Special Issue on
Biomedical Signal Processing and Modeling Complexity of Living Systems

Call for Papers

Living systems are often maintained by information flows, and as such, they present interesting mathematical problems, for instance, in the modeling and analysis of spatial structures, self-organization, environmental interaction, behavior, and development. Biomedical signals extract information from the complex phenomena being measured, which are typically a time series having both a regular and random component. Solutions attempt to map general principles, which are used to model how the living systems work. Many researchers have been studying these problems because of their interesting mathematical features and because of their scientific importance.

The focus of this special issue is the mathematical analysis and modeling of time series in living systems and biomedical signals. It is mostly interested in the related new development of both theoretical study and practical implementation, either with modeling, complexity, statistics or signal transformation in living systems. We are soliciting original high-quality research papers on topics of interest connected with the living systems and biomedical signals. Potential topics include, but are not limited to:

- Modeling dynamical complexity in living systems (network dynamics, mass action, dynamical systems theory, etc.)
- Methods for analysis and characterization of dynamical complexity (nonlinear time series analysis, etc.)
- Biomedical signal analysis such as mathematical pattern analysis of biological signals, generative mechanisms of biological signal patterning, implementation of signal analysis algorithms, linking biological structure to biological signal generation, and intracellular signal processing

Papers on related models and applications, such as systems theory, biological organization, and biomedical information processing are also welcome if the works are in the core themes of this issue.

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Manuscript Due	September 1, 2011
First Round of Reviews	December 1, 2011
Publication Date	March 1, 2012

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