

Removal of Ocular Artifacts in EEG Signals using Wavelet De-Noising

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Abstract: This paper presents a new empirical method for de-noising of ocular artifacts in the electroencephalogram (EEG) records. In many biomedical signal processing, the noise sources increase the difficulty in analyzing the EEG and obtaining the clinical information. To remove this artifacts a method based on Donoho's de-noising method is used. Recently Stationary Wavelet Transform (SWT) has been used to de-noise the corrupted EEG signals. In this paper, a statistical empirical method for removing ocular artifacts from EEG recordings through SWT is suggested. In this paper, a method to remove ocular artifacts using a new threshold formula and threshold function. This method has to be tested with various artifact EEG signals. Compare with other existing methods, our method give a better results without any complexity and also retain the original information contained in the EEG signal. Power Spectral Density plot and Correlation plot are used as performance metrics in this paper. Our proposed statistical method give the lesser complexity and easy to remove the artifacts with a help of wavelet decomposition and is an efficient technique for improving the quality of EEG signals in biomedical analysis.

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