CODECHECK certificate 2020-013

Item	Value
Title	Rest-activity cycles and melatonin phase angle of circadian entrainment in people without cone-mediated vision
Authors	Manuel Spitschan, Corrado Garbazza, Susanne Kohl, Christian Cajochen
Reference	bioRxiv (2020) https://www.biorxiv.org/content/10.1101/2020.06.02.129502v1
Codechecker	Iain Davies
Date of check	2020-07-14 16:00:00
Summary	This reproduction successfully reproduced all figures output by the original code. All original MATLAB code was provided and the reproduction had a small compute time.
Repository	https://github.com/codecheckers/Spitschan2020_bioRxiv

Table 1: CODECHECK summary

Output	Comment	Size (b)
`figures/raw/Fig1.pdf`	manuscript Figure 1 (panel D only)	17962
`figures/raw/Fig2.pdf`	manuscript Figure 2	54789
`figures/raw/Fig3.pdf`	manuscript Figure 3	12984
`figures/raw/Fig6.pdf`	manuscript Figure 5	6491
`figures/raw/Fig5.pdf`	manuscript Figure 6	23842
`figures/raw/Fig7.pdf`	manuscript Figure 7	47682

Table 2: Summary of output files generated

Summary

This code was straightforward to check. All original code was provided and figures were reproduced with most features the same as in the original paper.

CODECHECKER notes

The original code was provided in the GitHub repo here: https://github.com/spitschan/Spitschan2020_bioRxiv. Code was written in MATLAB and instructions to run were clearly given in the README. I cloned the repo, removed the figures in the figures folder and then ran the s_runAllCode.m script in a MATLAB console. The reproduced figures were automatically saved into the figures folder. The script took 2 minutes to run on a department workstation. The figures were largely reproduced as in the original paper. Figure 2 reproduced panel D only, however as panel B differs only from panel D in the colours used, this didn't reduce the results reproduced. Other reproduced figures were missing labels and legends present in the paper, and Figure C5 (manuscript Figure 6) had the coloured bars above rather than below the graphs. However, data in the figures was reproduced as expected.

License information

The code required some matlab toolboxes. I ran the following after running their scripts to identify the licenses:

```
>> license('inuse')
curve_fitting_toolbox
matlab
signal_toolbox
statistics_toolbox
```

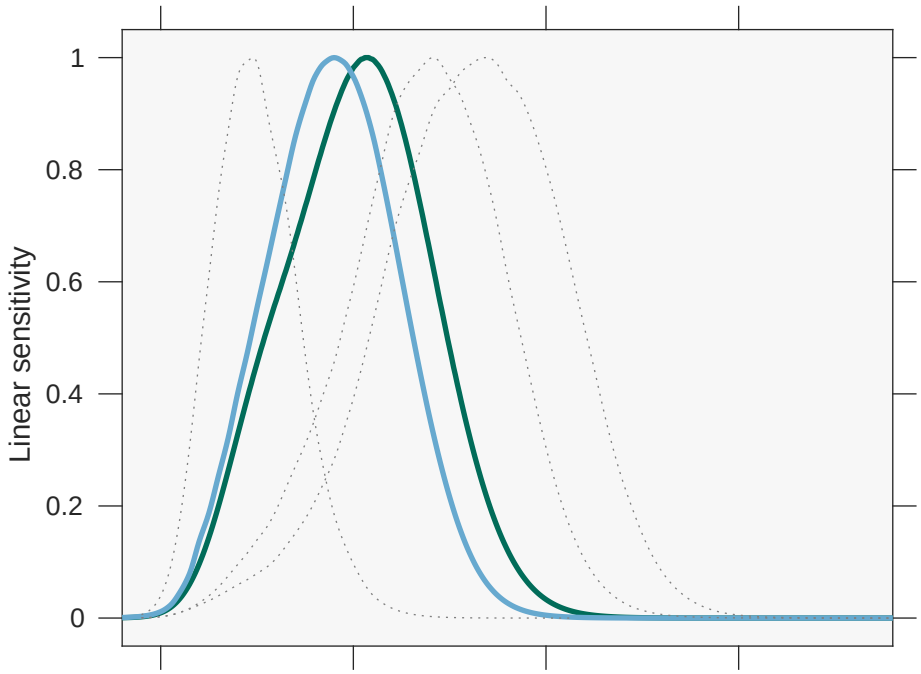

Figure C1: manuscript Figure 1 (panel D only)

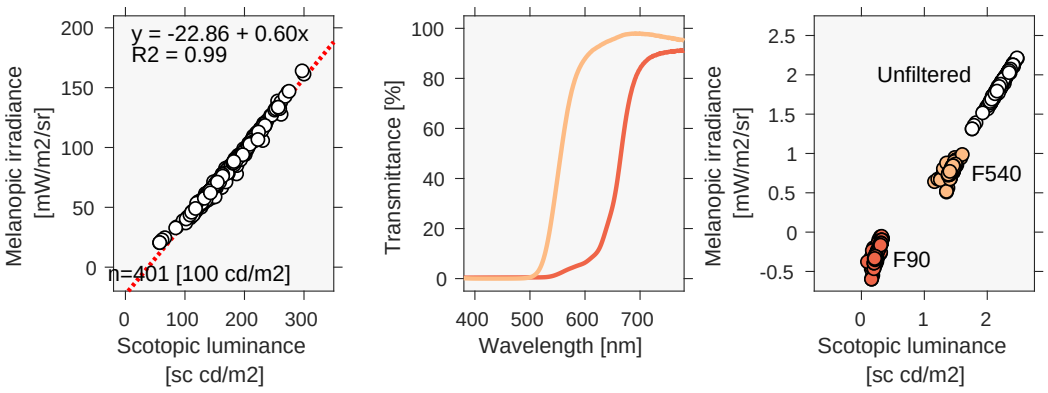

Figure C2: manuscript Figure 2

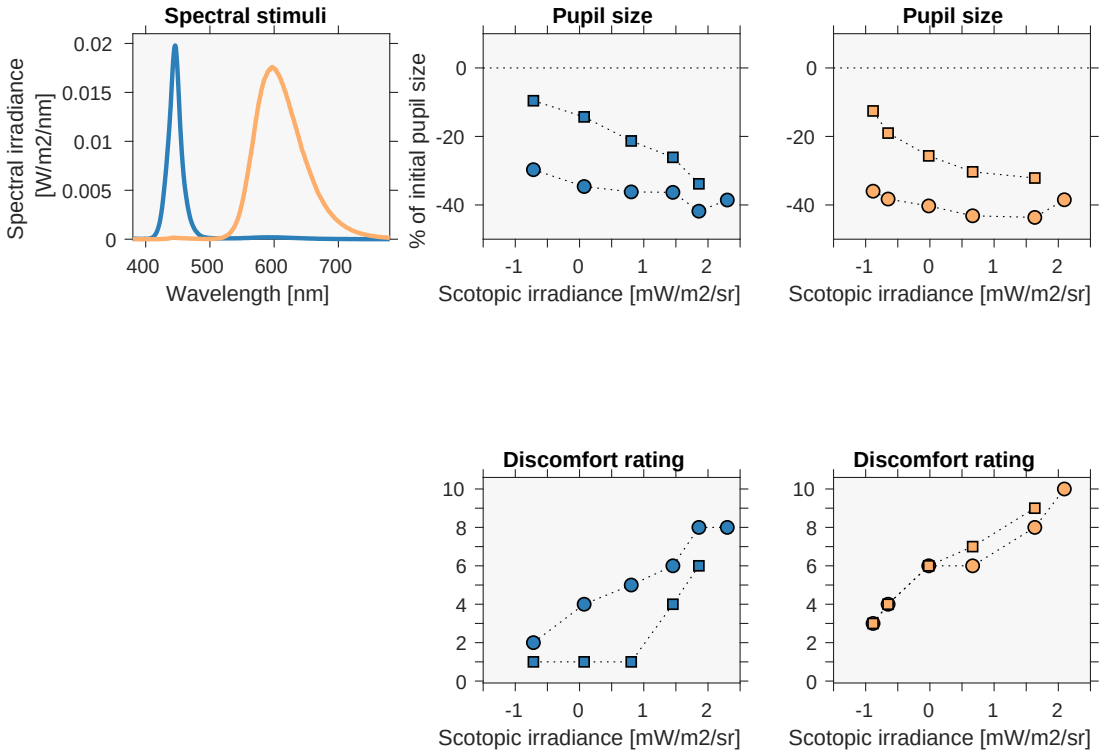

Figure C3: manuscript Figure 3

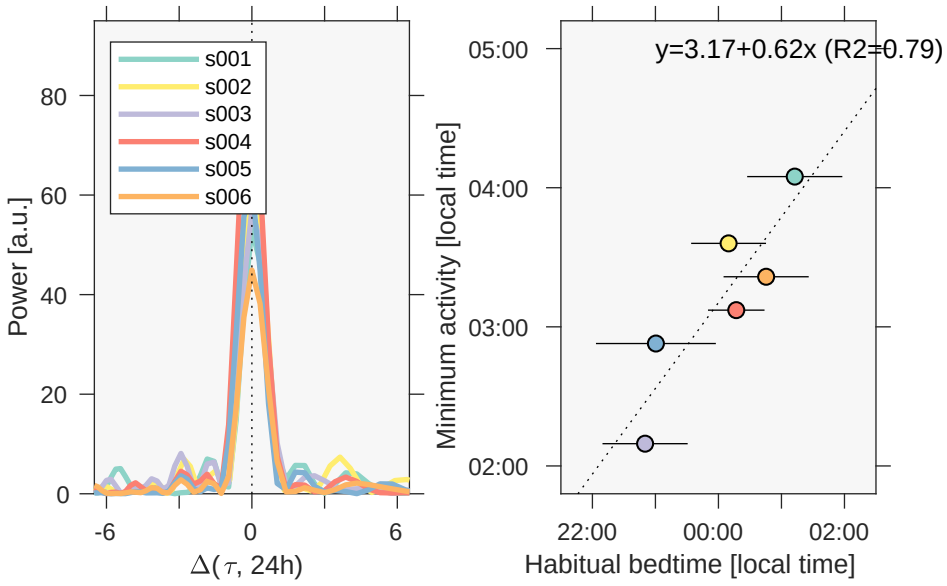

Figure C4: manuscript Figure 5

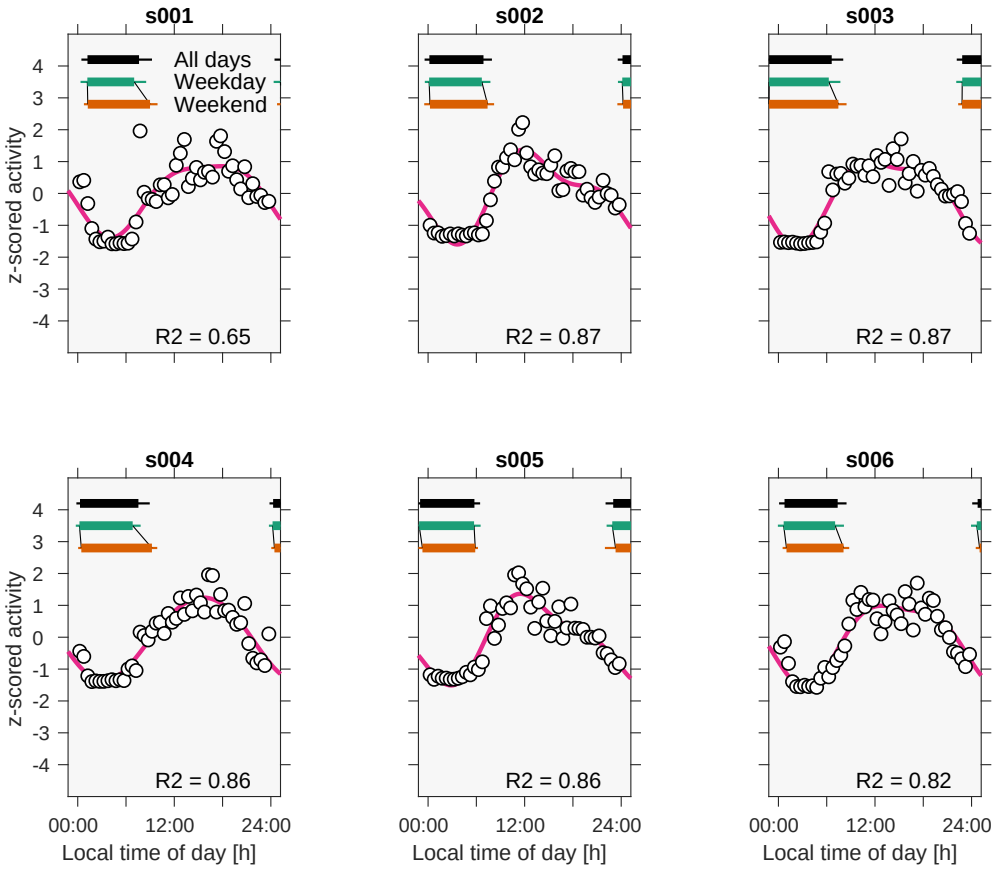

Figure C5: manuscript Figure 6

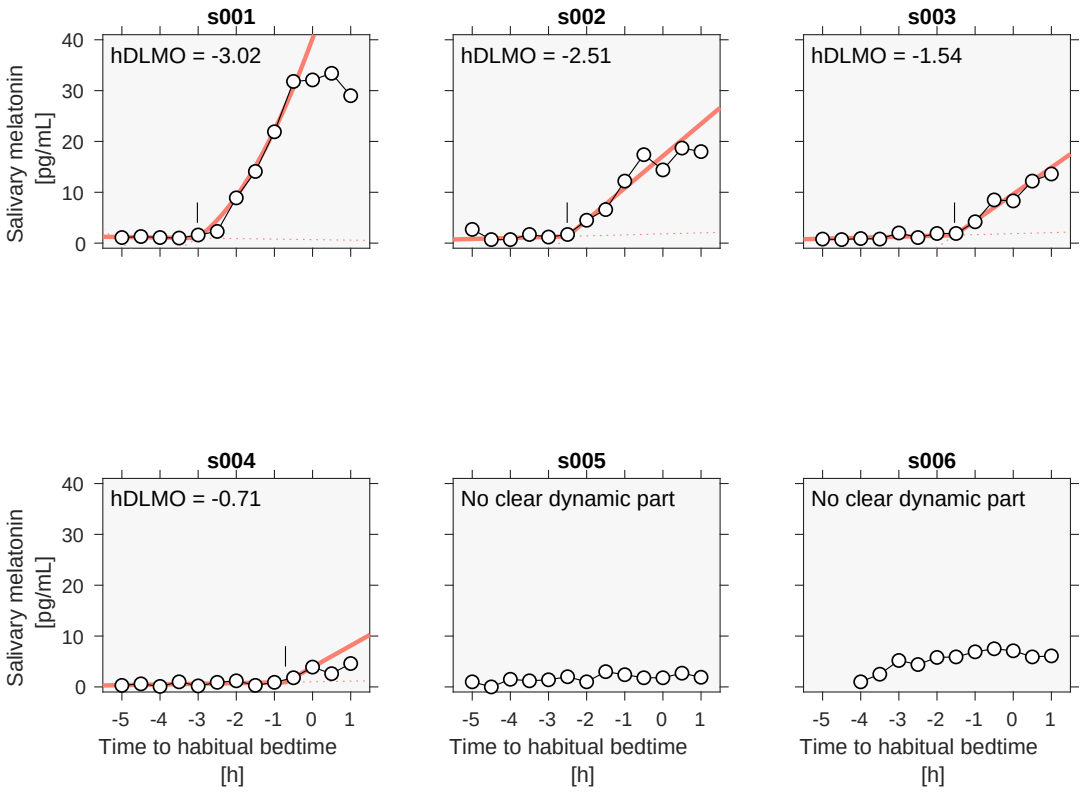

Figure C6: manuscript Figure 7

Acknowledgements

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Citing this document

Iain Davies (2020). CODECHECK Certificate 2020-013. Zenodo. https://doi.org/10.5281/zenodo.3947959

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/libopenblasp-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_3.0.2
##  [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_0.4.6       fansi_0.4.1
##  [7] highr_0.8         stringr_1.4.0     httr_1.4.1
## [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_0.3.1       R.utils_2.9.2
## [22] glue_1.4.1        evaluate_0.14     rmarkdown_2.3
## [25] stringi_1.4.6     pillar_1.4.4      compiler_3.6.3
## [28] backports_1.1.4   R.methodsS3_1.8.0 jsonlite_1.7.0
## [31] pkgconfig_2.0.3
```