ORDINAL PATTERN APPROACH FOR THE ASSESSMENT OF HEART RATE AND SYSTOLIC BLOOD PRESSURE COUPLING

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ABSTRACT

Ordinal pattern approach provides powerful methods of evaluating complexity of time series. It has been recently widely applied due to its simplicity, computational efficiency and resistance to noise. We use permutation entropy and the concept of transcripts (products of permutations) to study coupling complexity of two time series. In our research we analyze physiological data and study various aspects of interactions between heart rate and systolic blood pressure, which may give a better insight into cardiovascular regulation in healthy individuals and hypertensive patients.

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