Author Contributions Checklist Form

This form documents the artifacts associated with the article (i.e., the data and code supporting the computational findings) and describes how to reproduce the findings.

# Part 1: Data

[ ]  This paper **does not** involve analysis of external data (i.e., no data are used or the only data are generated by the authors via simulation in their code).

[ ]  I certify that the author(s) of the manuscript have legitimate access to and permission to use the data used in this manuscript.

## Abstract

## Availability

[ ]  Data **are** publicly available

[ ]  Data **cannot be made** publicly available

If the data are publicly available, see the *Publicly available data* section. Otherwise, see the *Non-publicly available dat*a section, below.

### Publicly available data

[ ]  Data are available online at:

[ ]  Data are available as part of the paper’s supplementary material.

[ ]  Data are publicly available by request, following the process described here:

[ ]  Data are or will be made available through some other mechanism, described here:

### Non-publicly available data

Discussion of lack of publicly available data:

## Description

### File format(s)

[ ]  CSV or other plain text:

[ ]  Software-specific binary format (.Rda, Python pickle, etc.):

[ ]  Standardized binary format (e.g., netCDF, HDF5, etc.):

[ ]  Other (described here):

### Data dictionary

[ ]  Provided by the authors in the following file(s):

[ ]  Data file(s) is (are) self-describiing (e.g., netCDF files)

[ ]  Available at the following URL:

### Additional information (optional)

# Part 2: Code

## Abstract

## Description

### Code format(s)

[ ]  Script files

 [ ]  R [ ]  Python [ ]  Matlab

 [ ]  Other:

[ ]  Package

 [ ]  R [ ]  Python [ ]  MATLAB toolbox

 [ ]  Other:

[ ]  Reproducible report

 [ ]  R Markdown [ ]  Jupyter notebook

 [ ]  Other:

[ ]  Shell script

[ ]  Other (described here):

### **Supporting software requirements**

Version of primary software used

Libraries and dependencies used by the code

### Supporting system/hardware requirements (optional)

### Parallelization used

[ ]  No parallel code used

[ ]  Multi-core parallelization on a single machine/node

 Number of cores used:

[ ]  Multi-machine/multi-node parallelization

 Number of nodes and cores used:

### License

[ ]  MIT License (default)

[ ]  BSD

[ ]  GPL v3.0

[ ]  Creative Commons

[ ]  Other (described here):

### Additional information (optional)

# Part 3: Reproducibility workflow

## Scope

The provided workflow reproduces:

[ ]  Any numbers provided in text in the paper

[ ]  The computational method(s) presented in the paper (i.e., code is provided that implements the method(s))

[ ]  All tables and figures in the paper

[ ]  Selected tables and figures in the paper, as explained and justified here:

## Workflow details

### Location

The workflow is available:

[ ]  As part of the paper’s supplementary material

[ ]  In this Git repository:

[ ]  Other:

### Format(s)

[ ]  Single master code file

[ ]  Wrapper (shell) script(s)

[ ]  Self-contained R Markdown file, Jupyter notebook, or other literate programming approach

[ ]  Text file (e.g., a readme-style file) that documents workflow

[ ]  Makefile

[ ]  Other (more detail in 'Instructions' below)

### Instructions

Expected run-time

Approximate time needed to reproduce the analyses on a standard desktop machine:

[ ]  <1 minute

[ ]  1-10 minutes

[ ]  10-60 minutes

[ ]  1-8 hours

[ ]  >8 hours

[ ]  Not feasible to run on a desktop machine, as described here:

### Additional documentation (optional)

# Notes (optional)