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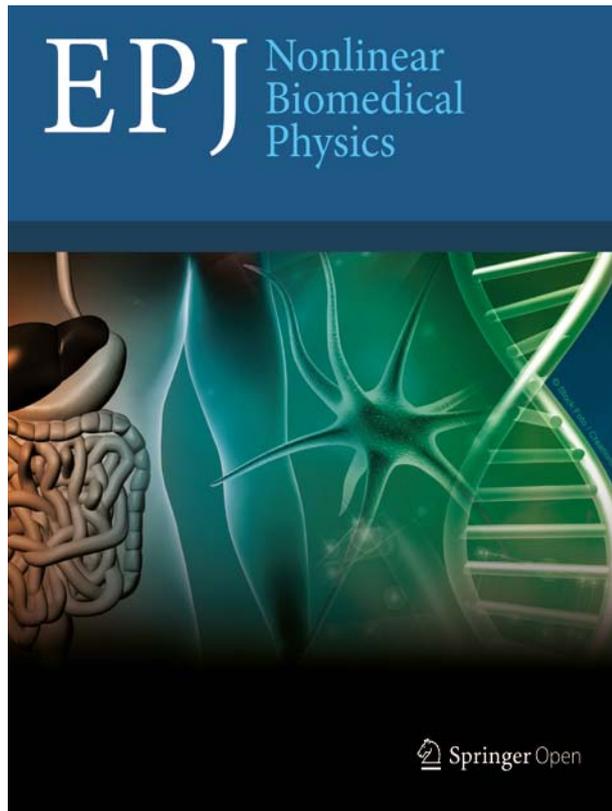


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EPJ Nonlinear Biomedical Physics is a peer-reviewed, open access journal promoting the field of quantitative biomedical complexity science.

It is specifically devoted to the dissemination of knowledge about the applications of nonlinear dynamics and complexity-inspired integrative systems science, to the quantitative modeling and understanding of how structure, function and/or dysfunctions and diseases, often concomitantly, emerge in complex biomedical matter, systems and processes.

The focus will be on the application-driven development of theoretical, experimental and computational techniques. This includes the development of relevant methodologies, instrumentation, and related advanced technology. *EPJ Nonlinear Biomedical Physics* publishes in sections based on subject area.

Authors may choose at submission one of the following sections:

Interdisciplinary Topics

This section is devoted to the exploration of a number of relevant topics including but not limited to psychophysics, fractals in medicine, methods of physical therapy, structure-function relationships, network topology, dynamics of anesthesia, nonlinear signal and image analysis, anatomopathology and virtual patient simulations.

Physics of Biological Systems and Their Interactions

This section is concerned with the fundamental physical principles that

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govern functional units of living systems (such as organs and organ systems) at intermediate and macroscopic scales. Emphasis is on the investigation of biological transport systems and networks (such as e.g. the cardiovascular system) and their couplings to similar or other type of functional units (e.g. biological information processing systems). In contrast to the goal of efficient mathematical modelling in systems biology, the focus of this section is on the search for basic principles and operating mechanisms.

Physics of Cancer and Oncology

Cancer research is a multidisciplinary effort in which physical methods and concepts have been playing an increasingly prominent role. In this section all aspects of experimental, computational and theoretical physics with applications to cancer research and oncology in general will be given a forum for the dissemination of latest results. Areas of research of particular interest include: quantitative models of tumor initiation and progression, mechanical and electrical properties of cancer cells, ionizing radiation effects on sub-cellular structures, nanotechnology applications in oncology, tumor imaging techniques, pharmacokinetics of chemotherapeutic agents, models of metabolic and genomic instabilities, evolutionary models of cancer.

Systems Biology and Dynamical Diseases

In this section, methods and results from systems biology, their underlying physical principles and their potential medical applications are explored. Relevant topics include (but are not limited to) the analysis of system-wide data, modeling strategies in systems biology, metabolic diseases, mathematical models of biological systems or of disease dynamics, physical insights into biological systems or into disease dynamics, methods from nonlinear dynamics applied to topics in systems biology.

Systems Neurosciences and Integrative Brain Research

The section is devoted to the development, exploration and application of integrative concepts in systems neuroscience and nonlinear brain dynamics. Its scope ranges from theoretical, experimental, informatics to methodological research.

For more information and to submit your manuscript, please visit epjnonlinearbiomedphys.com

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