The multiscale entropy algorithm and its variants: a review

Multiscale entropy (MSE) analysis was introduced in the 2002 to evaluate the complexity of a time series by quantifying its entropy over a range of temporal scales. The algorithm has been successfully applied in different research fields. Since its introduction, a number of modifications and refinements have been proposed, some aimed at increasing the accuracy of the entropy estimates, others at exploring alternative coarse-graining procedures. In this review, we first describe the original MSE algorithm. Then, we review algorithms that have been introduced to improve the estimation of MSE. We also report a recent generalization of the method to higher moments.

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