

ABSTRACT

Electrocardiogram (ECG) is a form of signal produce by a heart muscle electrical activity. ECG is an information record of heart condition taken with an electrode sited within the human body. This record is used by the specialist to determine the heart condition of a patient. ECG signal is recorded with a measure of electrocardiograph equipment. In the process, an unwanted noise often influence the signal, therefore it will resulting a difficult analyze in further progression.

This noise had the frequency range as same as the ECG signal, consequently it is not possible to use the BPF filter to reduce the noise. The purpose of this final task is to design a filter to reduce any unwanted noise within ECG signal using a Wavelet Discrete Transformation. The ECG signal will be decomposed to produce Wavelet sub bands. Then, the analysis between EKG signal and noise partition will be performed within every wavelet subbands using the threshold value. For each in every subband will be selected a threshold value using the iterative threshold method. And then, every component which assumed as an unwanted noise will be deleted using the hard thresholding method. The essential ECG signal is acquired with a reconstruction from thresholded wavelet subbands using a wavelet re-transformation.

Key words: discrete wavelet transform, wavelet subband, iterative threshold, and hard thresholding.