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#!/usr/bin/env python
# -*- coding:Utf-8 -*-

import numpy as np
from math import *
from uncertainties import *
from uncertainties.umath import *
import matplotlib.pyplot as plt
from numpy.linalg import eig, inv
import os
import sys
from tkinter import *
import tkinter.filedialog
import matplotlib.pyplot as plt
from mpl_toolkits.mplot3d import Axes3D
from matplotlib import cm

def assign_valeurs():
N=int(e1.get())
l=[float(e2.get()), float(e3.get()), float(e4.get())]
print(N)
print(l)
print(basename[:-9])
intensite=script(N,l,basename[:-9])
return(intensite)
def script(N,l,chemin,w=1,plot3D = 0,v=0):
plt.clf
print("Début")
D=[]
fichier = np.loadtxt(chemin + '00000.txt')
Lambda = list(fichier[:,0])
I = np.zeros((N+1,len(Lambda)))
I[0]=np.array(fichier[:,1])
for k in range(1,N+1):
numero = (5-len(str(k)))*'0'+str(k)
nom = chemin + numero + '.txt'
fichier = np.loadtxt(nom)
I[k]=np.array(fichier[:,1])
if v==1:
print(k)
indice_lambda=0
for j in range(len(l)):
indice_lambda=Lambda.index(I[j])
if w ==1:
L = chemin.split('/')
cheminfichier = chemin.rstrip(L[len(L)-1])+ str(I[j]).replace('.',',')+'.txt'
fichier_écrit = open(cheminfichier,"w")
for i in range(1,N+1):
ligne = str(i)+' '+ str(I[i][indice_lambda]) + '\n'
fichier_écrit.write(ligne)

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n=100*float(j*N+i)/float((len(l)*(N-1)))  
print(str(n)+'%')
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fichier_ecrit.close()
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print("Fin")  
if plot3D ==1:  
X,Y = np.meshgrid(np.array(Lambda), np.arange(0,N+1),)  
fig = plt.figure()  
ax = fig.add_subplot(1,1,1, projection='3d')  
ax.plot_surface(X, Y, I,cmap=cm.gist_stern,  
linewidth=0.5, antialiased=True)  
# cset = ax.contourf(X, Y, I, zdir='x',rstrip = 8, cstrip = 8,cmap=cm.coolwarm)
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ax.set_xlabel('Wavelength (nm)')
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return()
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