عنوان مقاله:

An Adaptive Segmentation Method Using Fractal Dimension and Wavelet Transform

نویسنده:

S.M Anisheh - *Department of Computer and Electrical Engineering Babol Noushirvani University of Technology, P.O.Box ۴۷۱۴۴, Babol, Iran*

خلاصه مقاله:

In analyzing a signal, especially a non-stationary signal, it is often necessarythe desired signal to be segmented into small epochs. Segmentation can beperformed by splitting the signal at time instances where signal amplitude orfrequency change. In this paper, the signal is initially decomposed into signals withdifferent frequency bands using wavelet transform. Then, fractal dimension of thedecomposed signal is computed and used as a feature for adaptively segmenting thesignal. Any changes on the signal amplitude or frequency are reflected on the fractaldimension of the signal. The proposed method was applied on a synthetic signal andreal EEG to evaluate its performance on segmenting non-stationary signals. Theresults indicate that the proposed approach outperforms the existing method insignal segmentation.

کلمات کلیدی:

Segmentation, Non-stationary, Wavelet transform, Fractal dimension