

$\gamma\pi$ Automating Validation and Benchmarks

gammapy / gammapy-benchmarks

<> Code

Issues 0

Pull requests 0

Actions

Performance benchmarks for Gammapy

Manage topics

432 commits

3 branches

0 packages

Branch: master

New pull request

registerrier Merge pull request #61 from registerrier/master

...

benchmarks

commit final results

validation

Add lightcurve validation repository

.gitignore

Adapt to latest master

LICENSE

Initial commit

README.md

Create README.md

Branch: mastergammapy-benchmarks / benchmarks /

Create new fileUpload filesFind fileHistory

AtreyeeS commit final resultsLatest commit 24b1d01 on 25 Mar

..

results	commit final results	last month
README.md	Implement GAMMAPY_BENCH_N_OBS for benchmarks	6 months ago
analysis_3d.py	adapt non-ic	last month
analysis_3d_joint.py	adapt all scripts	last month
io.py	adapt io	5 months ago
lightcurve_1d.py	adapt all scripts	last month
lightcurve_3d.py	updated scripts	last month
make.py	Update benchmarks	6 months ago
spectrum_1d.py	adapt all scripts	last month
spectrum_1d_joint.py	adapt all scripts	last month

Branch: mastergammapy-benchmarks / validation /

Create new fileUpload filesFind fileHistory

registerrier Add lightcurve validation repositoryLatest commit 85d5968 19 days ago

..

catalog	black	6 months ago
cta-1dc	updated with v0.15	5 months ago
data	cleaning the notebook	2 months ago
event-sampling	fixing bugs	last month
fermi-3fhl	add figures	2 months ago
hess-dl3-dr1	Update hess validation	2 months ago
joint-crab	Update fermi results	2 months ago
lightcurve	Add lightcurve validation repository	19 days ago
README.md	Update README.md	6 months ago

README.md

Gammapy validation and benchmarks

This is the set of validation and benchmarks for Gammapy that we continuously maintain for Gammapy.


It should always work with the latest Gammapy master, if it doesn't, send a pull request.




Executing this is manually for now, not part of a continuous integration / deployment set




- validation - Gammapy correctness checks (model fitting, spectra, lightcurves, ...)
- benchmarks - Gammapy Performance checks (time, CPU, RAM)

- ✓ **gammapy-benchmarks** repo is completely **decoupled** from **gammapy**
- ✓ mostly all benchmarks and validation scripts are **broken**
- ✓ **not** even **reproducible** with an old gammapy stable version
- ✓ **provenance** info available only for benchmarks
- ✓ scripts have to be run **manually**

Branch: master ▾ [gammapy-benchmarks](#) / [benchmarks](#) / [results](#) / [analysis_3d](#) / [provenance.yaml](#) Find file Copy path

 AtreyeeS commit stacked3d res 3c178d1 on 25 Mar

3 contributors   

11 lines (11 sloc) 232 Bytes Raw Blame History   

```
1 env:
2   machine: x86_64
3   system: Darwin
4   user: asinha
5   software:
6     astropy: 3.2.3
7     gammapy: 0.16.dev734+g277ede6d1
8     numpy: 1.17.3
9   python_executable: //anaconda3/envs/gammapy-dev/bin/python
10  python_version: 3.7.0
11  scipy: 1.3.3
```

validation

- ✗ catalog
- ✗ cta-1dc
- ✗ event-sampling
- ✗ fermi-3fh1
- ✗ hess-dl3-dr1
- ✓ joint-crab

have to be run **separately**

benchmarks

- ✗ analysis-3d
- ✗ analysis_3d_joint
- ✗ lightcurve_1d
- ✗ lightcurve_3d
- ✗ spectrum_1d
- ✗ spectrum_1d_joint
- ✓ io

may to be run **all-together**

most common fails

```
fpe = FluxPointsEstimator(datasets=stacked, e_edges=e_edges, source="gc-source")
TypeError: __init__() got an unexpected keyword argument 'datasets'
```

```
AttributeError: 'Parameters' object has no attribute 'covariance'
```

```
AttributeError: 'Parameters' object has no attribute 'get_subcovariance'
```

```
astropy.units.core.UnitConversionError: '' (dimensionless) and 'd' (time) are not convertible
```

```
ImportError: cannot import name 'SkyModels' from 'gammapy.modeling.models'
```

```
ImportError: cannot import name 'LiMaMapEstimator' from 'gammapy.estimators'
```

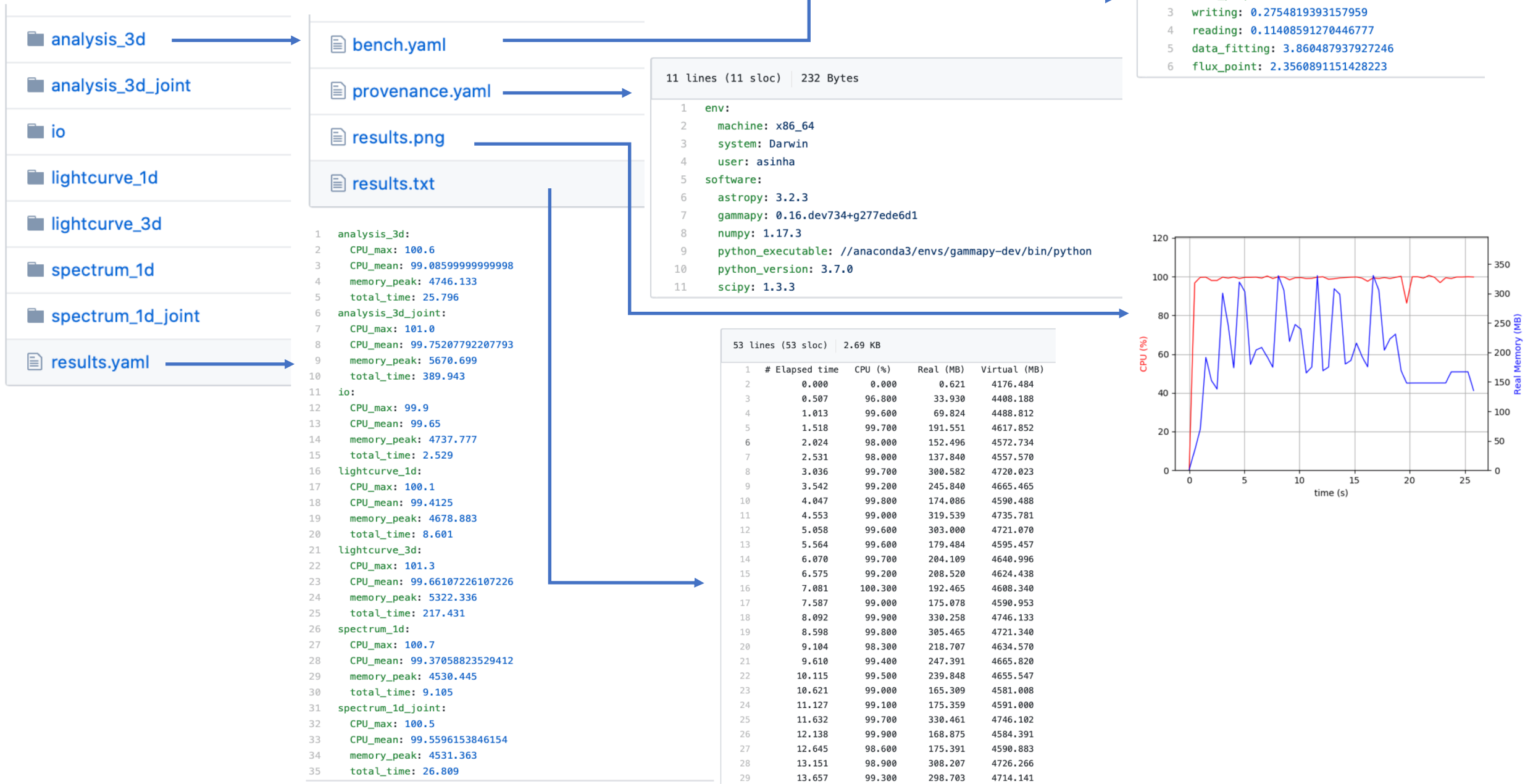
```
ModuleNotFoundError: No module named 'gammapy.estimators'
```

```
ModuleNotFoundError: No module named 'gammapy.datasets'
```

most common warnings

```
Invalid unit found in background table! Assuming (s-1 MeV-1 sr-1)
```

✓ results are well structured **only for benchmarks**



Proposition

✓ Automation with Github actions

- Make validation scripts to run all-together with **parent make.py script**
- **Disable broken** benchmarks and validations scripts
- Automate **scheduled nightly execution** with dev gammapy version
- Do **commit results** from benchmarks if benchmarks execution passes
- Email **notification** if benchmarks or validations execution fails / who?
- Add **a status badge** in gammapy-benchmarks repository

✓ Fixing

- **Fix broken** benchmarks and validations scripts
- Update README.md pages

✓ Improving

- Use always high-level interface if possible
- Provide **well structured results** issued from validation scripts
- Make validation comparisons w/ tolerance values using **pytest**
- Notify when run fails and/or pytest comparisons do not assert
- Consider trigger execution of validation/benchmarks for PRs in gammapy which will allow us to better identify the why broken scripts in gammapy-benchmarks