Computational and Mathematical Methods in Medicine

Special Issue on
The Heuristic Power of Mathematical Models for Complex Biological Phenomena

CALL FOR PAPERS

The unique property of living systems, namely, the ability to react to external (from the environment) and social (from similar living systems) stimuli, makes IT very difficult to predict (and unpredictable in the long term) their behaviour. In such a context, we are inclined to consider, more than overwhelming, the multifaceted challenge posed to the heuristic abilities of mathematics intriguing and fascinating. Thus, we invite investigators to send their contribution in the form of relatively short reviews of quantitative approaches to biological modelling focusing on relative merits and pitfalls of different strategies of analysis; original papers devoted to the analysis/simulation of data/signals of general interest for their descriptive/predictive value.

In all cases the emphasis will be on the general applicability of the described methods whenever solutions in "closed form" of the associated numerical problems are lacking. The expected audience is vast and includes people mainly (although nonexclusively) interested in certain topics.

Potential topics include but are not limited to the following:

- Exploring the realm of complex networks, model validation strategies, intelligent agents simulations, nonlinear time series analysis, cellular and tissutal mechanisms of adaptation and survival, and pattern recognition
- Simplifying as much as possible (but not too much!) the multivariate description of biological phenomena in order to identify the minimal dimensions needed for their unequivocal characterization in a multidimensional space
- Working out efficient simulation strategies for the reproduction of time dependent biological phenomena ruled by totally/partially unknown mechanisms

Authors can submit their manuscripts through the Manuscript Tracking System at http://mts.hindawi.com/submit/journals/cmmm/hpbp/.

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