Special Issue

Entropy and Analysis of EEG/ECG

Message from the Guest Editors

The biomedical signals, such as electrocardiogram (ECG) and electroencephalogram (EEG), are windows to the electrical activities of the heart and brain, both in a noninvasive manner. The ECG and EEG can be analyzed using derived signals such as heart rate variability and energy of the corresponding frequency bands, respectively. These signals exhibit nonlinear behaviors, which have been successfully analyzed using entropy-based quantifiers, fractals and other nonlinear techniques. For this special issue, original contributions or reviews related to heart rate variability, morphological ECG analysis, dynamics of EEG subband energies, spike timing in EEG, etc. using nonlinear dynamic tools such as entropy, fractality, and others will be welcome. The Special Issue of interest include, but are not limited to:

- heart rate variability, blood pressure variability, blood volume variability, and other cardiovascular time series
- energy sub-band decomposition, inter-spike times, and others neurological time series
- clinical applications of nonlinear times series analysis

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The concept of entropy is traditionally a quantity in physics that has to do with temperature. However, it is now clear that entropy is deeply related to information theory and the process of inference. As such, entropic techniques have found broad application in the sciences.

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