Clustering in Beta and Delta Bands during task engagement immediately after abrupt awakening

Last update - 22 07 20

Quick summary

Engagement in different tasks immediately after abrupt awakening uniquely impacts clustering in delta and beta bands

I. Delta band clustering
    A. PV task (original findings): **significant reductions** immediately after abrupt awakening
        1. observed only without blue light exposure
        2. But with exposure, the reduction is eliminated
    B. Math Task: **significant increases** immediately after abrupt awakening
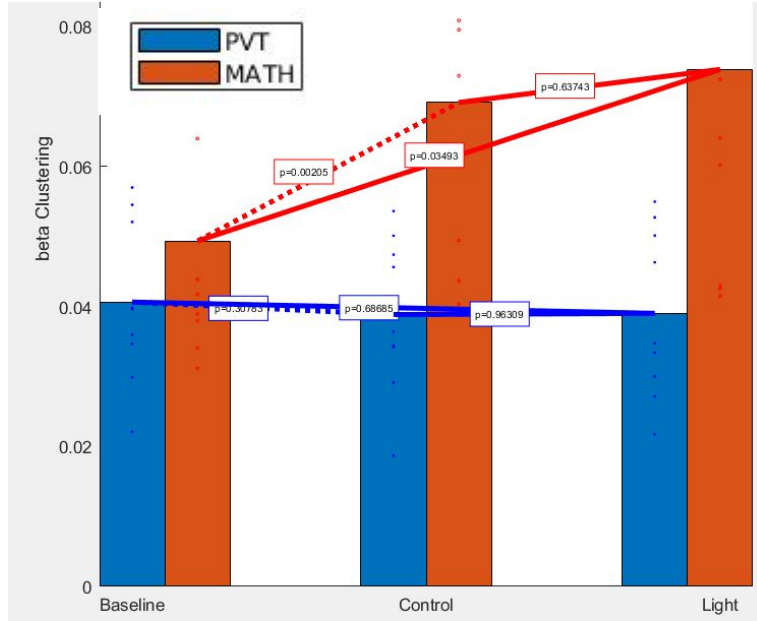   1. observed with and without blue light exposure

II. Beta Band Clustering
    A. PV task (original findings): totally **unaffected** by waking
        1. observed with and without blue light exposure
    B. Math Task: **significant increases**
        1. observed with and without blue light exposure

TLDR
- While engagement in Math task, clustering in BOTH the delta and beta band increase
- However, while engaging in PV task, only clustering in the delta band is impacted
- Blue Light exposure does nothing to modify these effects

1. Clustering in the **BETA** band immediately after (**T1**) abrupt awakening
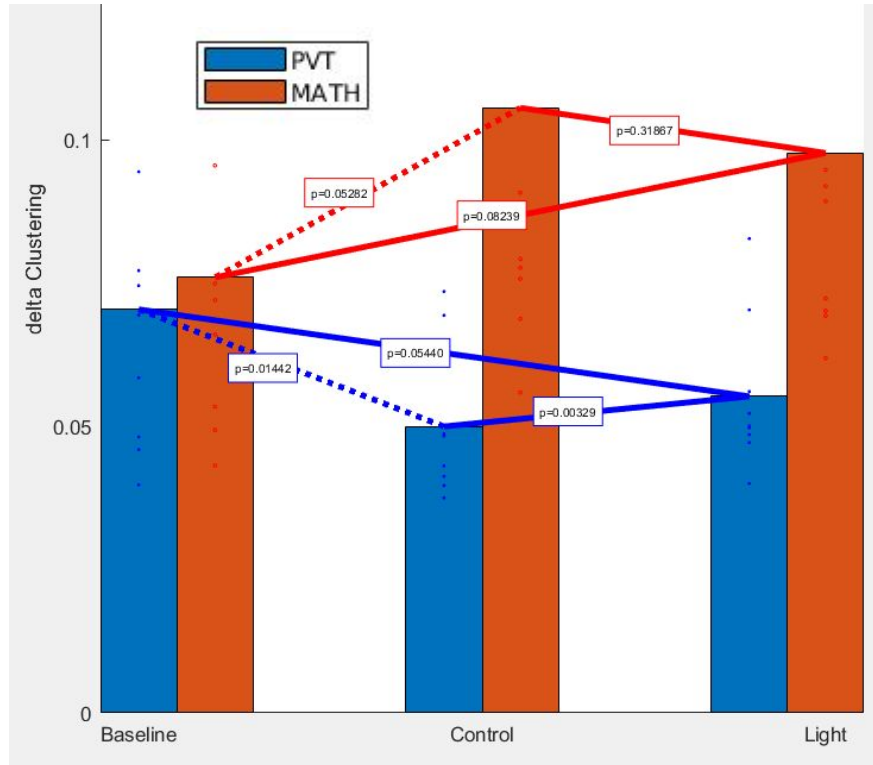

Engaging in the Math task immediately after abrupt awakening increases clustering in the beta Fs bands, but not while performing the PVT task (original results).

The same effects hold true when exposed to blue light. That is

- During Math, beta clustering increases to the same extent with and without blue light
- During PVT, beta clustering remains unaffected with and without blue light

2. Clustering in the **DELTA** band immediately after (**T1**) abrupt awakening
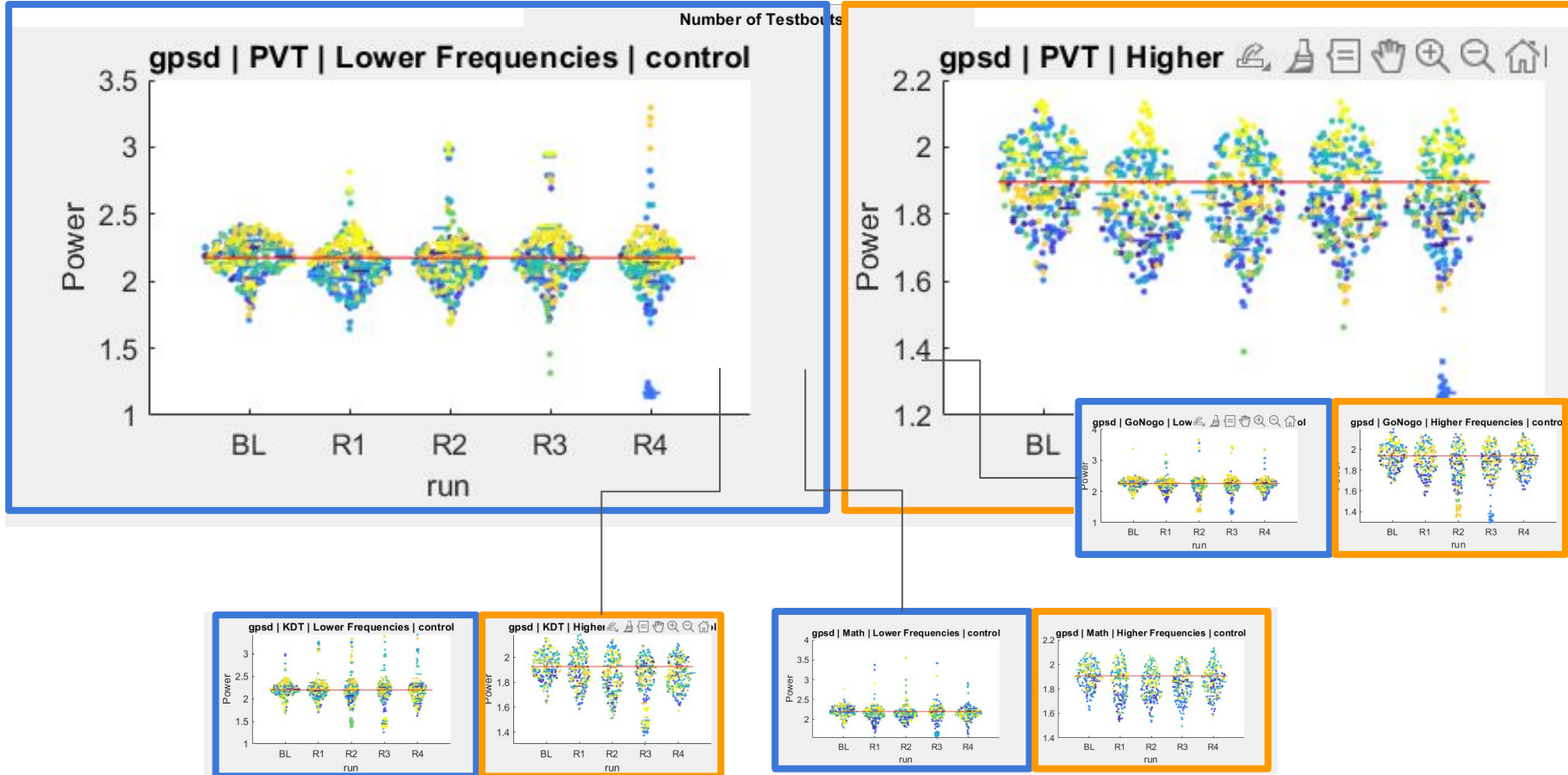

Engaging in the Math task after abrupt awakening increases clustering in the DELTA bands

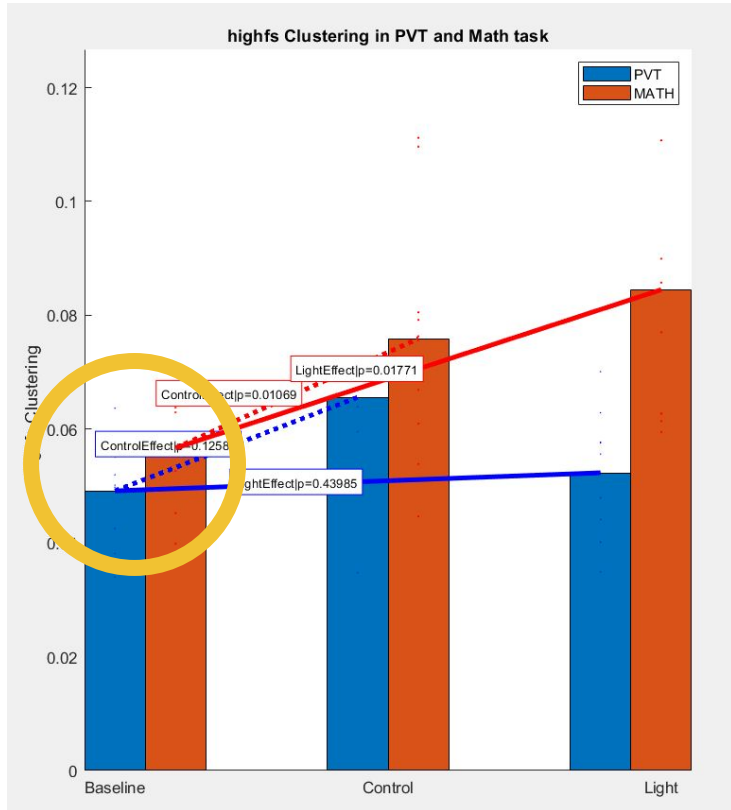In contrast, BETA clustering decreases after abrupt awakening.

Furthermore, this decrease in BETA clustering is eliminated with blue light exposure.

IGNORE SLIDES THAT FOLLOW

High frequency differences in global power between baseline and other test bouts are largely retained accross all cognitive tests.

Beta Band Clustering

highfs Clustering in PVT and Math task

Nice control

- Baseline levels are similar (good for control)