



entropy



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Entropy Methods for Cardiorespiratory Coupling Analysis

Guest Editors:

Prof. Dr. Mirjana M. Platiša

Laboratory of Biosignals,
Institute of Biophysics in
Medicine, Faculty of Medicine,
University of Belgrade,
Višegradska 26-2, 11000
Belgrade, Serbia

Dr. Beatrice Cairo

Department of Biomedical
Sciences for Health, University of
Milan, 20133 Milan, Italy

Dr. Riccardo Pernice

Department of Engineering,
University of Palermo, 90128
Palermo, Italy

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Message from the Guest Editors

Entropy is a nonlinear measure employed to quantify the dynamical properties of biomedical signals. Various methods based on Shannon entropy have been applied to estimate the complexity or irregularity of multivariate signals over multiple scales; these have also been utilized in the analysis of cardiac and respiratory time series to examine the features of bidirectional cardiorespiratory interactions. In the last few decades, in addition to the neural control of the heart rhythm, many basic and clinical studies have revealed the properties of the neural control of breathing. However, we remain unable to recognize the whole spectrum of the variability in cardiorespiratory coupling during wakefulness, sleep, exercise or changes in the cardiovascular and respiratory system induced by pathological conditions. This Special Issue aims to disseminate the results obtained via the development of novel entropy metrics and/or the implementation of standard entropy measures under the different physiological and pathological conditions applicable in the examination of cardiorespiratory interactions.



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Special Issue



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Editor-in-Chief

Prof. Dr. Kevin H. Knuth

Department of Physics, University
at Albany, 1400 Washington
Avenue, Albany, NY 12222, USA

Message from the Editor-in-Chief

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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Entropy Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland

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