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## Abstract

In this paper, we proposed an engineering approach as a noninvasive technique for acquiring and analysis of Electrogastragram [EGG]. Active electrode [AE] setup is used to acquire the myoelectrical activity of the stomach due to its higher sensitivity of a acquiring the Electrogastragram [EGG] signals compare to passive electrode and it is most reliable because signal loss is prevented. By using appropriate filter and by using Electromagnetic Interference [EMI] shield. EGG recorded for more than hundred and fifty human being includes the normal individual and patients with digestive system disorder such us Bradygastria, Tachygastria, Dyspepsia, etc. A database is created for the analysis purpose. The change in frequency and Power for disorders patients compare to normal Individual from the power spectrum plot. Wavelet Transform analysis includes Discrete Wavelet Transform [DWT] to analyze the signal for the diagnosis of various gastric disorders as mentioned above. In wavelet analysis, the data of a patient or normal individual is considered. The signal is reconstructed with a data obtained through data scope. This input signal undergoes Principle Component Analysis [PCA] as a preprocessing and then the interference and noise in the EGG signal are removed to obtain de-noised signal. The denoised EGG signal is plotted for power spectral density estimation with

Welch power spectral Density Estimation. As a result of the proposed method the signal is analyzed up to five levels. The DWT is applied using the db4. The wavedec, appcoef and wrcoef commands in the MATLAB are used to apply the transform and plot the coefficients. From the reconstructed signal plot it is found those 5 peaks (3cpm) for normal subject, large number of peaks for Tachygastria and less number of peaks for Bradygastria.

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### Index Terms

Computer Science

Soft Computing

### Key words

Active Electrode

Electrogastrogram

Tachygastria

Bradygastria

DWT