

ABSTRACT

The title of the Thesis: Suppression of artifact generated by microsaccade eye movement from measured EEG recording

Artifacts are parasitic signals that bind to an EEG signal. Detection and removal of artifacts is one of the most important disciplines leading to quality EEG signal processing and subsequent reliable analysis. The aim of my bachelor thesis was to analyze methods of suppression of artifact generated by microsaccade eye movement, which occurs in EEG recordings, to validate synchronization via LSL protocol in the eye tracker and EEG device and then use this synchronization in the design of the experiment. The proposed experiment should allow the analysis of methods of suppression of artifact generated by microsaccade eye movement. Synchronous recording was validated by blinking sync pulses. A detection algorithm using threshold values of eye velocity was chosen as the detection method. The extended method of independent components (ICA) - Infomax was chosen based on professional studies as a suitable method of suppression of microsaccade artifact. It is clear from the power spectra and RMSE values that the microsaccade artifact was partially removed from the EEG. A significant amount of information about brain activity has also been removed.