SBML tools in Python

Here I compare the different python tools for SBML manipulation

Website for collected packages/software information: [https://biosimulators.org](https://biosimulators.org/)

Online tool to validate SBML model: http://constraint.caltech.edu:8888/validator\_servlet/index.jsp

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| --- | --- | --- | --- | --- | --- |
| Status | Name of Package | Advantages | Disadvantages | Description | |
| X, 1 | [Tellurium](http://tellurium.analogmachine.org/) | Import successful, simulation up and running. | Crashes program when errors in matlab file. | Relies on Roadrunner |  |
| X, 1 | [SBMLtoODE](https://joss.theoj.org/papers/10.21105/joss.01643) | Manipulation tool, up and running, accessing species requires string of name of species. | Access to species ect. Requires exact names. Conversion from matlab export removes these name informations, thus making it very difficult to use. | Prints second file with “python readable” model file | |
| X, 1 | [libRoadRunner](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4607739/) | Simulation tool, import & simulation successful |  | Very bad documentation | |
|  | [SBMLToolbox](http://model.caltech.edu/software/sbmltoolbox/) | Simulation tool |  | For matlab, octave | |
|  | deSolve, ODE solver | Simulation tool |  | Check which packages can spit out system of ODEs | |
|  | [Bionetgen](https://pypi.org/project/biosimulators-bionetgen/) |  |  |  | |

**0 Github repository: Branch TDLemonNovecento/ODE\_system**

https://git-scm.com/book/en/v2/Git-Branching-Basic-Branching-and-Merging

$ git clone <https://github.com/TDLemonNovecento/ODE_system.git>

$ git checkout -b tellurium # checkout: change to branch, -branch: create new branch

$ git checkout master

$ git merge tellurium # merges changes in tellurium to master

1. Plot same as Matlab
2. Difference between matlab results & python results would be great

Virtual-pip (alternative to conda?)

# rf: read file using tellurium package in python

# author: M. Stuke, 05-Sept-2021

# Conda env information:

# $ conda create --name lim\_tellurium python=3

# $ conda activate lim\_tellurium

# $ pip install tellurium

SBMLutils (great errormessages) relies on libSBML