

Description of functions and procedures

Regular binning

Name: `regular_datas`
Description: creates the data file, depending of the parameters range, which is used for the visualization
Input: parameters range
Output: data files

Name: `regular_graph`
Description: execute the visualization
Input: energy bin, input data file
Output: NONE

Name: `regular_sorting`
Description: creates the regular bins. Calculate the fluxes and creates the subdirectories.
Input: begin and end date
Output: flux files

Variable binning

Name: `variable_datas`
Description: creates the data file, depending of the parameters range, which is used for the visualization
Input: parameters range
Output: data files

Name: `variable_graph`
Description: execute the visualization
Input: energy bin, input data file
Output: NONE

Name: `variable_sorting`
Description: calls the variable bins creation procedures. Calculate the fluxes and creates the subdirectories.
Input: begin and end dates
Output: flux files

Name: `create_bin`
Description: execute the first data reading. Calls for each parameter the bin creation procedure and writes each binning in a file
Input: begin and end dates
Output: bins files

Name: `find_bin`
Description: finds the correct bin for each parameter's value with the Brent's method
Input: bins array, studied data
Output: correct bin index in the bins array

Name: `matrix_bin`
Description: sort the parameters and creates the variables bins depending of these sorted values, while respecting the constraints of minimal measures and minimal bin size
Input: parameter's values array, minimal measures, minimal bin size
Output: bins array

Description of data files

Name: **flux.dat**
Create by : regular_sorting.pro, variable_sorting.pro
Description: contains the fluxes and sigma for the 20 energy bins

L1 – C1 to C20 : average fluxes (E=[0.1;0.5] to E=[9.5,10] MeV)
L2 – C1 : counter
L3 – C1 to C20 : sigma (E=[0.1;0.5] to E=[9.5,10] MeV)

Name: **bins_xx.dat (xx depends on the parameter)**
Create by : create_bin.pro
Description: contains the bins array for the parameter

C1 : lower limits
C2 : upper limits

Name: **flux_reg_xx.dat and flux_var_xx.dat (xx depends on the parameter's ranges)**
Create by : regular_datas.pro, variable_datas.pro
Description: contains the fluxes for the 20 energy bins classified by longitude and latitude

C1 : longitude
C2 : latitude
C3 : counter
C4 to C24 : average fluxes (E=[0.1;0.5] to E=[9.5,10] MeV)