Abstract

Electrocardiograms (ECGs) are signals that originate from the action of the human heart. The ECG is the key biosignal for aiding the clinical staff in disease diagnosis. The recognition and analysis of the ECG signals is a very important task. This could be difficult, because the size and form of these signals may change eventually and can be noised. ECG noise removal is complicated due to the time varying nature of ECG signals. The traditional approach to remove high frequency noise from ECG signal is to employ a low-pass filter [1]. However, the cut-off frequency is difficult to determine and it may introduce some additional artifacts to the signal, especially on the QRS wave. Other filtering techniques that have been proposed are reviewed here. The next step is extracting feature from the signal. One cardiac cycle in an ECG signal
consists of PQRST waves. The feature extraction scheme determines the amplitude, intervals etc. in the signal for further classification of cardiac diseases. Recently many research and techniques have been developed for processing the ECG signal. The techniques for filtering and extraction are reviewed here. Keywords: ECG, Feature Extraction, Noise.

References

- Felipe E. Olvera, ”Electrocardiogram Waveform Feature Extraction Using the Matched Filter”, ECE 510: Statistical Signal Processing II
- Suranai Poungponsri, Xiao-Hua Yu, "Electrocardiogram (ECG) Signal Modeling and Noise Reduction Using Wavelet Neural Networks", CA 93407, USA

**Index Terms**

Computer Science  
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**Keywords**

ECG  Feature Extraction  Noise