Paper Title

(9)ECG Signal Analysis: Different Approaches

1. **Preprocessing: Filtering & Segmentation**

A. Hilbert Transform Approach

The ECE signal is pre-processed to remove baseline

wanders and power line interference using band pass filter.

The analysis of low frequency ST -The band-pass filter is implemented from high-pass filter and low-pass filters. The high-pass filter is designed choosing cut-off frequency of 0.5 Hz, considering the slowest heart rate, since the heart beat during bradycardia may be around 40 beats/minute (approximately 0.6 Hz).

B. Filter Bank Approach

In this approach the ECG signal is analyzed based on frequency content. Depending upon the sharpness of the morphology of Q, R and S waves the frequency content may extend even beyond 50 Hz. Hence the best way is to detect heartbeats is to analyze ECG signal based on different sub- bands of the ECG using FIR filters in the form of a filter bank, instead of considering just the output of one filter which maximizes SNR of the QRS.

The adaptive filter using LMS filter is used to

remove 50 Hz (60 Hz) power line interference. In adaptive

technique, generally rejection range for a filter is less, which

increases the quality and accuracy of medical diagnoses.

1. **Feature Extraction**

1. **Classification & Classifier**
2. **Accuracy**
3. **Two Leads or One Lead ? In case of two leads .. how classification of two leads is merged to have final decision ?**
4. **Classes**