PYTHON / GAMMAPY WORKSHOPS

PARIS SUMMARY & MPIK OVERVIEW

Christoph Deil
Feb 27, 2017

Please download & install Anaconda Python if you don't have a scientific Python installation on your laptop already!
See infos on this and other info for the workshop at bit.ly/2lnkimE which points to https://github.com/gammapy/gammapy-meetings/blob/master/2017-02_Heidelberg.md

PARIS GAMMAPY WORKSHOP SUMMARY

Last week in Paris, organised by Régis Terrier & Julien Lefaucheur

PARIS GAMMAPY WORKSHOP

- Four days last week (Monday — Friday noon)
  22 participants, most from Paris
- All info available in the gammapy-meetings repo on Github.
- Monday: Gammapy overview & Numpy/Astropy tutorial
- Tuesday: Gammapy tutorials
- Wednesday: more Gammapy tutorials + ctapipe + provenance + tutorial: test-driven development and how to contribute (git, Github)
- Thursday & Friday: discussions & analysis & coding in small groups

- Christoph Deil
- Régis Terrier
- Julien Lefaucheur
- Bruno Khelifi
- Santiago Pita
- Léa Jouvin
- Tarek Hassan
- Anne Lemière
- Fabio Acero
- Karl Kosack
- Thierry Stolarczyk
- Catherine Boisson
- Zeljka Bosjnak
- Andreas Zech
- Matteo Cerruti
- Jean-Philippe Lenain
- Marion Jacob
- Arache Djannati-Ataï
- Michelle Tsirou
- Thomas Vuillaume
- Jose Enrique Ruiz
- Kai Brügge

GAMMAPY TUTORIAL NOTEBOOKS

- Thanks to the Paris workshop last week (and the MPIK one this week, and the Milano CTA meeting next week), there was an effort to create tutorial-style introductions for Gammapy.
- Can read online at http://nbviewer.jupyter.org/github/gammapy/gammapy-extra/blob/master/index.ipynb
- Most were presented last week, and executed / followed along by most participants.

GAMMAPY TUTORIAL NOTEBOOKS

If you're new to Astro (haven't used `Table`, `SkyCoord` and `Time` much), start here:

- Astropy introduction for Gammapy users

For a quick introduction to Gammapy, go here:

- First steps with Gammapy

To learn how to load gamma-ray data with Gammapy:

- IACT DL3 data with Gammapy (H.E.S.S. data example)
- Fermi-LAT data with Gammapy (Fermi-LAT data example)

Tutorial introductions to gamma-ray data analysis:

- Image analysis with Gammapy (H.E.S.S. data example)
- Spectral analysis with Gammapy (H.E.S.S. data example)
- Spectrum simulation and fitting (Toy MC detector)
- Spectrum simulation and fitting (CTA data example)
- Cube analysis with Gammapy (part 1)
- Cube analysis with Gammapy (part 2)
- Source detection with Gammapy (Fermi-LAT data example)

This week Tuesday & Wednesday, we will present some of these tutorials to you. Let us know what you're interested in / not interested in — agenda is flexible.

FIRST LIGHT WITH GAMMAPY FOR FACT / MAGIC DATA

Slide skipped. Info not public.

OTHER DEVELOPMENTS LAST WEEK

- Régis & Johannes implement energy dispersion matrix computation in a better way
- Marion & Arache started on pulsar analysis with PINT & Gammapy. First step: Phasogram class in gammapy.time
- Julien & Zeljka worked on GRB predictions for CTA — first CTA studies with Gammapy are starting
- Fabio & Léa try 3D analysis for CTA for the first time
- More Gammapy-related things, didn't have time to follow everything.

PARIS GAMMAPY WORKSHOP SUMMARY

- I think we managed to walk the line and make a workshop that is useful for everyone from Python beginner to Gammapy core developer.
- Lots of interesting discussions and valuable feedback on methods, API and implementation for Gammapy
- By now, many known issues and things we should improve.
- Gammapy development will continue in the coming weeks and months to make it better.
- Let's see how the Gammapy user base and contributor team evolve in the coming months …

MPIK PYTHON GAMMAPY WORKSHOP

Overview & logistical infos

MAX-PLANCK-INSTITUT FÜR KERNPHYSIK

MPIK PYTHON / GAMMAPY WORKSHOP

- A bit more beginner-oriented than the workshop in Paris last week, but similar in spirit.
- Mostly MPIK people, a few guests (wasn't advertised widely)
- Monday to Wednesday, we'll do lessons on:
  - Python, IPython, Jupyter notebooks
  - Numpy, Scipy, Astropy, Gammapy, ctapipe
- Thursday & Friday, if you want, we'll help you get started
  - as a user — your first FITS / Gammapy analysis
  - as a contributor — your first pull request to Gammapy or ctapipe
- We hope everyone will learn something new! Agenda is not strict at all — let us know what you're interested in an we'll focus on what you want!

LOGISTICAL INFOS

- WIFI: use eduroam. If you don't have it, sign a guest form and get a PIN to use the MPIK network.
- Rooms:
  - Monday - Wednesday here
    (central seminar room, library building)
  - Thursday & Friday - "Glaskasten" in Bothe lab (top floor)
- Lunch: ask someone from MPIK to pay with their card, and then give them the money (usually 5-7 Euro) after.
- Activities: no fixed plans yet.
  - go to Bierhelder Hof for lunch once?
  - Dinner together downtown?
  - Order Pizza to MPIK once?

AGENDA FOR TUTORIALS

- More or less decided:
  - Python (Monday afternoon, Christoph Deil)
  - Scientific Python (Monday afternoon, Dan Parsons)
    (Jupyter notebooks, Numpy, Scipy, matplotlib)
  - Astropy (Tuesday morning, Axel Donath)
  - Gammapy (Tuesday afternoon, Johannes King & Axel)
  - ctapipe & Bokeh (Wednesday morning, Jason Watson)
- Some options what else to do on for the second half of the week:
  - More Gammapy tutorials for 1D, 2D, 3D analysis with H.E.S.S. or Fermi-LAT data
  - Explain FITS DL3 data formats (in case HAWC or CTA people are interested to convert FITS data to a format that works with Gammapy)
  - Hands-on tutorial on test-driven development with pytest
  - Hands-on tutorial on git & Github — make your first pull request
  - No more tutorials, get to work starting Wednesday at noon.

AND NOW — LET'S GET STARTED!

- Questions? Comments?
- Can we start with the Python beginner class?

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