Abstract

ECG signal plays an important role in the primary diagnosis and analysis of heart diseases. When an Electrocardiogram is recorded many kinds of noise are recorded. The aim of this paper is to use discrete wavelet transform (DWT) for de-noising the ECG signal. Text formatted ECG signals of ten second duration are taken from the MIT-BIH arrhythmia database. ECG signal of Modified lead II (MLII) are chosen for processing. For wavelet transform, daubechies wavelets were used because the scaling functions of this wavelet filter are similar to the shape of the ECG. From the decomposition of the ECG signal it was seen that the low frequency component cause the baseline shift, theses component were deducted to get a signal without baseline drift. Also the high frequency components of the signal were removed for getting denoised signal. A program has been developed with MATLAB software for this work.

References

- L. Cromwell, F. J. Weibell, and E. A. Pfeiffer: Biomedical Instrumentation and
Baseline Drift Removal and De-Noising of the ECG Signal using Wavelet Transform

- Abdel-Rahman, Al-Qawasmi and Khaled Daqrouq: ECG signal enhancement Using Wavelet Transform, Published by WSEAS TRANSACTION on BIOLOGY and BIOMEDICINE; issue: 2; Volume: 7; pp: 62-72; April 2010.

**Index Terms**

<table>
<thead>
<tr>
<th>Computer Science</th>
<th>Signal Processing</th>
</tr>
</thead>
</table>

**Keywords**

ECG  Wavelet transform  P_QRS-T waves  Baseline drift  Denoising.