The working directory has two folders, called "script" and “TIFF".

- In the "script" folder there are two scripts (one written in R code and one written in python code) which make up the entire software.

- In the “TIFF” folder there are the images in .tiff format that have been analyzed in this work. As an example, only two images have been uploaded here.

Pay attention: in order to apply the whole procedure to the two images loaded in the "TIFF" folder, the user will have to download a series of packages, both python and R, as indicated in the first lines of both codes.

The analysis process that carries out the code can be started by typing on the terminal, in the “script” directory, the following command:

Rscript Cluster_Identification_Image_ML_Approach_Def.R

(Note that the code named “ZernikeMoment2D_SingleImage_All_Def.py" is not executed directly, but is executed within the R code).

The code will create a series of folders, some temporary (where auxiliary files for analysis will be saved and then deleted from time to time) and some definitive (where there will be the output of this work).

There are two folders where the output files of this analysis are saved:

- “Figure_Best_C4” folder: in this folder all the image files corresponding to each identified channel will be loaded starting from the original image.
- “Zernike_Best_C4” folder: in this folder all the files containing the Zernike descriptors will be saved.

For each image of the “Figure_Best_C4” folder corresponds a file of the Zernike descriptors of the “Zernike_Best_C4” folder. To find the correspondence between the pair of files, each file, which will be linked to a given identified channel, will be named with the reference coordinates as obtained from the original image.