

Real Time Acquisition and Psychoacoustic Analysis of Brain Wave

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Abstract : Psychoacoustics has become a potential area of research due to the growing interest of both laypersons and medical and mental health professionals. Non-invasive brain computer interface like Electroencephalography (EEG) is widely being used in this field. An attempt has been made in this paper to examine the response of EEG signals to acoustic stimuli further analysing the brain electrical activity. The real time EEG is acquired for 6 participants using a cost effective and portable EMOTIV EEG neuron headset. EEG data analysis is further done using EMOTIV test bench, EDF browser and EEGLAB (MATLAB Tool) application software platforms. Spectral analysis of acquired neural signals (AF3 channel) using these software platforms are clearly indicative of increased brain activity in various bands. The inferences drawn from such an analysis have significant correlation with subject's subjective reporting of the experiences. The results suggest that the methodology adopted can further be used to assist patients with sleeping and depressive disorders.

Keywords : OM chant, spectral analysis, EDF browser, EEGLAB, EMOTIV, real time acquisition

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