7‐1.データ生成コード

S 湖データ：[リンク]

```
import numpy as np
import pandas as pd
import tkinter
import glob
import os
import re
import datetime as dt
from tkinter import filedialog
import matplotlib.pyplot as plt
from decimal import Decimal, ROUND_HALF_UP, ROUND_HALF_EVEN



# 小窓を表示させないための記述
root = tkinter.Tk()
root.withdraw()

# フォルダ選択
dir='C://**'
Path=filedialog.askdirectory(initialdir=dir)
files=glob.glob(Path + '/*.csv')


# index(時刻)を取得
date=[]
for f in files:
    # os.path.basename():ファイル名の取得
    # os.path.splitext():拡張子の直前の「.」で分割
    d,t=os.path.splitext(os.path.basename(f))[0].split('_')

    date.append(d+' '+t)

date=[dt.datetime.strptime(d,'%Y%m%d %H%M%S')+dt.timedelta(hours=9)for d in date]
```

```
# データの読み込み
maxwd=6 # 最大水深
col=('depth','temp','EC','pH','ORP','DO','Chla','Trub','DO%')
uses=np.arange(len(col))
flame=pd.DataFrame({'depth':np.arange(0,maxwd+0.1,0.1)})
temp=np.arange(0,maxwd+0.1,0.1).reshape(len(flame),1)

EN=[]   # File number where the error occurred




for i,f in enumerate(files):

    try:
        df=pd.read_csv(f,skiprows=1,delim_whitespace=True,header=None)
        df.columns=col

        ly=df['depth'].values

        # 小数点第 1 位四捨五入
        r_ly=[float(Decimal(l).quantize(Decimal('1e-1'), rounding=ROUND_HALF_UP)) for l in ly]
        df['depth']=r_ly

        # 重複除去
        result=df[~df.duplicated('depth',keep='last')]

        # データ整形
        arr=pd.merge(flame,result,on='depth',how='left')
        arr.interpolate(limit_area='inside',inplace=True)
        temp=np.append(temp,arr['temp'].values.reshape(len(arr),1),axis=1)
    except pd.errors.ParserError as e:   # 以下例外処理

        print(e)
        EN.append(i)

        # names=col  で項目名を指定すると Error 解消
        df=pd.read_csv(f,names=col,usecols=uses,skiprows=1,delim_whitespace=True,
                                header=None)

        # try:と同様
        ly=df['depth'].values
        r_ly=[float(Decimal(l).quantize(Decimal('1e-1'), rounding=ROUND_HALF_UP)) for l in ly]
        df['depth']=r_ly


        result=df[~df.duplicated('depth',keep='last')]



        arr=pd.merge(flame,result,on='depth',how='left')
        arr.interpolate(limit_area='inside',inplace=True)
        temp=np.append(temp,arr['temp'].values.reshape(len(arr),1),axis=1)

print('finished')
```