

## **Abstract**

The electrical nature of the human nervous system has been recognized for more than a century . It is well known that the variation of the surface potential distribution on the scalp reflects functional activities emerging from the underlying brain. This surface potential variation can be recorded by affixing an array of electrodes to the scalp and measuring the voltage between pair of these electrodes which are then filtered, amplified and recorded. The resulting data is Electroenceph(EEG).The nonlinear nature of neuronal activity contributes to the formation of an EEG signal with very complex dynamics . EEG is very useful for Rehabilitation Robotics / Intelligent adaptive system. Bispectral Analysis is proposed for the purpose of extracting more information beyond second order statistics. There is a body of evidence showing that the EEG signals exhibit non-gaussian behavior. In the thesis, Bispectra or Higher order spectra kept more information so I did bispectral analysis. In my experiment, I used the 10-20 System of electrode Placement, which is based on the relationship between the location of an electrode and the underlying area of cerebral cortex ( the "10" "20" refer to the 10% or 20% interelectrode distance). The actual EEGs, with normal subjects in interaction and observation, are analysed in terms of bispectral analysis. The Experimental results shows that bispectral pattern of normal EEG does not change during interaction and observation.