**Functions for PAC scripts**

**AlphaBETAMAPS\_NormCorr\_Klmi\_singF.m**

%This script loads '\*Peak\_klmi.set' files (files with PAC values and their permutation centered on alpha and beta peak frequency) and 'Table.mat' (a table with the behavioral data values).

%In a first step, it normalises the PAC value, then:

%Selects the 4 ROI for the electrodes of interest: 'Fp1 F7 F3'; 'Fp2 F8 F4'; 'T7 CP1 CP5 P3'; 'T8 CP2 CP6 P4',

%Mean for the PAC value of electrodes in the selected cluster

%Makes a correlation in both alpha and beta frequencies with the behavioral values

%Makes an FDR correction on the correlations

%Plots the significance graph (with a *p*<0.05)

**preproPasq\_egg.m**

%Basic preprocessing steps for obtaining and storing the EGG phase

%This Function first loads each subject raw data and marker files and preprocess them, including downsampling to 10 hz. The next step involves analyzing the power spectrum of the data. For this we used welch method in fieldtrip, which implies estimating the power in overlapping trials of 200 seconds and then averaging the power over trials.

**prepro\_egg\_path2data.m**

%This function gets the full path of different kind of files, e.g., brainamp markers, for a particular subject. The function is called by prepro\_egg\_loadData

**prepro\_egg\_loadData.m**

%Function to retrieve subject EGG. This function is called by preproPasq\_egg.m

**tools\_bpFilter.m**

% Forward and reverse filter the signal using filtfilt. This corrects for phase distortion introduced by a one-pass filter. This function is called by preproPasq\_egg.m

% filterType has to be specified as string input e.g., ’fir2’

% filterOrder: length of filter kernel in samples (total length =forder +1)

% Length in samples must be smaller than 1/3 of the data to be filtered

% center\_frequency: in hz

% filter\_frequency\_spread: in hz

% transition width: in normalized units 0 to 1

**filtfiltPASQUALE.m**

%FILTFILT Zero-phase forward and reverse digital IIR filtering. This function is called by tools\_bpFilter.m

**Filtering\_under40.m**

Filter data using Hamming windowed sinc FIR filter; lower edge of the frequency pass band (Hz)= 0, higher edge of the frequency pass band (Hz)=40

**global\_path2subject.m**

% path to subject specific folder

**global\_path2root.m**

% path to Physiens root folder. This function is called by global\_path2subject.m

**eeg\_pacP.m**

% Given to time series (continues of epoched), compute cross-frequency-coupling (currently phase-amplitude coupling only).