Sleep inertia findings for Nasa Presentation

Last update - 22 07 20

Hey Javi + Kanika! The newest figures are shown in slides 2 through 5

Section 1

Figure 1 Analysis with KDT, Math and GoNogo task

The next 3 slides show the same exact analysis as that used to generate figure 1 in the original paper, EXCEPT that the analysis is conducted for other cognitive tasks.

Excuse the low quality figures. You may have to zoom in to take a good look.
Once we finalize id love to clean them up

Global Power ~ Task + Frequency Band + Condition + Test Bout

All **Y-axes** correspond to Power

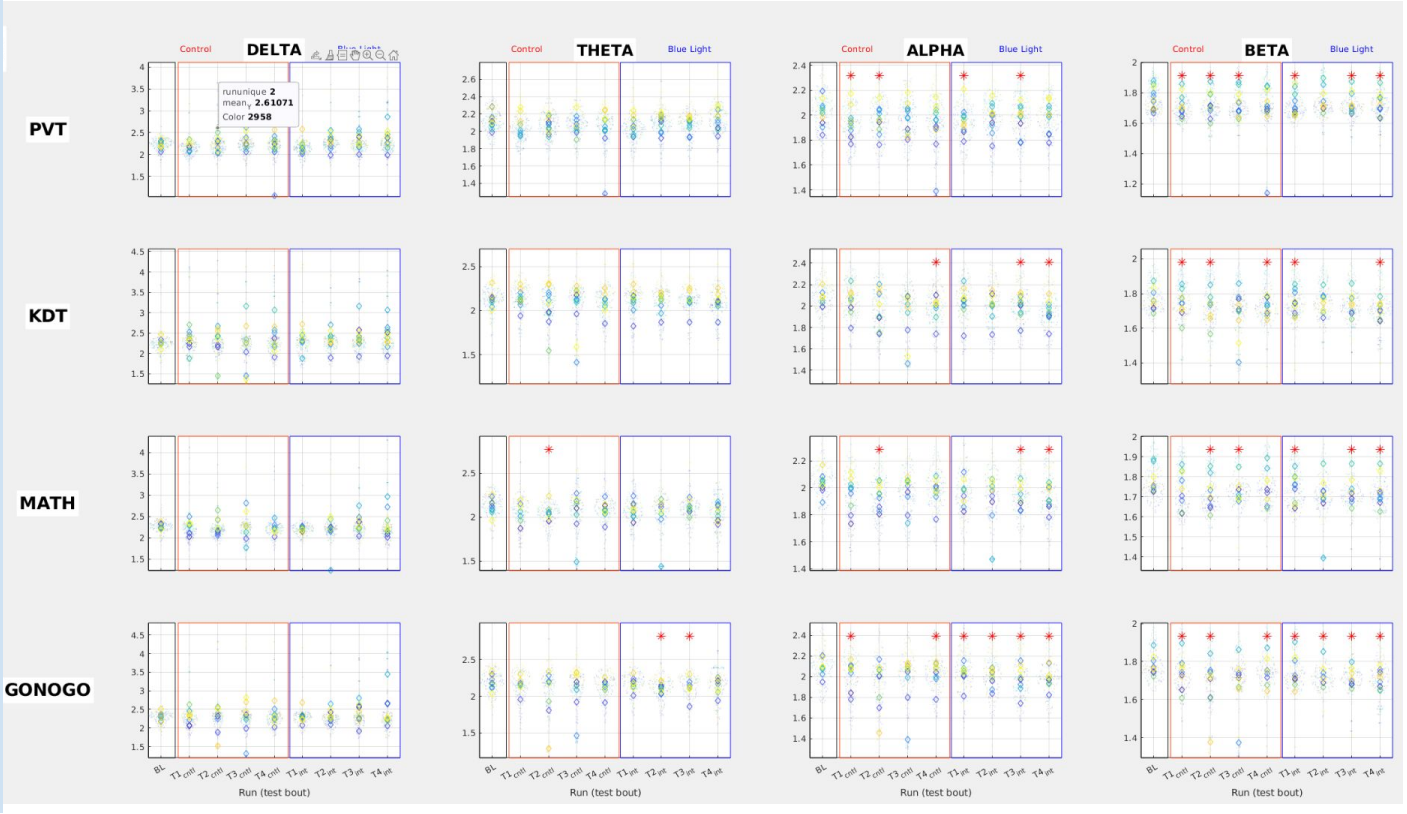
The **ith row** corresponds to the Power while engaging in the ith task

The **jth column** corresponds to the Power of the jth frequency band

The data clusters surrounded by a **black box** correspond to the Power at baseline.

The data clusters surrounded by a **red box** correspond to the Power during the control condition.

The data clusters surrounded by a **blue box** correspond to the Power during blue light exposure.



Stars are placed above those groups that are significantly different from baseline

Clustering ~ Task + Frequency Band + Condition + Test Bout

All **Y-axes** correspond to Clustering

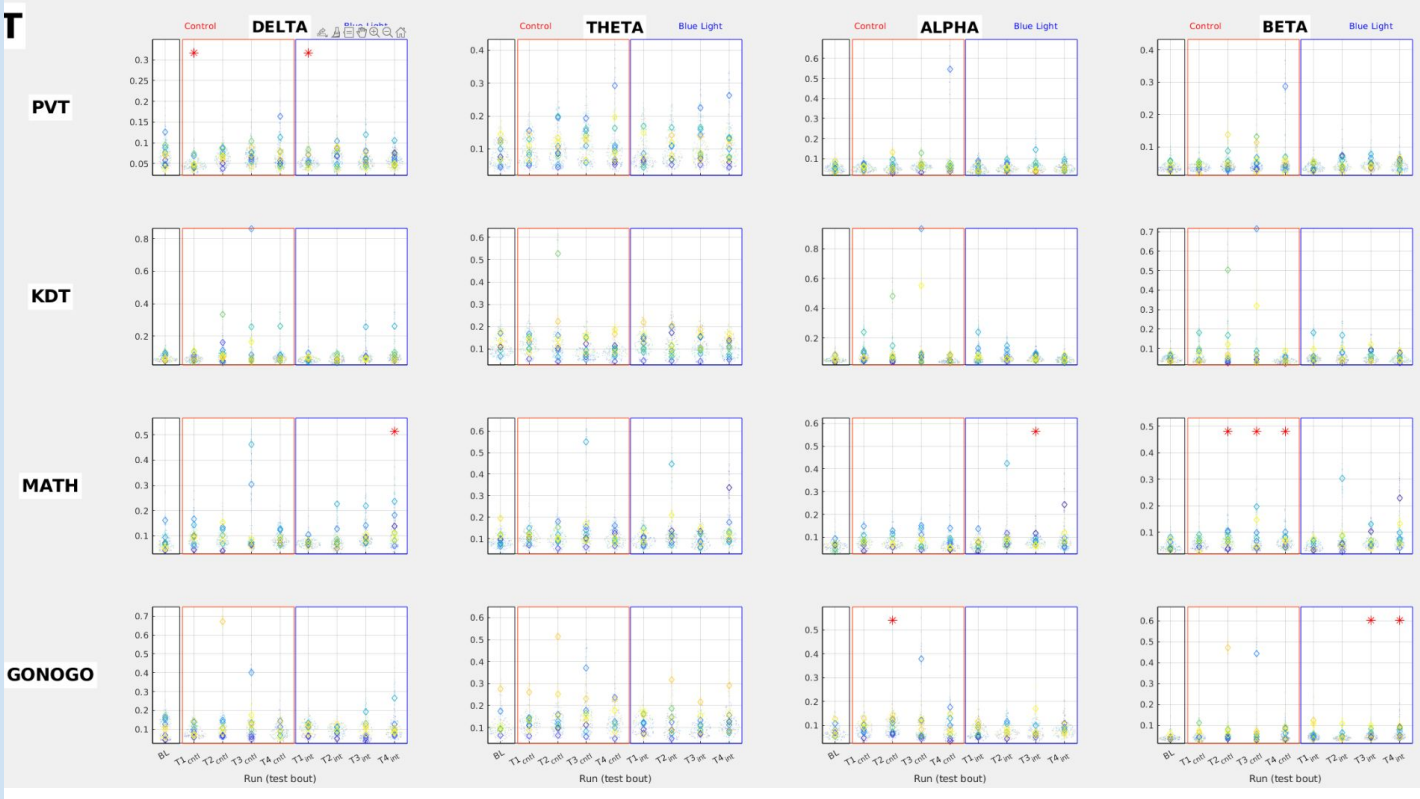
The **ith row** corresponds to the Clustering while engaging in the ith task

The **jth column** corresponds to the Clustering of the jth frequency band

The data clusters surrounded by a **black box** correspond to the Clustering at baseline.

The data clusters surrounded by a **red box** correspond to the Clustering during the control condition.

The data clusters surrounded by a **blue box** correspond to the Clustering during blue light exposure.



Stars are placed above those groups that are significantly different from baseline

Path Length ~ Task + Frequency Band + Condition + Test Bout

All **Y-axes** correspond to Path Length

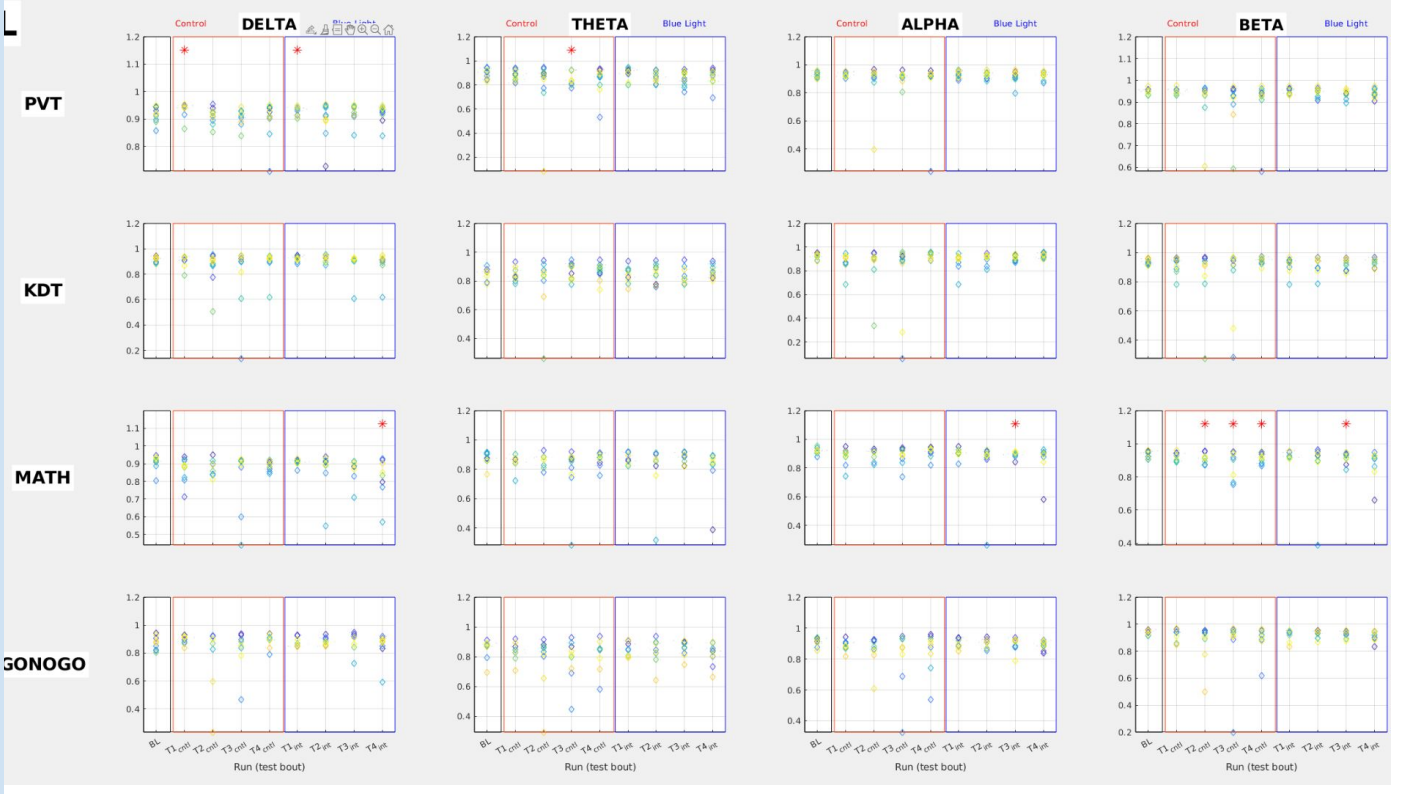
The **ith row** corresponds to the Path Length while engaging in the ith task

The **jth column** corresponds to the Path Length of the jth frequency band

The data clusters surrounded by a **black box** correspond to the Path Length at baseline.

The data clusters surrounded by a **red box** correspond to the Path Length during the control condition.

The data clusters surrounded by a **blue box** correspond to the Path Length during blue light exposure.



Stars are placed above those groups that are significantly different from baseline

Other Findings:

Clustering in Beta and Delta Bands while engaging various tasks immediately after abrupt awakening

Summary

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

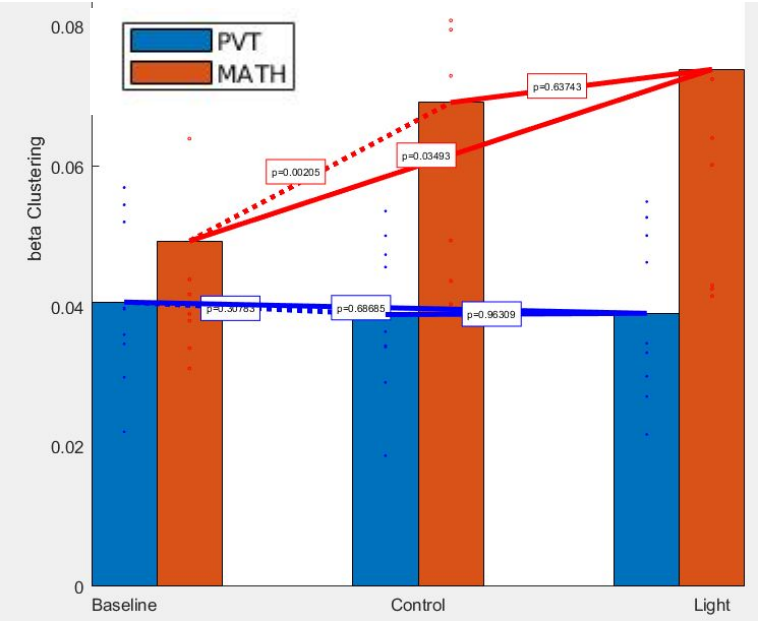
I. Delta band clustering
   A. PV task (original findings): **significant reductions** immediately after abrupt awakening
      1. observed only without blue light exposure
      2. But with exposure, the reduction is eliminated
   B. Math Task: **significant increases** immediately after abrupt awakening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

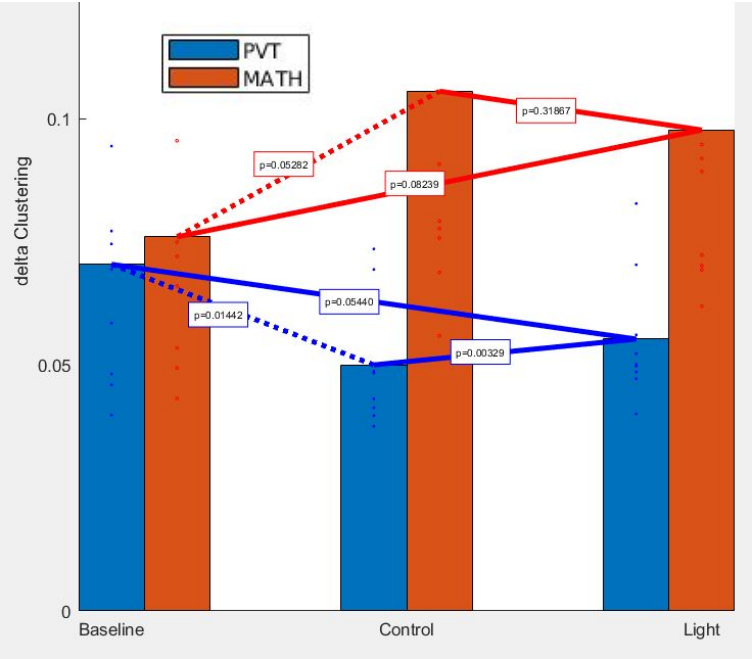


Engaging in the Math task immediately after abrupt awakening increases clustering in the beta Fs bands, but not while performing the PVT task (original results).

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 ALL SLIDES THAT FOLLOW THIS ONE

template

All **Y-axes** correspond to _____

The **ith row** corresponds to the _____ while engaging in the ith task

The **jth column** corresponds to the _____ of the jth frequency band

The data clusters surrounded by a **black box** correspond to the _____ at baseline.

The data clusters surrounded by a **red box** correspond to the _____ during the control condition.

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