# EEGP4

**TO USE: Random frequency band, Phase correlation, weighted- asymmetric graph, Kuramoto oscillators**

# Deliverables

1. Three time series are provided in HDF5 format. Python code to convert them in readable format is also attached herewith.

**Speciality of the datasets:** Seizure onsets from left and right mesial temporal lobe in (111g0L,112g0L) and 113g0R respectively.

1. Resources on Kuramoto model and electrodes are attached.

## Methodology

1. Data filtration:

Filter the data into any frequency band.

1. Data reconstruction:

**Step 1-** Truncate the original iEEG time series by taking all the seizure time points along with 5000 time points from before as well as after seizure. To detect seizure time points, go to: wichtig mesial\_EEGP4.xlsx

**Step 2-** Further, fragmentize the truncated time series into 14 parts.

Scheme: b/f seizure + seizure + a/f seizure = 2+10+2

Length of the fragments, separately in the three regions, must be identical.

**Step 3-** Remove reference channels (go to: reference channles.txt) and any channels that start with G, F, I. Column names must be only the channel names without any other characters in the string.

1. Network construction:

**Step 1-** To construct correlation matrix (CM), use Phase Correlation. So, you see dimension of a CM must be n × n; n= no of channels in time series.

**Step 2-** Binarize the matrix by picking up threshold in such a way so that all the channels are recruited in the network.