

04.Elaboracion_scripts

October 21, 2022

1 Elaboración de scripts usando notebooks

1.1 Importar librerías

```
[ ]: import xarray as xr
import numpy as np

from matplotlib import pyplot as plt

from cartopy.feature import ShapelyFeature, OCEAN, LAKES
from cartopy.crs import PlateCarree
from cartopy.io.shapereader import Reader as ShapeReader, natural_earth

import geocat.datafiles as gdf
import cmeps
import geocat.viz as gv
```

Updating file 'registry.txt' from 'https://github.com/NCAR/GeoCAT-datafiles/raw/main/registry.txt' to '/home/georgynio/.cache/geocat'.

1.2 Leer datos

```
[ ]: # ``time=0`` y ``lev=500`` hPa nivel

ds = xr.open_dataset(gdf.get("netcdf_files/uvr.nc")).sel(time=0, lev=500)
```

Downloading file 'netcdf_files/uvr.nc' from 'https://github.com/NCAR/GeoCAT-datafiles/raw/main/netcdf_files/uvr.nc' to '/home/georgynio/.cache/geocat'.

```
[ ]: ds
```

```
[ ]: <xarray.Dataset>
Dimensions: (lat: 64, lon: 128)
Coordinates:
  * lat      (lat) float32 -87.86 -85.1 -82.31 -79.53 ... 79.53 82.31 85.1 87.86
  * lon      (lon) float32 -180.0 -177.2 -174.4 -171.6 ... 171.6 174.4 177.2
  lev       int32 500
  time       int32 0
```

Data variables:

```
gw      (lat) float32 ...
date    int32 ...
U        (lat, lon) float32 ...
V        (lat, lon) float32 ...
T        (lat, lon) float32 ...
```

Attributes:

```
title:      U,V,T: January 1988
source:     Climate Analysis Section, NCAR
history:    Dataset uvt.hs from EZPLOT demo dataset
Conventions: None
creation_date: Wed Jun  2 09:39:22 MDT 1999
references:  \nEZPLOT for Publication Quality Plots\nChristian Guillem...
```

```
[ ]: # Por conveniencia solo, extraer las variables U,V,T y lat y lon
```

```
U = ds["U"]
V = ds["V"]
T = ds["T"]

lat = ds["lat"]
lon = ds["lon"]
```

```
[ ]: U
```

```
[ ]: <xarray.DataArray 'U' (lat: 64, lon: 128)>
array([[ -5.052073, -5.265492, -5.459492, ..., -4.310867, -4.573188, -4.820781],
       [ -4.672378, -4.909419, -5.143479, ..., -3.956761, -4.195312, -4.434005],
       [ -1.191795, -1.193106, -1.227566, ..., -1.317605, -1.261859, -1.21724 ],
       ...,
       [10.49126 , 10.737632, 10.911286, ...,  9.301472,  9.771217, 10.169077],
       [12.687131, 13.048413, 13.338918, ..., 11.202863, 11.760809, 12.256939],
       [12.209455, 12.535482, 12.810933, ..., 10.952672, 11.415219, 11.835147]],
      dtype=float32)
```

Coordinates:

```
* lat      (lat) float32 -87.86 -85.1 -82.31 -79.53 ... 79.53 82.31 85.1 87.86
* lon      (lon) float32 -180.0 -177.2 -174.4 -171.6 ... 171.6 174.4 177.2
lev        int32 500
time       int32 0
```

Attributes:

```
long_name:  Zonal Wind
short_name: U
units:      m/s
```

1.3 Retornar al [índice](#)