

SBML tools in Python

Here I compare the different python tools for SBML manipulation

Website for collected packages/software information: <https://biosimulators.org>

Online tool to validate SBML model:

http://constraint.caltech.edu:8888/validator_servlet/index.jsp

Status	Name of Package	Advantages	Disadvantages	Description
X, 1	Tellurium	Import successful, simulation up and running.	Crashes program when errors in matlab file.	Relies on Roadrunner
X, 1	SBMLtoODE	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	Simulation tool, import & simulation successful		Very bad documentation
	SBMLToolbox	Simulation tool		For matlab, octave
	deSolve, ODE solver	Simulation tool		Check which packages can spit out system of ODEs
	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 error messages) relies on libSBML