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.