Abstract

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analysis of non-stationary electrocardiogram signals using iterative wavelet decomposition

ecg signal is acting an important role in the principal diagnosis, prognosis, survival analysis of heart diseases. This paper will present a model for integrating integer packet wavelet transform with iterative signal subspace separation denoising in the analysis of the ecg. A proposed model will be introduced for ecg feature extraction/detection of small variations/deformation in ecg signals. A model will be presented for the separation of a desired signal subspace of arbitrary dimensions from noisy, possibly degenerate, multichannel mixtures of signal/noise. An important advantage of this method is that it can separate the subspaces without losing the dimensions/main characteristics of the signals, which is an important issue for deformation analysis of noisy ecg signals. Experimental results show a robust ability of detecting variations/analysis of different ecg signals.