**Feature extraction code Feature\_extraction.m**

500 events(epochs/trails) in each files of in phase and antiphase

After epoch reject some epochs are dropped based on amplitude

ERSP is 2D (frequencies rows and times column ) averaged over 5 epochs /trails

ITC is 2D (frequencies rows and times column ) averaged over 5 epcohs

STFT for 2D( frequencies rows and times column ) each epochs

ERSP features is 4D matrix (frequencies, time, epochs ,files)

ITC features is 4D matrix (frequencies, time, epochs ,files)

STF features is 4D matrix (frequencies, time, epochs ,files)

STFT\_label has corresponding labels for STFT features 0,for inphase and 1 antiphase

All \_labesl has corresponding labels for ITC and ERSP features 0,for inphase and 1 antiphase

**Feature matrix creation code (createfeaturematrix,m)**

I create 2D feature matrix by reshaping 4D ersp/itc/stft feature so that we can use this feature matrices for ML and classification.

This code also calculate and mutual information using ERSP , ITC and STFT feature and corresponding label individual

**Classification (featureclassif.m)**

Creating training and test set from feature matrix and labels applies SVM and LDA classifier

**computeMI.m** calculate mutual information high value mean high rank