Report EEG

Thomas Monninger

# Data

print(raw.info)

    bads: []

    ch\_names: FP1, F3, F7, FC3, C3, C5, P3, P7, P9, PO7, PO3, O1, Oz, Pz, CPz, ...

    chs: 33 EEG

    custom\_ref\_applied: False

    highpass: 0.0 Hz

    line\_freq: 60

    lowpass: 512.0 Hz

    meas\_date: unspecified

    nchan: 33

    projs: []

    sfreq: 1024.0 Hz

    raw.to\_data\_frame().shape

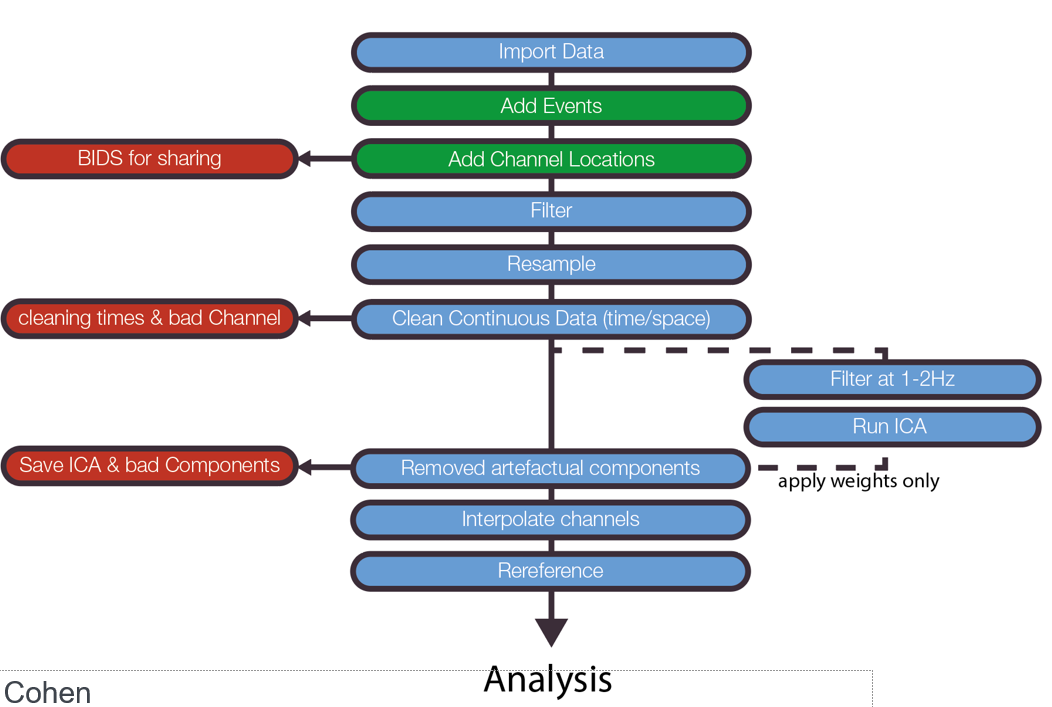
    (33, 683008)

## Event Coding

<https://osf.io/u8w69/>

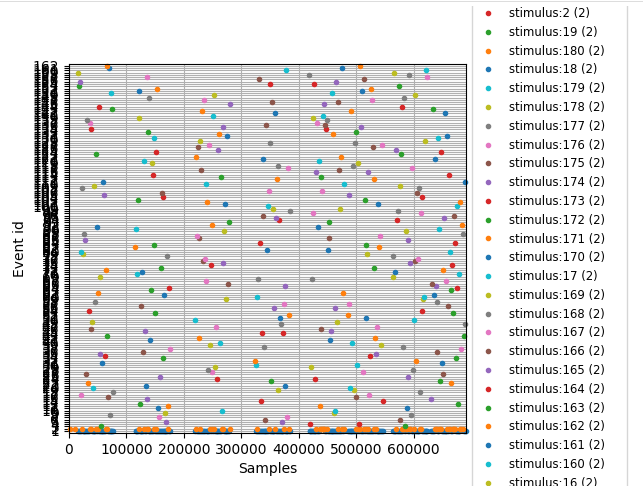
|  |  |
| --- | --- |
| Event | Code |
| Faces | 1-40 |
| Cars | 41-80 |
| Scrambled Faces | 101-140 |
| Scrambled Cars | 141-180 |
| Correct | 201 |
| Wrong | 202 |

# Preprocessing Pipeline

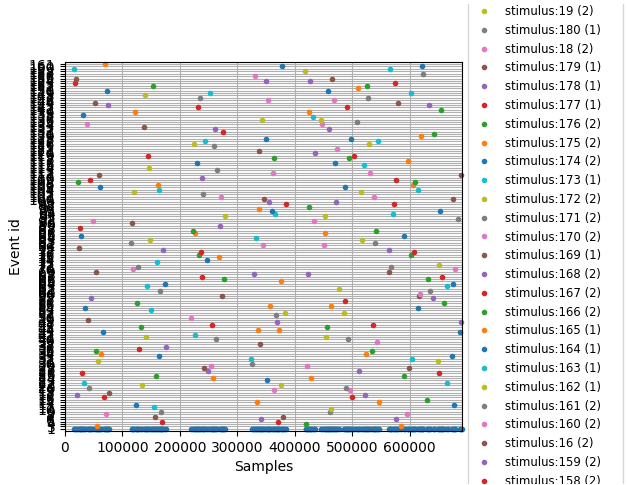


## Add events

Before removing trials with wrong response:



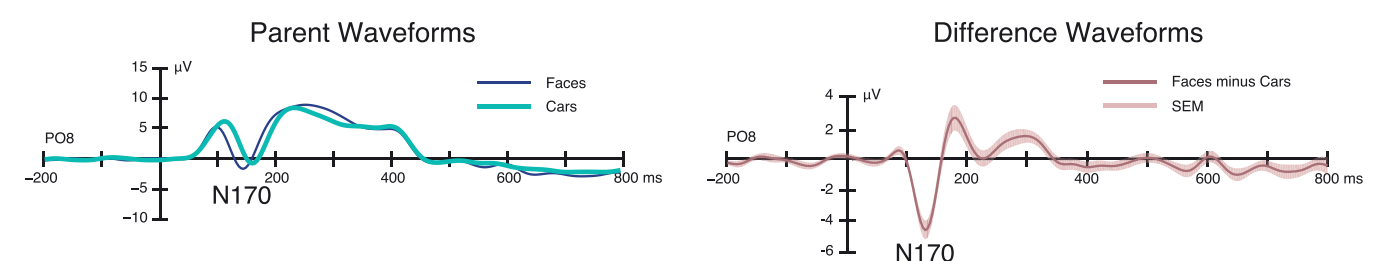
After removing trials with wrong response:



## ICA

FIR filter parameters

* Designing a one-pass, zero-phase, non-causal highpass filter:
* Windowed time-domain design (firwin) method
* Hamming window with 0.0194 passband ripple and 53 dB stopband attenuation
* Lower passband edge: 2.00
* Lower transition bandwidth: 2.00 Hz (-6 dB cutoff frequency: 1.00 Hz)
* Filter length: 1691 samples (1.651 sec)



# Analysis

## ERP Peak Analysis

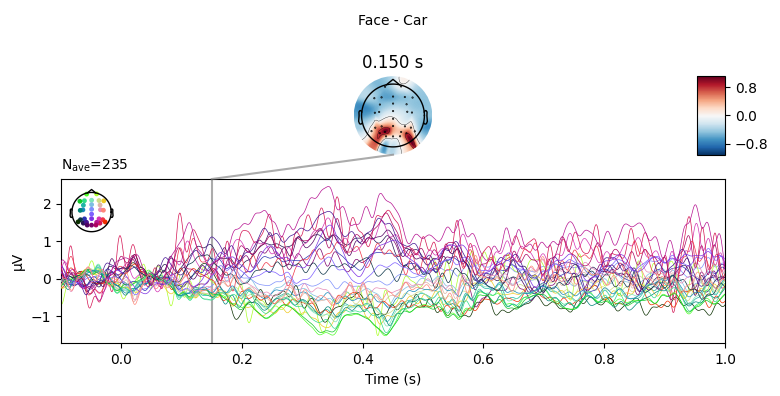
Extract the study-relevant ERP peak subjectwise (e.g. one value per subject) and statistically test them.

RQ: On which ERP-peaks do we find major difference between the conditions?

Channels, times, peaks for N170: --> Rossion 2008, ERP Core Paper

P7, PO7, P8, PO8; 130-200ms after stimulus onset

Before removing trials with wrong response:



After removing trials with wrong response:

