural networks (chapter 4). The features of time-frequency organization of EEG signals are then extensively discussed, from theory to practical applications (chapters 5 and 6). Lastly, the technical details of automatic diagnostics and processing of EEG signals using wavelets are examined (chapter 7). The book will be a useful resource for neurophysiologists and physicists familiar with nonlinear dynamical systems and data processing, as well as for gradua te students specializing in the corresponding areas.