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import numpy as np
import matplotlib.pyplot as plt
from lofasm.bbx import bbx
import os
import sys
import glob
from lofasm import parse_data as pdat



#loco2bx.py to obtain bbx files with arrays
def loco(n):
        cwd1 = os.getcwd()


        print(str(n) + " files to look at")
        j = 1
        for filename in os.listdir(cwd1):

                print("\n Converting "+filename+" to .bbx...")

                if filename.endswith(".lofasm.gz"):
                        os.system("loco2bx.py -p CC,DD,CD " + filename)
                        print(os.path.join(filename) +" converted to bbx ("+str(j)+"/"+str(n)+
")")
                        j+=1


def numpyf(n, filei):

        countbinCC = np.zeros((n,1024))

        countbinDD = np.zeros((n,1024))

        countbinCD = np.zeros((n,1024), dtype=complex)

        cwd1 = os.getcwd()
        #go into CC channel and take an average of the values in the array
        os.chdir(cwd1+"/bbx/CC")
        cwd2 = os.getcwd()
        i = 0

        lst = os.listdir(cwd2)
        lst.sort()
        for filename2 in lst:
                if filename2.endswith(".bbx.gz"):
                        lf = bbx.LofasmFile(os.path.join(filename2))
                        lf.read_data()


                        countbinCC[i] = np.average(lf.data, axis=0)
                        print(filename2 + " avg bin added to array")

                        i += 1


                        lf.close()

        #go into DD channel and take an average of the values in the array
        os.chdir(cwd1)
        os.chdir(cwd1+"/bbx/DD")
        cwd3 = os.getcwd()
        i = 0
        lst = os.listdir(cwd3)
        lst.sort()
        for filename3 in lst:
                if filename3.endswith(".bbx.gz"):
                        df = bbx.LofasmFile(os.path.join(filename3))
                        df.read_data()


                        countbinDD[i] = np.average(df.data, axis=0)
                        print(filename3 + " avg bin added to array")

                        i += 1



                        df.close()


        #go into CD channel and take an average of the values in the array
        os.chdir(cwd1)
        os.chdir(cwd1+"/bbx/CD")
        cwd4 = os.getcwd()
        i = 0

        lst = os.listdir(cwd4)
        lst.sort()

        for filename4 in lst:
                if filename4.endswith(".bbx.gz"):
                        df = bbx.LofasmFile(os.path.join(filename4))
                        df.read_data()


                        countbinCD[i] = np.average(df.data, axis=0)
                        print(filename4 + " avg bin added to array")

                        i += 1



                        df.close()


        #save/plot the output
        os.chdir(cwd1)

        filesv = filei[:-1]

        np.save(str(filesv)+’outputbinCC’, countbinCC)

        np.save(str(filesv)+’outputbinDD’, countbinDD)

        np.save(str(filesv)+’outputbinCD’, countbinCD)



#user input, and set up appropiate folders
mn = input(’How many days would you like to process?\n’)
d={}
for i in range(mn):
        x = input(’Input the dates of files you are looking at. I.E.: "20190617"\n(The date wi
ll only be used as an identifier for output files)’)
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        d['date'+str(mn+1)] = x
        fname = str(x)
        if not os.path.exists(fname):
                os.mkdir(fname)
                print("Directory ", fname, " created")
        else:
                print("Directory ", fname, " already exists")


#download
for filei in glob.glob("*/20"):
        v=1
        os.chdir(filei)
        cw=os.getcwd()
        print("Day "+str(v)+"/"+str(mn))
        os.system("rclone copy lofasm:shane/"+filei+" "+cw+" --drive-shared-with-me --progress
")


        n = len(glob.glob1(cw, "*.lofasm.gz"))
        loco(n)
        numpyf(n, filei)
        os.chdir("..")
        v+=1
```