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A STUDY OF SPECTRAL ESTIMATION FOR ELECTROOCULOGRAM SIGNALS - A COMPARATIVE STUDY

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Abstract

Extracting useful information from biological signals in their raw form is a difficult task. .This has inspired biological signal analysis in extracting useful information from the biological signals. The EOG is a non-invasive method for recording eye movements. Besides the clinical research and laboratories usage, EOG is also broadly used in developing assistive technologies. The non-invasiveness, ease and minimal discomfort to the subject, makes EOG a suitable choice for recording the eye movements. The physical energy drained in moving eyes is much lesser when compared to other gestures such as nodding head, speaking or writing etc. This encourages developing EOG based assistive devices. In many cases, it is observed that the frequency content of the waveform provides more useful information than the time domain representation. Many biological signals show diagnostically useful properties when viewed in the frequency domain. This paper demonstrates the significance of different spectral estimation methods. A comparison of classical and modern methods of spectral estimation is performed. This paper simply brings out the initial study conducted towards identifying suitable spectral analysis method for Electrooculogram signals.

Keywords : Electrooculogram, spectral estimation, biological signal processing