Abstract

The electroencephalogram records the electrical activity of the brain and is the main resource of information for studying neurological disorders. Corruption of EEG signal is caused by occurrence of various artifacts like line interference, electro-oculogram, electrocardiogram, and muscle activity. These artifacts increase the difficulty in analyzing the EEG and obtaining clinical information. The ocular artifact detection and correction from EEG is of considerable significance for both the automatic and visual analysis of brainwave activity by neurologists for proper diagnosis. In this paper, a statistical method for removing ocular artifacts from EEG recordings through thresholding and correlation is proposed. EEG database of 325 samples from Colorado state university is used for experimentation. The mean, variance, standard deviation, and correlation are the performance metrics used. The results show that the proposed method significantly detects and removes the EOG and line frequency artifact without loss of important part of original EEG.

References

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EOG Artifact Correction from EEG Signals for Biomedical Analysis


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Index Terms

Computer Science
Signal Processing

Keywords

Electroencephalogram (EEG) artifacts  Electro-oculogram (EOG) correlation