

GammaLib - Bug #4222

gammalib 2.0 crashes when the test suite is called

03/13/2023 06:15 PM - Peresano Michele

<b>Status:</b>	Closed	<b>Start date:</b>	03/13/2023
<b>Priority:</b>	High	<b>Due date:</b>	
<b>Assigned To:</b>	Knödseder Jürgen	<b>% Done:</b>	100%
<b>Category:</b>		<b>Estimated time:</b>	0.00 hour
<b>Target version:</b>	2.1.0		
<b>Description</b>			
<p>I installed <i>gammalib</i> from conda (<i>v2.0.0</i> is the last version available from this channel).</p> <p>Following the documentation, I started by checking if everything works with the <code>test()</code> function and the program crashed immediately.</p> <pre>(gammalib) [michele@d-h-122 ~]\$ ipython Python 3.10.9   packaged by conda-forge   (main, Feb  2 2023, 20:24:27) [Clang 14.0.6 ] Type 'copyright', 'credits' or 'license' for more information IPython 8.11.0 -- An enhanced Interactive Python. Type '?' for help.</pre> <pre>In [1]: import gammalib  In [2]: gammalib.test() ----- ModuleNotFoundError          Traceback (most recent call last) Cell In[2], line 1 ----&gt; 1 gammalib.test()  File  66 def test(): --&gt; 67     from gammalib.tests import test_python     68     test_python.test(installed=True)  ModuleNotFoundError: No module named 'gammalib.tests'</pre> <p>There is indeed no <code>test*s*</code> module, just <i>test</i>. First I tried naïvely to fix the typo, but there is also no function named <code>test_python</code> in that module,</p> <pre>ImportError: cannot import name 'test_python' from 'gammalib.test'</pre>			
<b>Related issues:</b>			
Related to GammaLib - Change request # 4223: Replace distutils by setuptools			<b>Closed</b> <b>03/14/2023</b>

History

- #1 - 03/13/2023 06:31 PM - Knödseder Jürgen
- Status changed from New to In Progress
  - Assigned To set to Knödseder Jürgen
  - % Done changed from 0 to 10

On what OS have you tried the installation?

And what do you see when you type:

ls ~/Applications/mambaforge/envs/gammalib/lib/python3.10/site-packages/gammalib-2.0.0-py3.10-macosx-10.9-x86\_64.egg/gammalib/

#2 - 03/13/2023 06:33 PM - Peresano Michele

On what OS have you tried the installation?

macos Big Sur 11.7.4

ls

~/Applications/mambaforge/envs/gammalib/lib/python3.10/site-packages/gammalib-2.0.0-py3.10-macosx-10.9-x86\_64.egg/gammalib/

__init__.py	_linalg.py	_support.cpython-310-darwin.so	lat.py
__pycache__	_model.cpython-310-darwin.so	_support.py	linalg.py
_app.cpython-310-darwin.so	_model.py	_test.cpython-310-darwin.so	model.py
_app.py	_mwil.cpython-310-darwin.so	_test.py	mwil.py
_base.cpython-310-darwin.so	_mwil.py	_vo.cpython-310-darwin.so	numerics.py
_base.py	_numerics.cpython-310-darwin.so	_vo.py	obs.py
_com.cpython-310-darwin.so	_numerics.py	_xml.cpython-310-darwin.so	opt.py
_com.py	_obs.cpython-310-darwin.so	_xml.py	sky.py
_cta.cpython-310-darwin.so	_obs.py	_xspec.cpython-310-darwin.so	spi.py
_cta.py	_opt.cpython-310-darwin.so	_xspec.py	support.py
_fits.cpython-310-darwin.so	_opt.py	app.py	test.py
_fits.py	_sky.cpython-310-darwin.so	base.py	vo.py
_lat.cpython-310-darwin.so	_sky.py	com.py	xml.py
_lat.py	_spi.cpython-310-darwin.so	cta.py	xspec.py
_linalg.cpython-310-darwin.so	_spi.py	fits.py	

#3 - 03/13/2023 07:00 PM - Knödseder Jürgen

- % Done changed from 10 to 20

Okay, there is a tests folder missing, but everything else looks ok.

Have you tried stuff from <http://cta.irap.omp.eu/gammalib/users/quickstart.html>, skipping the `gammalib.test()` command?

Maybe the installation is correct but something went wrong with the tests installation. I need to see whether I manage to install a macOS Big Sur 11.7.4 VM for testing.

#### #4 - 03/13/2023 09:19 PM - Peresano Michele

Yes the rest of the quickstart works as expected (by the way, the link to the Doxygen documentation points to a non-existent HTML page)

#### #5 - 03/14/2023 09:19 AM - Knödlseider Jürgen

Thanks for feedback. I will see if I can reproduce and fix the problem.

Thank also for mentioning the broken Doxygen link, I will fix it.

#### #6 - 03/14/2023 09:31 AM - Knödlseider Jürgen

- Target version set to 2.1.0

- % Done changed from 20 to 30

In the meantime I tested the conda version for Python 3.10 on my Mac to see whether the problem is related to this specific Python version, and this seems to be the case!

After creating a Python 3.10 environment and installing gammalib I see the following in the site-package folder:

```
$ ls /Users/jurgen/anaconda3/envs/gammalib-test-3.10/lib/python3.10/site-packages/
README.txt          pip-23.0.1-py3.11.egg-info
_distutils_hack      pkg_resources
distutils-precedence.pth  setuptools
gammalib             setuptools-67.6.0-py3.11.egg-info
gammalib-2.0.0-py3.10-macosx-10.9-x86_64.egg  wheel
gammalib.pth         wheel-0.38.4-py3.11.egg-info
pip
```

Here there is a gammalib folder and a gammalib-2.0.0-py3.10-macosx-10.9-x86\_64.egg folder. The tests directory ends up in the gammalib folder, the remaining stuff is in the gammalib-2.0.0-py3.10-macosx-10.9-x86\_64.egg folder.

For Python 3.9 the organisation of the site-packages folder is different:

```
$ ls /Users/jurgen/anaconda3/envs/gammalib-test-3.9/lib/python3.9/site-packages/
README.txt          gammalib-2.0.0-py3.9-macosx-10.9-x86_64.egg-info  setuptools
_distutils_hack      pip          setuptools-67.6.0-py3.11.egg-info
distutils-precedence.pth  pip-23.0.1-py3.11.egg-info  wheel
gammalib             pkg_resources          wheel-0.38.4-py3.11.egg-info
```

Here, everything is in gammalib, there is no gammalib-2.0.0-py3.9-macosx-10.9-x86\_64.egg folder but a gammalib-2.0.0-py3.9-macosx-10.9-x86\_64.egg-info folder that does not contain the modules.

The difference between both formats is described at [https://setuptools.pypa.io/en/latest/deprecated/python\\_eggs.html](https://setuptools.pypa.io/en/latest/deprecated/python_eggs.html). I guess that the conda package manager changed the way how it deals with the eggs between Python 3.9 and 3.10 (the setuptools are setuptools-67.6.0 for both Python versions, as shown above).

**#7 - 03/14/2023 10:57 AM - Knödlseider Jürgen**

I think the issue comes from the fact that the building and installation of the Python module is handled over the pyext/setup.py script, while the tests folder is generated using the gcc make system (file pyext/Makefile.am).

**#8 - 03/14/2023 12:32 PM - Knödlseider Jürgen**

- % Done changed from 30 to 50

It turns out that the different installation in Python 3.10 with respect to Python 3.9 is related to a behind-the-scenes switch from distutils to setuptools. See #4223 for more information.

**#9 - 03/14/2023 12:32 PM - Knödlseider Jürgen**

- Related to Change request #4223: Replace distutils by setuptools added

**#10 - 03/15/2023 04:41 PM - Knödlseider Jürgen**

- Status changed from In Progress to Closed

- % Done changed from 50 to 100

I have implemented the necessary changes (see #4223), they will go into the next release. I close the issue now.