

# Tenth International Fermi Symposium

9th-15th October 2022



easyFermi: a graphical interface for  
performing Fermi-LAT data analyses

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# A graphical interface for Fermipy

Basic Fermi-LAT analyses:

- Data selection
- ROI fit with Fermitools
- Binned likelihood

easyFermi<sup>1</sup> computes:

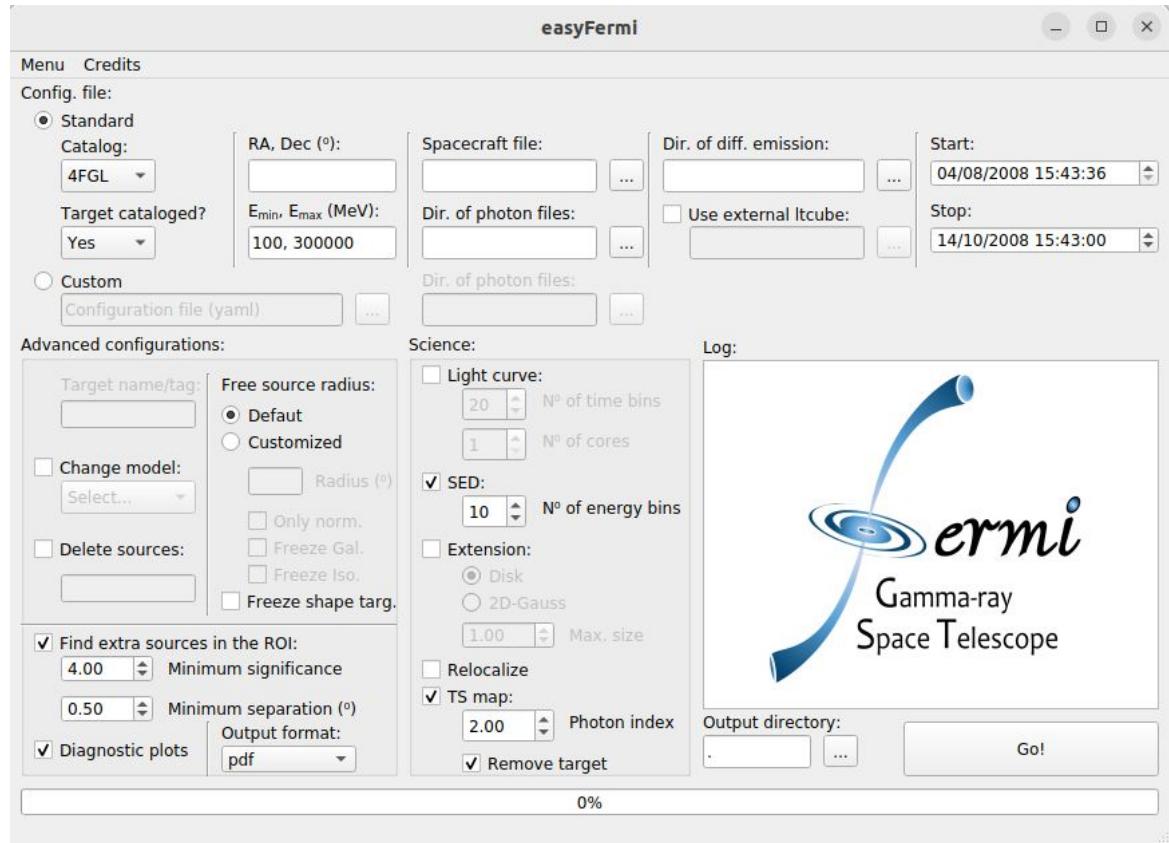
- Flux and spec. shape
- Light curves
- SED
- Extension
- Relocalization
- TS map

More complex analyses must be done with Fermipy<sup>2</sup> or Fermitools<sup>3</sup> (e.g.: stacking, pulsars, unbinned).

1. <https://github.com/ranierepmenezes/easyFermi>

2. <https://fermipy.readthedocs.io/en/latest/>

3. <https://github.com/fermi-lat/Fermitools-conda/wiki>



# The main window

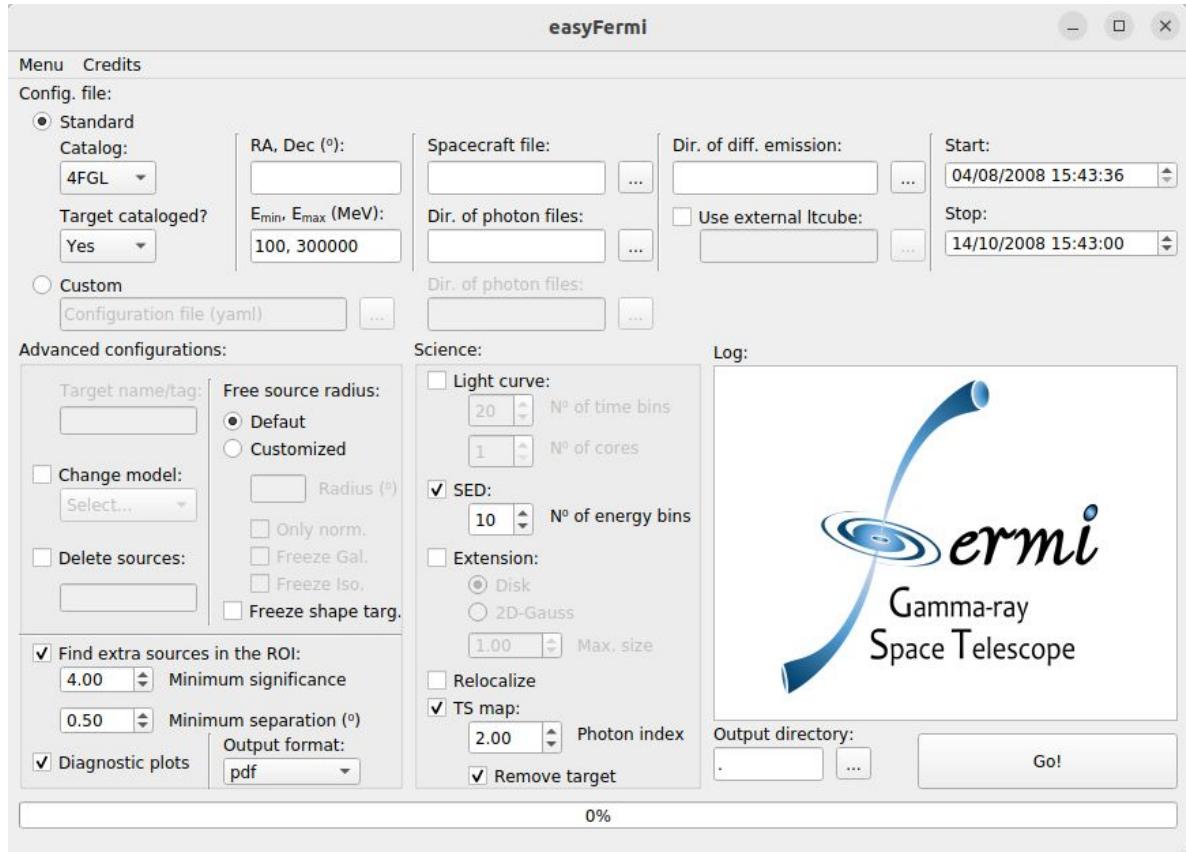
```
$ python  
>>> import easyFermi
```



**Standard mode** depends on min energy: 0.1, 0.5 or > 1 GeV.

- ROI size is L x L, where L = 15°, 12° or 10°.
- Zenith = 90°, 100° or 105°
- evclass = 128, evtype = 3
- $R_{\text{free-sources}} = L/2$
- P8R3\_SOURCE\_V3
- 8 bins per energy decade

**Standard mode is recommended for point-source analysis.**



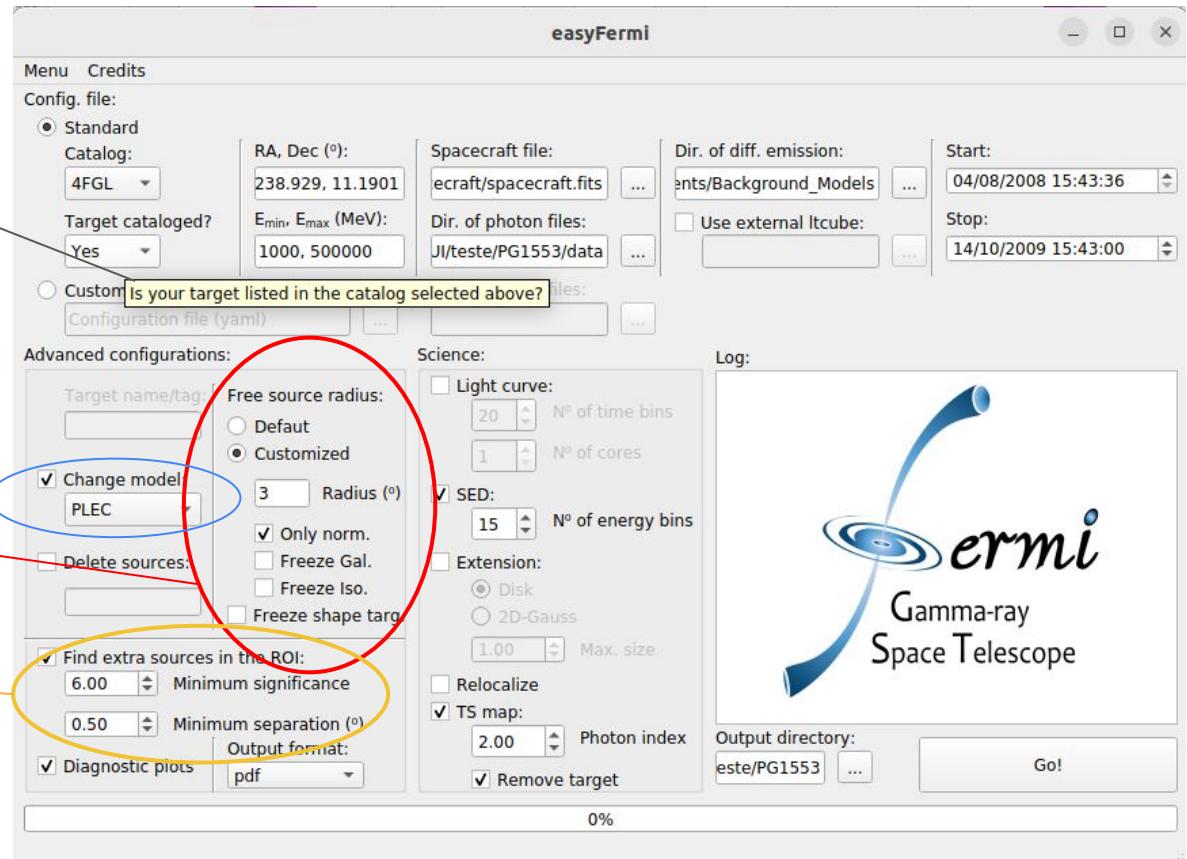
# Advanced configurations

easyFermi is full of tooltips.

You can easily change the spectral model of the target.

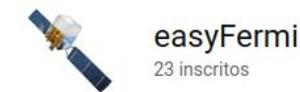
The user can change  $R_{\text{free-sources}}$  and can freeze the spectral shape of the sources in the ROI.

easyFermi looks for non-cataloged sources in the ROI.



Behind the scenes, easyFermi is running Fermipy.

# Tutorials on Youtube and GitHub



easyFermi  
23 inscritos

INÍCIO

VÍDEOS

PLAYLISTS

CANAIS

SOBRE



Envios ► Reproduzir todos



easyFermi | Goodness of fit  
and advanced configurations

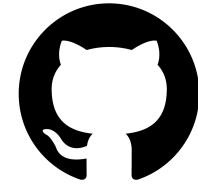
114 visualizações • há 4 meses



Introduction to easyFermi |  
Learn how to analyze Fermi...

329 visualizações • há 6 meses

[https://www.youtube.com/channel/UCeLCfEoWasUKky6CPNN\\_opQ](https://www.youtube.com/channel/UCeLCfEoWasUKky6CPNN_opQ)



# GitHub

main · 1 branch · 0 tags

Go to file Add file · Code ·

ranieremenezes Improving the aspect ratio of SED plots 42816ec 7 days ago 49 commits

code Improving the aspect ratio of SED plots 7 days ago

LICENSE Initial commit 8 months ago

README.md Update README.md last month

README.md

## easyFermi

The easiest way to analyze Fermi-LAT data.

### Requirements and installation

easyFermi relies on Python 3, Fermitools and Fermipy.

We recommend the user to install Miniconda 3 or Anaconda 3 before proceeding.

<https://github.com/ranieremenezes/easyFermi>

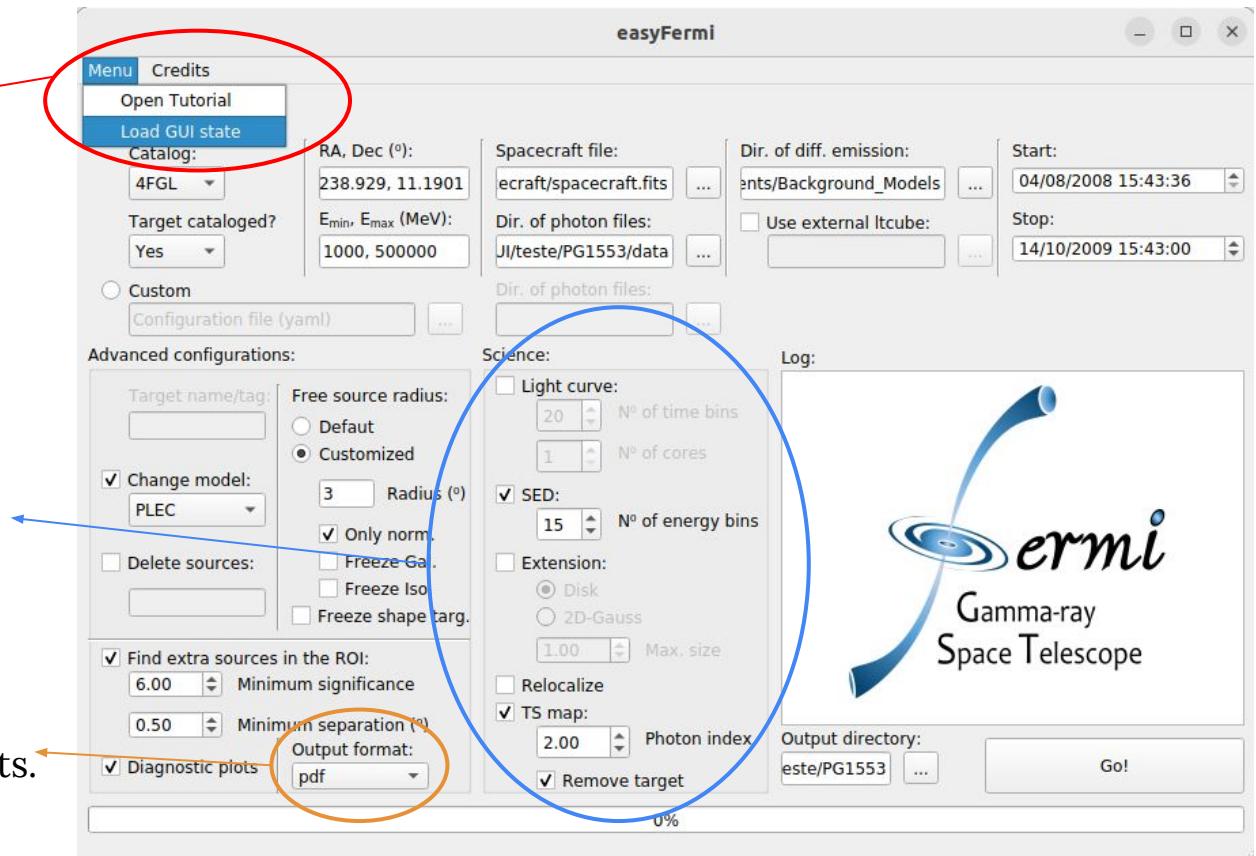
# Useful tips

easyFermi allows the user to load the state of the GUI: **you can restart exactly from where you stopped.**

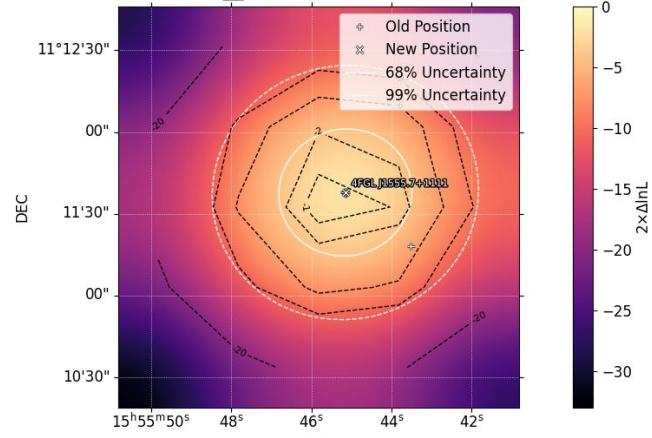
GUI state is saved in the file “GUI\_status.npy” in the output directory.

The **data products can be updated on the fly.**

easyFermi automatically plots the results in pdf or png formats.

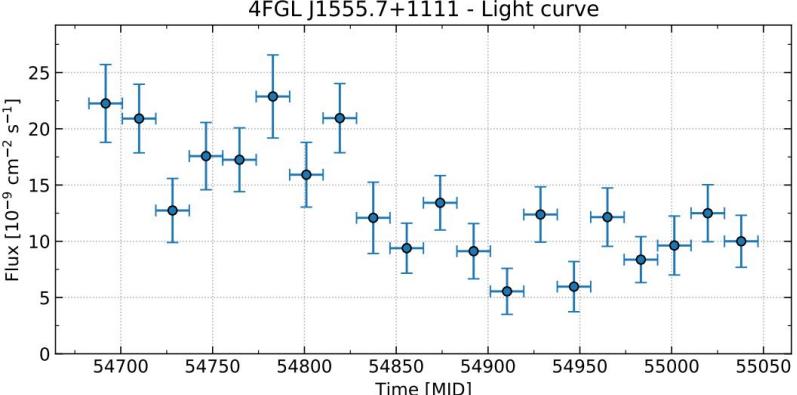
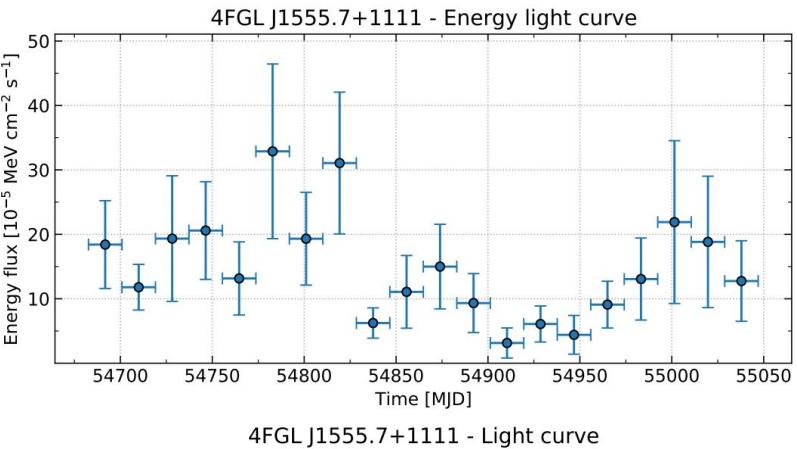
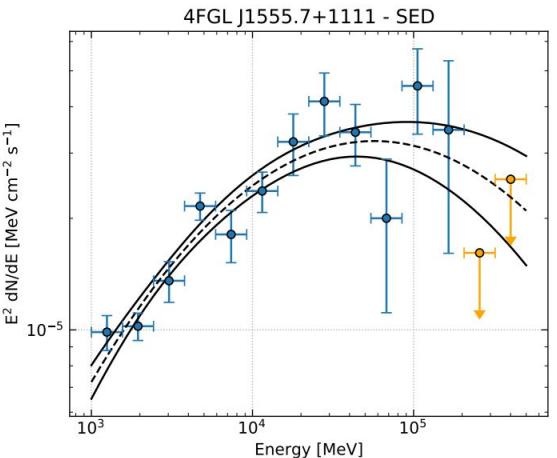
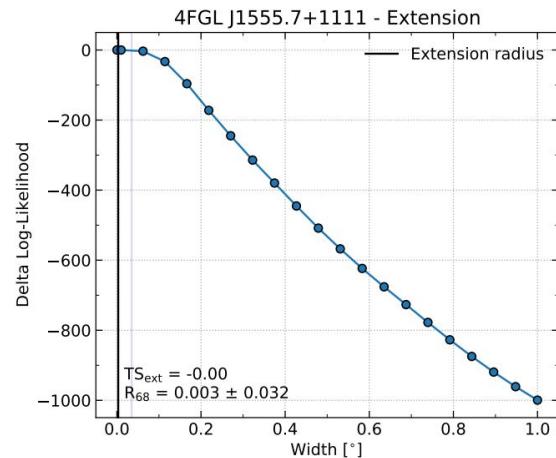


# Data products PG1553+113



Everything is saved in fits and npy files as:

- SourceName\_sed.fits
  - SourceName\_sed.npy
  - SourceName\_lightcurve.fits
  - ...
  - Results.fits (and .npy)
  - Target\_results.txt



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## Thank you for your attention!

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Full length article

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