**Information content analysis reveals desirable aspects of in vivo experiments of a synthetic circuit**

Here the data presented in the paper are made available.

The data is organised in the following subfolders:

* ExperimentalDataLugagneCSV
  + 78 CSV files with all the experimental results from [1] as Observables, and the different experimental conditions applied as Inputs (conditions at each time point) and Events\_Inputs as a summary made by events of the experiment (different input profiles)
* Stan\_Results
  + 11 files Stan files the results from the inferences performed in RStan for the experimental results selected from the dataset in [1]. Nomenclature of the results follows the one used in [1] and the files in ExperimentalDataLugagneCSV where Calibration 4,5,6 represent EC1, EC2 and EC3 respectively and DynStim 1,2,3,8,9,11,14 represent ED1, ED2, ED3, ED4, ED5, ED6 and ED7 respectively as well. All\_Long represents the inference result using all selected datasets at once.
* PriorsCSV
  + 1 CSV file containing the priors resultant from the computation in the script ExtractingInitialPriorsLugagneLog for all the priors (10 log normal and 4 normal priors).
* InformativeContent
  + Covariance, 1 CSV file containing the results of the determinant for the covariance matrix computed from the rstan results contained in Stan\_Results. Nomenclature of the results follows the one used in [1].
  + Entropy, 11 CSV files containing all the results from the entropy calculation (Entropy of the prior, Upper and Lower bounds for the posterior Entropy, Posterior Entropy and Relative Entropy). Nomenclature of the results follows the one used in [1].
* ModelPredictions
  + Predictions, 220 files with the prediction results from all the MCMC samples obtained on the RStan inference for all the datasets considered in the study. InferenceResults indicate from which stanfit object the parameters have been used, and Simulation which experimental profile is being simulated.
  + nRMSE, 200 files with the nRMSE distributions computed from all the prediction files (but for the multiexperimental inference results) from the folder Predictions. Parameters indicate which parameter samples are used (from which stanfit object come from) and SimulationVar which experimental profile is being simulated
* Images
  + csv and dat files required to run the scripts for the generation of images. Please refer to the scripts for an explanation of the content of each file.

References:

[1] Jean-Baptiste Lugagne, Sebastián Sosa Carrillo, Melanie Kirch, Agnes Köhler, Gregory Batt & Pascal Hersen, 2017. Balancing a genetic toggle switch by real-time feedback control and periodic forcing. Nature Communications, 8 (1671), pp. 1-7.