EFFICIENT ECG BACKGROUND NORMALIZATION (WedAmOR7)

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Abstract :

This paper presents an improved morphological approach for baseline wander correction in electrocardiogram (ECG) signals, with emphasis on preserving all required clinical information of the original signal. The algorithm consists of only one stage of morphological processing (while similar morphological filters need two stages). The morphological operators are applied to approximate the baseline drift. Then it is subtracted from the input signal to leave a corrected−baseline signal. The performance of the algorithm is evaluated with real ECGs containing artificial and real baseline drift. Compared with all existing morphological methods, there is a substantial improvement, especially in reducing distortion of the baseline waveform in any part of the signal. The experimental results prove that the proposed method is less sensitive to the size of the structuring element if a reasonable size is considered.

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