

CODECHECK certificate 2020-014

<https://doi.org/10.5281/zenodo.3967326>






Item	Value
Title	Patterned perturbation of inhibition can reveal the dynamical structure of neural processing
Authors	Sadra Sadeh  , Claudia Clopath 
Reference	eLife (2020) 9:e52757 https://elifesciences.org/articles/52757
Codechecker	Iain Davies 
Date of check	2020-07-28 10:00:00
Summary	Some of the original MATLAB code was provided on ModelDB. This code was successfully rerun and reproduced some of the figures in the original paper. However this was a small subset of all the figures in the paper.
Repository	https://github.com/codecheckers/Sadeh-and-Clopath

Table 1: CODECHECK summary

Output	Comment	Size (b)
codecheck/figures/GeneralActivity_SpecPert__1.png	manuscript Figure 2A Bottom	48720
codecheck/figures/SpecActivity_SpecPert__1.png	manuscript Figure 2B Bottom	74396
codecheck/figures/PertChange_SpecPert__1.png	manuscript Figure 2C Bottom	46899
codecheck/figures/SpikingActivity.png	manuscript Figure 5A	138512
codecheck/figures/SpikingNet_SpecActivity_SpecPert__inh.png	manuscript Figure 5B Right	89691
codecheck/figures/SpikingNet_PertChange_SpecPert.png	manuscript Figure 5C	60024

Table 2: Summary of output files generated

Summary

The original authors provided code to reproduce six figures which was done straightforwardly. However this was a small subset of the total figures in the paper so this is only a partially successful codecheck.

CODECHECKER notes

The original author provided some of the original MATLAB code on ModelDB here: <https://senselab.med.yale.edu/ModelDB/showmodel.cshtml?model=259620#tabs-1>. I downloaded the zip file, unzipped it then ran the MATLAB code in a MATLAB console in the way described in the README. The code took a total of around 30 seconds on a DAMTP workstation, and produced 6 figures that were automatically saved into the root directory. I then saved these into the codecheck/figures folder. These figures reproduced extremely well 6 figures that were in the original paper. However, given there are over 100 figures in the paper this was a relatively small subset of the total figures.

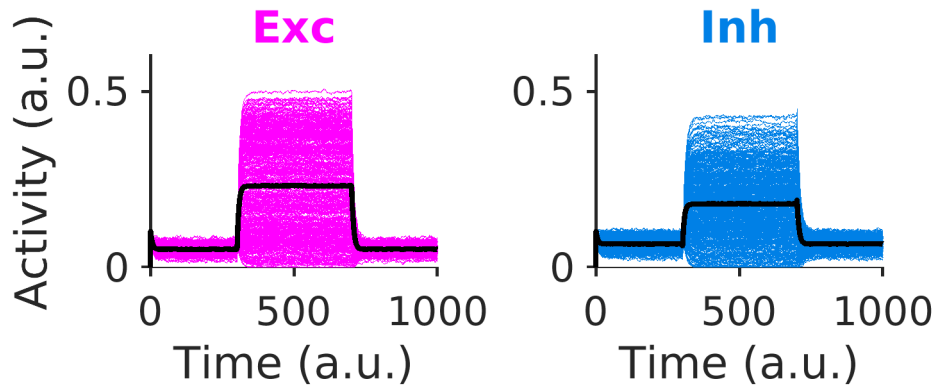


Figure C1: manuscript Figure 2A Bottom

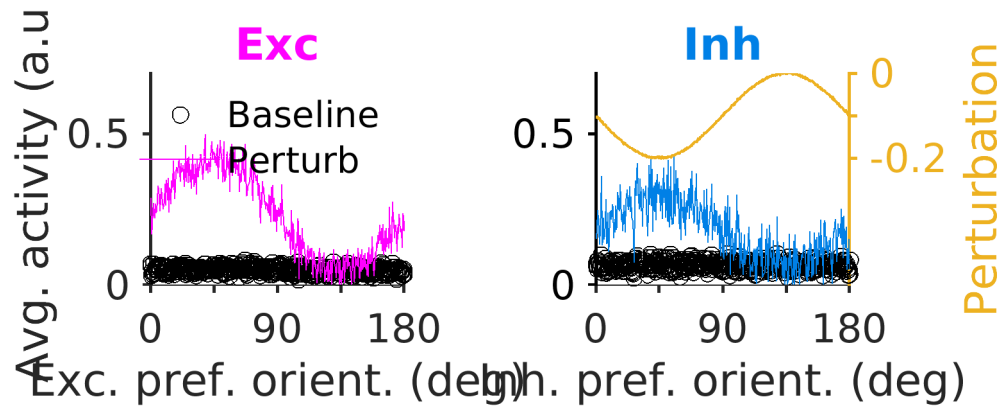


Figure C2: manuscript Figure 2B Bottom

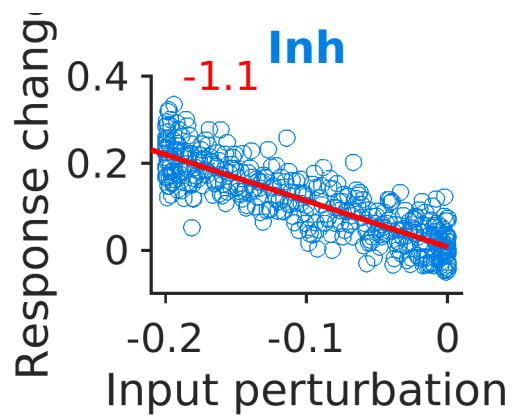


Figure C3: manuscript Figure 2C Bottom

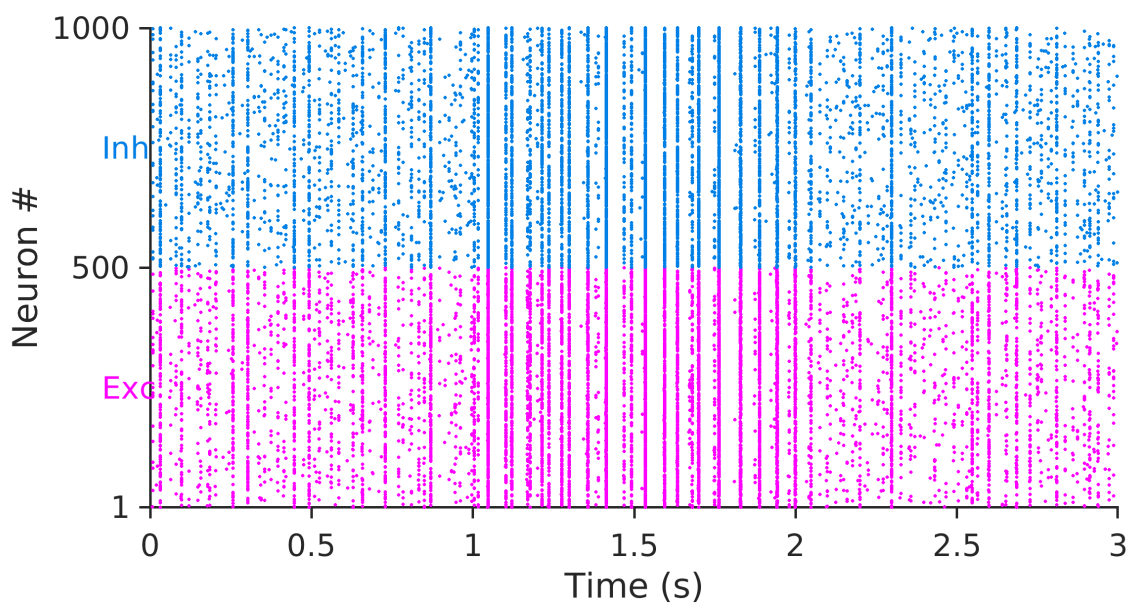


Figure C4: manuscript Figure 5A

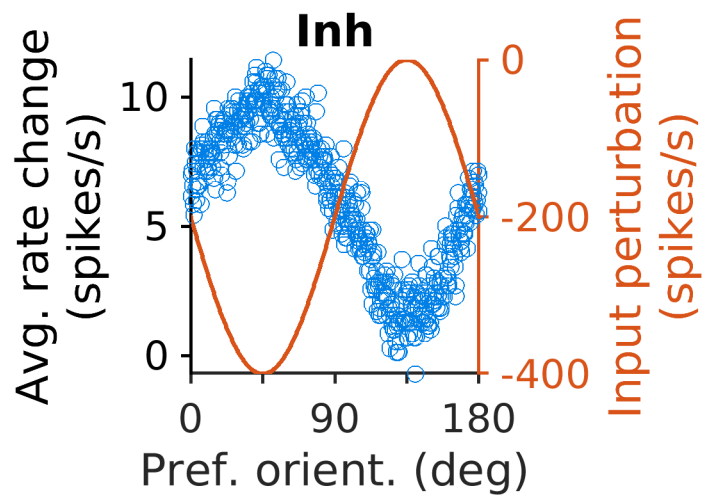


Figure C5: manuscript Figure 5B Right

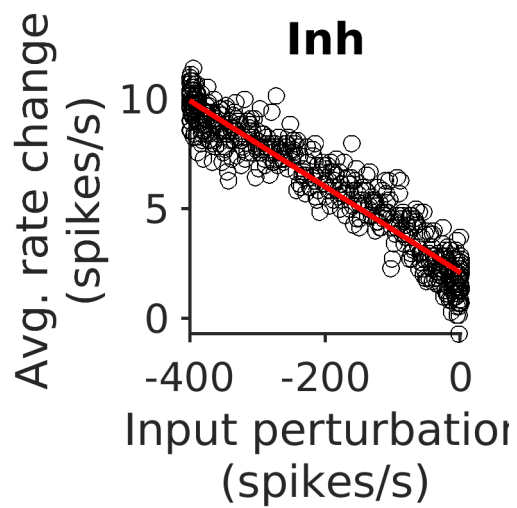


Figure C6: manuscript Figure 5C

Acknowledgements

I would like to thank Dr Bhatt and his team for promptly answering any queries I had with this reproduction. CODECHECK is financially supported by the Mozilla foundation.

Citing this document

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About CODECHECK

This certificate confirms that the codechecker could independently reproduce the results of a computational analysis given the data and code from a third party. A CODECHECK does not check whether the original computation analysis is correct. However, as all materials required for the reproduction are freely available by following the links in this document, the reader can then study for themselves the code and data.

About this document

This document was created using [R Markdown](#) using the `codecheck` R package. `make codecheck.pdf` will regenerate the report file.

```
sessionInfo()
```

```
## R version 3.6.3 (2020-02-29)
## Platform: x86_64-pc-linux-gnu (64-bit)
## Running under: Ubuntu 16.04.5 LTS
##
## Matrix products: default
## BLAS: /usr/lib/openblas-base/libblas.so.3
## LAPACK: /usr/lib/libopenblas-r0.2.18.so
##
## locale:
## [1] LC_CTYPE=en_GB.UTF-8 LC_NUMERIC=C
## [3] LC_TIME=en_GB.UTF-8 LC_COLLATE=en_GB.UTF-8
## [5] LC_MONETARY=en_GB.UTF-8 LC_MESSAGES=en_GB.UTF-8
## [7] LC_PAPER=en_GB.UTF-8 LC_NAME=C
## [9] LC_ADDRESS=C LC_TELEPHONE=C
## [11] LC_MEASUREMENT=en_GB.UTF-8 LC_IDENTIFICATION=C
##
## attached base packages:
## [1] stats graphics grDevices utils datasets
## [6] methods base
##
## other attached packages:
## [1] readr_1.3.1 tibble_3.0.3
## [3] xtable_1.8-4 yaml_2.2.1
## [5] rprojroot_1.3-2 knitr_1.29
## [7] codecheck_0.0.0.9005 parsedate_1.2.0
## [9] R.cache_0.14.0 gh_1.1.0
```

```
##
## loaded via a namespace (and not attached):
## [1] Rcpp_1.0.1      magrittr_1.5      hms_0.4.2
## [4] R6_2.4.1        rlang_0.4.7      fansi_0.4.1
## [7] highr_0.8       stringr_1.4.0    httr_1.4.2
## [10] tools_3.6.3     xfun_0.15        R.oo_1.23.0
## [13] cli_2.0.2       ellipsis_0.3.1   htmltools_0.5.0
## [16] assertthat_0.2.1 digest_0.6.25     lifecycle_0.2.0
## [19] crayon_1.3.4    vctrs_0.3.2      R.utils_2.9.2
## [22] glue_1.4.1      evaluate_0.14     rmarkdown_2.3
## [25] stringi_1.4.6   pillar_1.4.6     compiler_3.6.3
## [28] backports_1.1.4 R.methodsS3_1.8.0 jsonlite_1.7.0
## [31] pkgconfig_2.0.3
```