

Cover image

Analysis of a human electrocardiogram using ordinal networks: a short segment of an electrocardiogram record from the PhysioNet Fantasia Database (top) is transformed into a complex network (right) based on the temporal succession of order patterns in the data. Network nodes represent system states and edges define state transitions. Local complexity is quantified by computing the entropy of the transitional probabilities with respect to the forward-time evolution of the system at each node, as shown on the network by the colour map from black (minimum) through red to yellow (maximum). Entropy values can then be mapped back onto a time delay reconstruction of the system's phase space (left) for qualitative assessment of local complexity on the attractor, or averaged to quantify the global complexity of the data. Image prepared by Michael McCullough.

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