



entropy

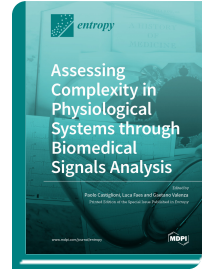


Special Issue Reprint

Assessing Complexity in Physiological Systems through Biomedical Signals Analysis

www.mdpi.com/books/reprint/3443

Edited by
Paolo Castiglioni
Luca Faes
Gaetano Valenza



ISBN 978-3-03943-368-1 (Hardback)
ISBN 978-3-03943-369-8 (PDF)

Complexity is a ubiquitous phenomenon in physiology that allows living systems to adapt to external perturbations. Fractal structures, self-organization, nonlinearity, interactions at different scales, and interconnections among systems through anatomical and functional networks, may originate complexity. Biomedical signals from physiological systems may carry information about the system complexity useful to identify physiological states, monitor health, and predict pathological events. Therefore, complexity analysis of biomedical signals is a rapidly evolving field aimed at extracting information on the physiological systems. This book consists of 16 contributions from authors with a strong scientific background in biomedical signals analysis. It includes reviews on the state-of-the-art of complexity studies in specific medical applications, new methods to improve complexity quantifiers, and novel complexity analyses in physiological or clinical scenarios. It presents a wide spectrum of methods investigating the entropic properties, multifractal structure, self-organized criticality, and information dynamics of biomedical signals touching upon three physiological areas: the cardiovascular system, the central nervous system, the heart-brain interactions. The book is aimed at experienced researchers in signal analysis and presents the latest trends in the complexity methods in physiology and medicine with the hope of inspiring future works advancing this fascinating area of research.



Order Your Print Copy
You can order print copies at
www.mdpi.com/books/reprint/3443

MDPI Books offers quality open access book publishing to promote the exchange of ideas and knowledge in a globalized world. MDPI Books encompasses all the benefits of open access – high availability and visibility, as well as wide and rapid dissemination. With MDPI Books, you can complement the digital version of your work with a high quality printed counterpart.



Open Access

Your scholarly work is accessible worldwide without any restrictions. All authors retain the copyright for their work distributed under the terms of the Creative Commons Attribution License.



Author Focus

Authors and editors profit from MDPI's over two decades of experience in open access publishing, our customized personal support throughout the entire publication process, and competitive processing charges as well as unique contributor discounts on book purchases.



High Quality & Rapid Publication

MDPI ensures a thorough review for all published items and provides a fast publication procedure. State-of-the-art research and time-sensitive topics are released with a minimum amount of delay.



High Visibility

Due to our global network and well-known channel partners, we ensure maximum visibility and broad dissemination. Title information of books is sent to international indexing databases and archives, such as the Directory of Open Access Books (DOAB), and the Verzeichnis Lieferbarer Bücher (VLB).



Print on Demand and Multiple Formats

MDPI Books are available for purchase and to read online at any time. Our print-on-demand service offers a sustainable, cost-effective and fast way to publish MDPI Books printed versions.