研究论文

一种QRS波群实时检测方法

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摘要：

结合模板匹配和改进的导数阈值法，提出了一种QRS波群实时检测方法CT^2（combination method of template matching and improved derivative threshold）。首先，预采集一段ECG信号，使用高斯函数构造QRS模板；然后将实时采集的ECG信号使用CT^2检测R波位置。为了比较算法检测精度和效率，使用CT^2和基于小波模极大值的方法进行了对比。结果表明，CT^2检测精度与基于小波模极大值的方法相当，但运算时间大大缩短，适于实时检测。

关键词： QRS实时检测　QRS模板　模板匹配

A Real-Time QRS Complex Detection Method

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Abstract:

A QRS detection method $CT^2$2 was proposed by combining template matching with improved derivative threshold method. Firstly, a QRS template was constructed using Gaussian function according to ECG signals. Secondly, R wave detection was implemented using CT^2. The accuracy and efficiency of CT^2 and algorithm based on wavelet transform modulus maxima were compared. The results show that the accuracy equals whereas the CT^2 method greatly shortens operation time thus it's suitable for real-time use.

Keywords: Real-time QRS detection　QRS template　Template matching

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