Analysis Process
for the study of slow waves (8 types)

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1) Extract SW events from LFP recordings:

⟶ First, run *ParcourMakeSlowWavesOn1Channel.m* : to get superficial and deep slow waves (in the script, replace Dir = pathforexperiments by the PathForExperiments file containing the paths to all session files*)

⟶ Then, run *ParcourMakeSlowWavesOn2Channels.m* : to get the 8 types of slow waves, based on previously detected slow waves (idem)

2) To **remove noise from the sessions** : create a *NoiseHomeostasisLP.mat* file in the directory of each session to be analysed. The .mat file contains a *TotalNoiseEpoch* intervalset, with the intervals of noise in the data to be removed from the analyses.

⟶ load noise : *load StateEpochSB TotalNoiseEpoch*

⟶ add manually detected artefacts to TotalNoiseEpoch if needed

(TotalNoiseEpoch = or(TotalNoiseEpoch,artefact_is) ;)

⟶ save noise : *save NoiseHomeostasisLP TotalNoiseEpoch*

3) All **scripts and functions for the analyses** are listed and explained in the ***WikiCodeSlowWaves_LP.pdf*** file.

<u>In most cases :</u>

⟶ for plots on 1 session only : run *Quantif[…].m* scripts

⟶ for plots on all sessions and mean plots across sessions/mice : run *Parcour[…].m* script to extract data from all session (stored in /Data directory), and *Parcour[…]Plot.m* scripts to plot (saved in /Results directory).

Note : Parameters can often be changed/chosen in the preamble of scripts (ex. Whether mean plot across mice or across sessions in ParcourPlot scripts)

* Note : For the report results, PathForExperimentsSlowWavesLP.m with 15 sessions (6 mice) was used.

Organisation of the scripts in directories :

- DeltaSpectral : For SWA/bandpower homeostasis (+drafts, old and unused scripts for the study of delta waves and simple slow waves)

- SleepEvents : Scripts to make .mat files with slow waves (*/MakeSlowWaves*), All analyses on the 8 slow wave types (*/SlowWavesTypes* for the characteristics, and */Homeostasis* for homeostasis on SW density)