Special Issue

Assessing Complexity in Physiological Systems through Biomedical Signals Analysis II

Message from the Guest Editors

Complexity is ubiquitous among physiological systems, originating from fractal structures, self-organization, nonlinearity, interactions at different levels/scales, and interconnections through physiological networks. Biomedical signals carry information on the system complexity that may help to monitor health conditions or predict pathological events. Thus, recent trends in signals analysis aim at designing tools for extracting such information from time series like EEG and EMG, beat-by-beat cardiovascular variables, or breath-by-breath respiratory variables. However, important issues remain open, like the development of methods that: distinguish randomness from complexity; provide estimates on short series or from multivariate recordings; allow multiscale estimates of predictability, entropy, and multifractality; represent parametrically the stochastic processes; or set the analysis parameters automatically. Thus, this 2nd volume of our special issue is aimed at collecting methodological contributions to improve complexity-based methods of biosignals analysis and new applications illustrating the value of complexity analysis. State-of-the-art reviews are also welcome.

Guest Editors

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