SFB1315 SmartFigure Gallery

www.sfb1315-output.de
Julien Colomb (SFB1315, HU Berlin), Thomas Lemberger, Hannah Sonntag (EMBO)
About me

https://rdmpromotion.rbind.io
2018-19: eeFDM project, uni Jena
About me

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2018-19: eeFDM project, uni Jena

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Dr. Julien Colomb
Data curator, SFB1315
Result gallery project
Table of content

- Our Inspiration and motivation
- Goals of the project
- A demonstration of the tool
We made a new GPCR-rhodopsin fusion...
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Ah, great. We could use for live mouse brain imaging in our new behavioral test...

We can do in vivo test in flies easily...
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Sharing “results” across disciplines

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Ah, great. We could use for live mouse brain imaging in our new behavioral test...

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This includes “negative” results.
How to do that remotely and as soon as possible?
A figure is an intuitive medium to share results in the lab, at conferences, in papers.
A figure gallery
- SFB1315 gallery restricted: trusted network
- Open commenting
Drag & drop image. Done!
The network model comprises a population of pyramidal cells (P) and two groups of interneurons (PV+BCs and anti-SWR cells, B and A, respectively). Arrows ending with a triangle depict excitatory connections, arrows ending with a circle depict inhibitory connections. The connection from PV+BCs to anti-SWR cells includes a short-term synaptic depression mechanism.
A figure in context: add title +caption

A01: Simulating SWRs in a spiking network: network structure

The network model comprises a population of pyramidal cells (P) and two groups of interneurons (PV+BCs and anti-SWR cells, B and A, respectively). Arrows ending with a triangle depict excitatory connections, arrows ending with a circle depict inhibitory connections. The connection from PV+BCs to anti-SWR cells includes a short-term synaptic depression mechanism.

Probably not enough …
Prof. Awesome

Figure 4A
To: Hannab@superlab.com

Let's send the paper tonight. Where is the data for figure 4A? Need to attach it.
Prof. Awesome
Figure 4A
To: Hannab@superlab.com

Let’s send the paper tonight. Where is the data for figure. 4A? Need to attach it.

Think! Where did I put that file??

I am not impressed...
Your first collaborator is yourself in 2 years time

Prof. Awesome
Figure 4A
To: Hannab@superlab.com

Let's send the paper tonight. Where is the data for figure. 4A? Need to attach it.

Think! Where did I put that file??

I am not impressed...
Female mice tested twice at 3 or 7 months behave differently during home cage monitoring. We used 10 female wild type mice in this experiment and recorded their behavior for 24h while being single-housed in a normal home cage. They were filmed and their behaviour was analysed using the home cage scan software. The behaviour sequence was then analysed with our software. For each animal, we pooled the variables into 16 behavior categories and 2 time periods (light and dark periods) and got 36 variables per session. LEFT: We performed a PCA on the dataset and plotted the first principal component. A non-parametric test was then performed and we
Automatic paper drafts from SmartFigure (planned)

Material and methods

Data availability
Data can be obtained at https://doi.org/xxxxxxxxxxxxx, and https://doi.org/xxxxxxxxxxxxyy.

Animal care
...
Female mice tested twice at 3 or 7 months behave differently during home cage monitoring. We used 10 female wild type mice in this experiment and recorded their behavior for 22h while being single-housed in a normal home cage. They were filmed and their behaviour was analysed using the home cage scan software. The behaviour sequence was then analysed with our software. For each animal, we pooled the variables into 16 behaviour categories and 2 time periods (light and dark periods) and got 36 variables per session. LEFT: We performed a PCA on the dataset and plotted the first principal component. A non-parametric test was then performed and we
SmartFigure in scientific communication
Summary
Summary

- As soon as possible, remote collaboration in a trusted network!
Summary

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- Smart: linked information, publishers formatted, re-usable information, interoperable
Summary

- As soon as possible, remote collaboration in a trusted network!
- Smart: linked information, publishers formatted, re-usable information, interoperable
- Looking at incentives and narratives: sfb1315-output.de
Result of the month: 2019-11: A07-A08

Network-Specific Synchronization of Electrical Slow-Wave Oscillations Regulates Sleep Drive in Drosophila

Slow-wave rhythms characteristic of deep sleep can be found across various brain regions in vertebrates. Here, we discover compound delta oscillations in the sleep-regulating R5 network of Drosophila. We find that the power of these slow-wave oscillations increases with sleep need. Optical multi-unit voltage recordings reveal that single R5 neurons get synchronized by activating circadian input pathways. We show that this synchronization depends on NMDA receptor (NMDAR)-coincidence detector function. Genetically targeting the coincidence detector function of NMDARs in R5 abolishes network-specific compound slow-wave oscillations. It also disrupted sleep and facilitated light-induced waking, establishing a role for slow-wave oscillations in regulating sleep and sensory gating. We therefore propose that the synchronization-based increase in oscillatory power likely represents an evolutionarily conserved, potentially “optimal,” strategy for constructing sleep-regulating sensory gates.

Open access publication: https://doi.org/10.1016/j.cub.2019.08.070
The future

- The data itself on GIN?
- open source
- API

But limited resources (½ developer at emboss)
Thank you

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