ABSTRACT

An EEG (Electroencephalogram) is a biomedical signal of the generated by electrical activity in the brain, Electroencephalogram (EEG) signals are the main parameters for determining the condition of the human brain, in biomedical science clean electroencephalogram signals are needed, but in every brain signal recording always get a brain signal that is contaminated by noise, so that in this study will be done a method to clean the noise contained in the brain signal or EEG (Electroencephalogram). This Clean technique is commonly called the Denoising system and as an ingredient for testing in the form of clean brain signals or EEG (Electroencephalogram) using the EMD (Emphirical Mode Decomposition) method.

On the research of this thesis will do the testing signal denoising against EEG (Electroencephalogram) with either method of EMD (Emphirical Mode Decomposition), testing is done using Matlab applications, datasets (EEG signals Electroencephalogram cleanly) taken from the data Base Physionet, a 30 dB input SNR to be added to the signal of EEG (Electroencephalogram), and data signals in use be AWGN noise.

Based on the results of testing using the EMD method, by providing Aditive white gausian noise, it is obtained the following MSE and SNR values: EMD with Soft Treshold has an MSE value of (0.3159204498 dB) and SNR (9.0450982065 dB), EMD with Hard Treshold has an MSE value of (0.0000506143 dB) and SNR (27.2450175619 dB) and EMD with Adaptive Soft Treshold has an MSE value of (0.3167121345 dB) and SNR of (9.0300305627 dB)

Keyword: Denoising, EEG, EMD, IMF