**Note to the reader:** this package has been anonymized for the purpose of the review process.

**1. Introduction**

Once the Supporting Information 5 has been uncompressed, you can run the pipeline to produce post-analyses from simulation results (available in the folder 1\_simulation\_results).

The six bash scripts necessary to fully reproduce the analysis are labeled from A to F, and must be executed in this order. The post-analyses files are already available in this package. **Be aware that re-running the full pipeline will erase the files and will take several hours**. You can skip the first steps and jump directly to the section 6: generating the figures of the manuscript.

Before taking the next steps, navigate to the folder SupportingInformation5 using the command cd in your terminal.

**2. Supported platforms and dependencies**

The software has been successfully tested on Unix/Linux and macOS platforms.

**• Dependencies**

* A C++ compiler (GCC, LLVM, ...),
* CMake (command line version),
* GSL for C/C++,
* CBLAS for C/C++,
* Python ≥ 3 (Packages CMA-ES and numpy are required),
* R (packages ggplot2, cowplot, ggpubr and sf are required).

**3. Compile the simulation executable**

To compile the executable, navigate to the folder cmake, and run the following command line in a terminal:

bash make\_release.sh

**4. Run the validation of the CMA-ES outputs**

To compute the log-likelihood distribution of the parameters sets found by the optimization algorithm (100 repetitions, see Main Document), run the following command line in a terminal:

bash A\_run\_validation.sh

Resulting files will be saved in the folder 2\_cmaes\_validation. This script will take several hours.

**5. Find and run the best parameters set of each scenario**

The next script finds the best parameters set of each model by comparing the average log-likelihoods and selecting the lowest one (see Main Document). The script then run a simulation with N=1,000 repetitions. Run the following command line in a terminal:

bash B\_run\_best\_models.sh

Resulting files will be saved in the folder 3\_best\_models.

**6. Compute performance metrics distributions**

To compute the various performance metrics associated to each calibrated model (see Main Document), run the following scripts:

bash C\_compute\_evaluation\_distributions.sh

And:

bash D\_compute\_complete\_evaluation\_distributions.sh

This operation could also take some time. Resulting files will be saved in the folders 4\_models\_evaluation and 5\_models\_complete\_evaluation.

**7. Generate the figures of the manuscript**

To generate the figures of this manuscript, simply execute the following script (the Unix library ImageMagick is needed, as well as the R packages ggplot2, cowplot, sf and ggpubr):

bash E\_generate\_figures.sh

All the figures are saved in the folder figures. The AnimationS1 gif is saved in the folder gif.

**8. Convert figures**

To convert figures in png and svg format, run:

bash F\_convert\_figures.sh

Converted figures are saved in the folder figures.