Biomedical Robotics 2022 Practical Activity: EEG data analysis

- 1) Download the EEG files .set and .fdt from Teams
- 2) Load the EEG file (.set) on EEGLAB
- 3) Using the GUI, complete the following steps:
 - a) Downsampling 250 Hz
 - b) Filtering [1-80Hz] + Notch filter 50 Hz
 - c) Epoching: Time locking event type: G interval: [-1 3]
- 4) Visual inspection for channels and epochs: Channel Data (scroll)
 - a) Remove bad epochs from the plot
 - b) Select bad channels and remove them using the GUI *Important: write down the channels you removed*
- 5) Independent Component Analyses
 - a) Run ICA (it takes some time...now it's time to have a break!)
 - b) Manual Check of the components and mark the "bad" ones Reject Data using ICA -> Reject components by map
- 6) Channels Interpolation
 On the GUI select "Interpolate Electrodes" and "Use specific channels of other dataset"
- 7) On the "clean" dataset Perform Average Reference
- 8) Run the spectra (Plot/Channels Spectra and Maps) on the 100% of the data adding one scalp map for each physiological frequency range (delta 1-4Hz, theta 4-8Hz, alpha 8-13Hz, beta 15-25Hz)