عنوان مقاله:

Automatic Epilepsy Detection Using the Instantaneous Frequency and Sub-Band Energies of the EEG Signals

محل انتشار:

نوزدهمین کنفرانس مهندسی برق ایران (سال: 1390)

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خلاصه مقاله:

In this paper, we propose a novel approach for the multiclass electroencephalogram (EEG) signals classification problem. This method uses the features derived from the instantaneous frequency and the energies of the EEG signals in different sub-bands. Results of applying the method to a publically available database reveal that, for the given classification task, the features consistently exhibit a very high degree of discrimination between the EEG signals collected from healthy and epileptic patients. Also, the analysis of the effect of the window length used during feature extraction from the EEG signals suggests that features extracted from EEG segments as short as 5 seconds achieve a very high average total accuracy of 94%.

کلمات کلیدی:

electroencephalogram (EEG) signals, seizure detection, time-frequency analysis, instantaneous frequency, Kaiser energy

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