P. Mithun, ECG baseline wander correction and noise reduction, M. Tech. Thesis, Department of School of Biosciences & Bioengineering, Indian Institute of Technology Bombay, 2010.

Supervisor(s): P. C. Pandey

Abstract **-** The project objective is to investigate methods for correcting motion artifact and baseline wander. Out of the various denoising methods reviewed, the wavelet-based denoising using scale-dependent thresholding was investigated. The decomposition levels containing negligible amount of signal and significant noise were removed and the signal was reconstructed. The wavelets Daubechies 8 (db8) and discrete Meyer (dmey) performed better than the other wavelets studied. From the study conducted on ECG signals from various sources, it was observed that the investigated technique suppresses the baseline wander significantly and it improved automated detection of R-peaks. A FIR band-pass filter was designed to approximate the filtering by wavelet-based denoising and it gave a comparable performance.