GENERAL COMMENT

The codes included in this folder are not yet sufficiently organized or well documented for readers to run the codes effortlessly. I will take care of further organizing and documenting the codes shortly.

SYSTEM REQUIREMENTS

- Software dependencies:

MATLAB (MathWorks) version r2021b

Open-source Matlab codes:

UMAP version 1.3.4: https: //se.mathworks.com/matlabcentral/fileexchange/71902-uniform-manifold-approximation-and-projection-umap

Toolbox for Dimensionality Reduction, available in: https://lvdmaaten.github.io/drtoolbox/

Circular Statistics Toolbox version 1.21.0.0: <https://se.mathworks.com/matlabcentral/fileexchange/10676-circular-statistics-toolbox-directional-statistics>

- Operating System

OS: Windows 10 Education version 22H2

- The codes have also been tested on MATLAB version r2019b

- The codes were developed using this hardware:

Processor: Intel(R) Core(TM) i7-7700 CPU @ 3.60GHz 3.60 GHz

RAM: 32.0 GB

No other specific or non-standard hardware is required.

INSTALLATION GUIDE

- All codes can be downloaded and used right away

- Installation time is 5 minutes depending on computer specifications

DEMO

- Instructions: The code for running the demo is named ‘Main\_sequences\_Fig2\_example\_session’ and can be found in ‘Selection of codes’. The example session is provided in the same folder.

- Expected output: Figures with stacked autocorrelations, 2 example cells (Fig 1b,c), and rasterplots using different sorting methods (Fig 2a,b – Extended data Figure 4d).

- Expected time to run demo on desktop computer: 5 minutes (the last cell is the most time consuming one, as it runs the dimensionality reduction methods and makes the rasterplots).

INSTRUCTIONS FOR USE

- How to run the software: The codes in the folder ‘Selected codes’ can be run in order, cell by cell. Typically the first cells load the data and perform all quantifications, and the last cells make the figures included in the paper. Each of these codes (except for the demo, see above) indicate, at the beginning, which of the paper figures they output.

- All other codes are included in the folder ‘All codes’. Those codes are not sufficiently well structured yet. All codes needed for reproducing the results of the paper are included in the folder ‘All codes’.

FURTHER COMMENTS

- The nomenclature of the codes does not reflect the one used in the paper. For example, where the codes say ‘waves’, the paper says ‘sequences’.

- The codes also make reference to sessions that were not part of the final dataset, and include analyses and figures that are not part of the paper.