

NON-POLAR C_{EEG} : GENERALIZATION OF FLAT ELECTROENCEPHALOGRAPHY DURING EPILEPTIC SEIZURE.

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One of the major roles of electroencephalography (EEG) is as an aid to diagnose epilepsy. Abnormal patterns such as spikes, sharp waves and, spikes and wave complexes can be seen. The main objective of this research is to extract information about the dynamics from a few observations of this recorded signal regardless where EEG sensors are located.

A developed method by Fuzzy Research Group, Department of Mathematics, UTM, namely Flat EEG for mapping high dimensional signal into a low dimensional space will be generalized to accommodate arbitrary locations of EEG sensors and dimension of patient's head. The theoretical (mathematical) foundation of 'Generalized FLAT EEG' which is anticipated as a mapping between two nontrivial manifolds where the domain is non-polar will be built and its mathematical properties for preserving information, in particular recorded EEG signal, will be presented. The method also includes in revealing the location where the most electrical activities occur in spite of fixed locations of EEG sensors which will give a better 3D visualization during seizure attack

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