

# Manuscript SM19-AK325:

## How to access the data

### 1 Links of data

The data that we used are publicly available at the following websites.

- The Fermi LAT data that are accessible on line are available at the following links  
<https://heasarc.gsfc.nasa.gov/FTP/fermi/data/lat/weekly/p8r2/photon/>  
<https://heasarc.gsfc.nasa.gov/FTP/fermi/data/lat/weekly/p7v6d/>  
<https://heasarc.gsfc.nasa.gov/FTP/fermi/data/lat/weekly/p7v6c/>  
<https://heasarc.gsfc.nasa.gov/FTP/fermi/data/lat/weekly/p7v6b/photon/>  
<https://heasarc.gsfc.nasa.gov/FTP/fermi/data/lat/weekly/p7v6/photon/>  
<https://heasarc.gsfc.nasa.gov/FTP/fermi/data/lat/weekly/p6v11/photon/>  
<https://heasarc.gsfc.nasa.gov/FTP/fermi/data/lat/weekly/p6v3/photon/>
- The 3FHL catalog that we used as a benchmark of our results can be found in  
<https://fermi.gsfc.nasa.gov/ssc/data/access/lat/3FHL/>
- The Fermi LAT theoretical model can be found in  
<https://fermi.gsfc.nasa.gov/ssc/data/access/lat/BackgroundModels.html>

Notice that all the data are in .fits extension. The reader could use the library FITSio to read them or simply convert them in .RData.

### 2 Preparation of the input file

Instructions for preparing the data to give in input to the code.

- 1) Download the table with the parameters of the PSF in  
[https://github.com/fermi-lat/irfs/tree/master/caldb\\_release/CALDB/data/glast/lat/bcf/psf/psf\\_P8R2\\_SOURCE\\_V6\\_PSF.fits](https://github.com/fermi-lat/irfs/tree/master/caldb_release/CALDB/data/glast/lat/bcf/psf/psf_P8R2_SOURCE_V6_PSF.fits)
- 2) Use the script `Data_Preparator/From_fits_to_R_for_the_PSF_parameters.R` to convert `psf_P8R2_SOURCE_V6_PSF.fits` into different .RData files
- 3) Download the .fits file/s you want to analyze i.e  
[https://heasarc.gsfc.nasa.gov/FTP/fermi/data/lat/weekly/p8r2/photon/lat\\_photon\\_weekly\\_w009\\_p302\\_v001.fits](https://heasarc.gsfc.nasa.gov/FTP/fermi/data/lat/weekly/p8r2/photon/lat_photon_weekly_w009_p302_v001.fits)  
Note, at this stage the file cannot be read in .R (since the library FITSio has not the facility to read some parameters in the file). You need to use the python script `reduce.py` to select and extract the parameters that you need.
- 4) Use the script `Data_Preparator/data_generator.R` to get the final version of the data that you will give in input at `main.R`.