pyAtmosLogger software for logging THIES LPM disdrometer data

Version	Editor	Date
1	Lukas Pfitzenmaier	24.01.2024
2	Jean-Charles Dupont	08.02.2024

Plan

1. Specific installation for WINDOWS machine

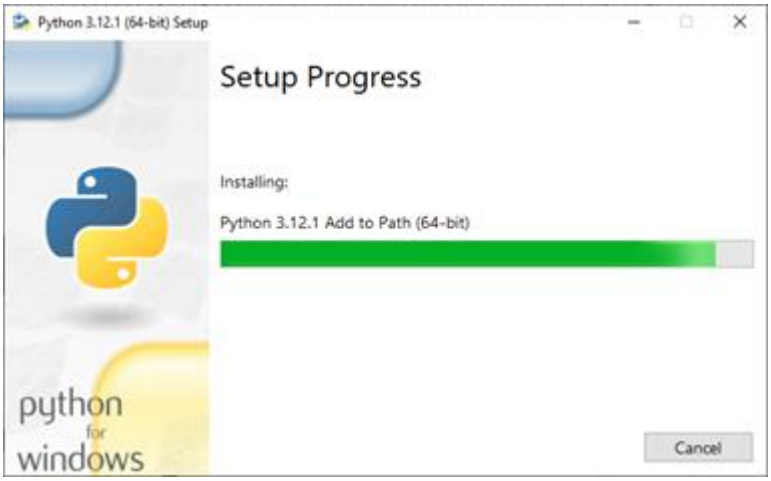
1.1. Installation of Python 3

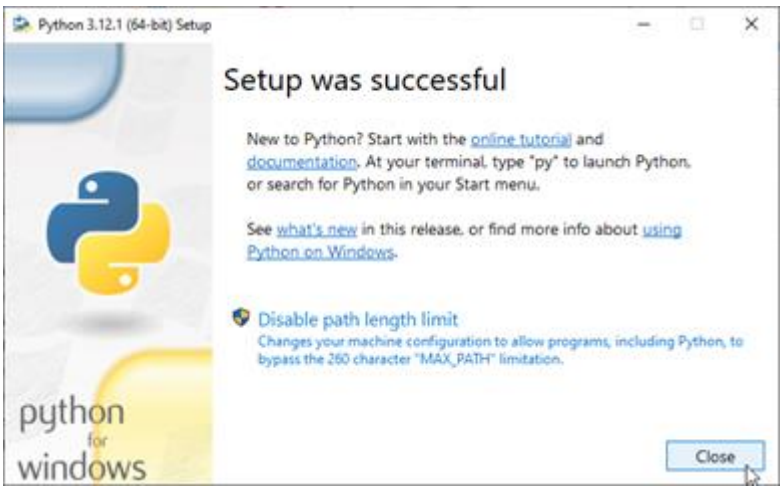
Python is one software useful for using the *pyAtmosLogger* software

Download python 3 on the web site : https://www.python.org/downloads/

Run executable file : **`python-3.12.1-amd64.exe`**

Click on Install now





Click on close

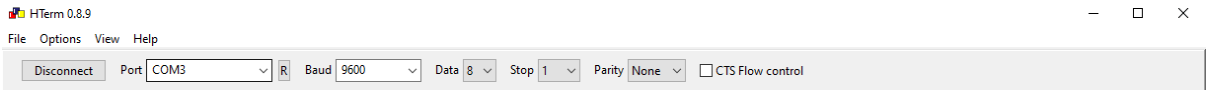
Pip (Package Installer for Python) is installed with python package

1.2. Installation of one communication terminal

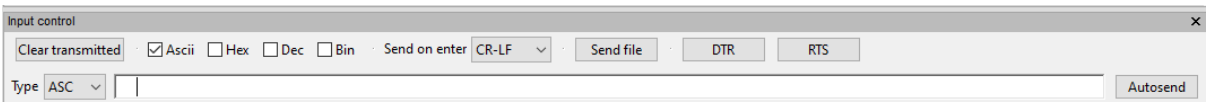
Download Hterm on the web site :
https://www.der-hammer.info/pages/terminal.html
HTerm – is a free HyperTerminal software that is useful for changing settings of the Disdrometer using the communication commands

Here is the header of the Hterm software:

Filled with the correct Port, Baud, etc.



NOTE 1: Commands are sent in HTerm by pressing "**ENTER**" not using the AutoSend button.
NOTE 2.: Please select the "**CR-LF**" for the "send on enter" option.



1.3. Configuration of disdrometer with hyperterminal

Set in the Hterm the right COM-port the Baud-rate of the THIES LPM. Then you can connect and use the window in the Input control to change settings. Change the settings of the THIES LNM as below :

- **00ky00001** - Activates the configuration modus
- **00TM00000** - De-activates the automatic data sending of the THIES LPM
- **00ky00000** - De-activates the configuration modus

For a short test if the configuration is working send **00TR00004** to the Thies. In the terminal immediately the output of the pulled data should appear.

1.4. Installation of the pyAtmoslogger software

pyAtmosLogger software is usefull for logging THIES disdrometer data
Open a terminal with the command `Win+r and cmd`
Run de command `py –m pip install pyAtmoslogger` in the terminal
Normally pyAtmosLogger is automatically added to windows environmental variables
https://www.architectryan.com/2018/03/17/add-to-the-path-on-windows-10/

2. Specific installation for LINUX machine

2.1. Installation of Python 3

Open a Command Prompt and run the command `py –m pip`

2.2. Configuration of disdrometer with command prompt

Configure the disdrometer with the command prompt as below:

- **00ky00001** - Activates the configuration modus
- **00TM00000** - De-activates the automatic data sending of the Thies
- **00ky00000** - De-activates the configuration modus

For a short test if the configuration is working send **00TR00004** to the Thies. In the terminal immediately the output of the pulled data should appear.

2.3. Installation of the pyAtmoslogger software

Open a Command Prompt and run de command

```
py –m pip install pyAtmoslogger
```

3. Configuration of pyAtmosLogger

A *pyAtmosLogger* configuration file is usefull for logging your THIES disdrometer data

Create and customize configuration.yaml (use notepad++ to write this file) as below :

```
instrument:
  instrumentFile: thies_laserprecipitationmonitor_actris.py
  samplingInterval: 60
  port: "COM3"
  baudrate: 9600
  bytesize: 8
  parity: "N"
  stopbits: 1
storage:
  csvStoragePath: "C:\\data\\thies_pyAtmosLogger\\csv"
  DatePath: "\\"
  csvFileName: "%Y%m%d_city_station.csv"
```

Choose the correct port, baudrate, etc. for your THIES LNM disdrometer.

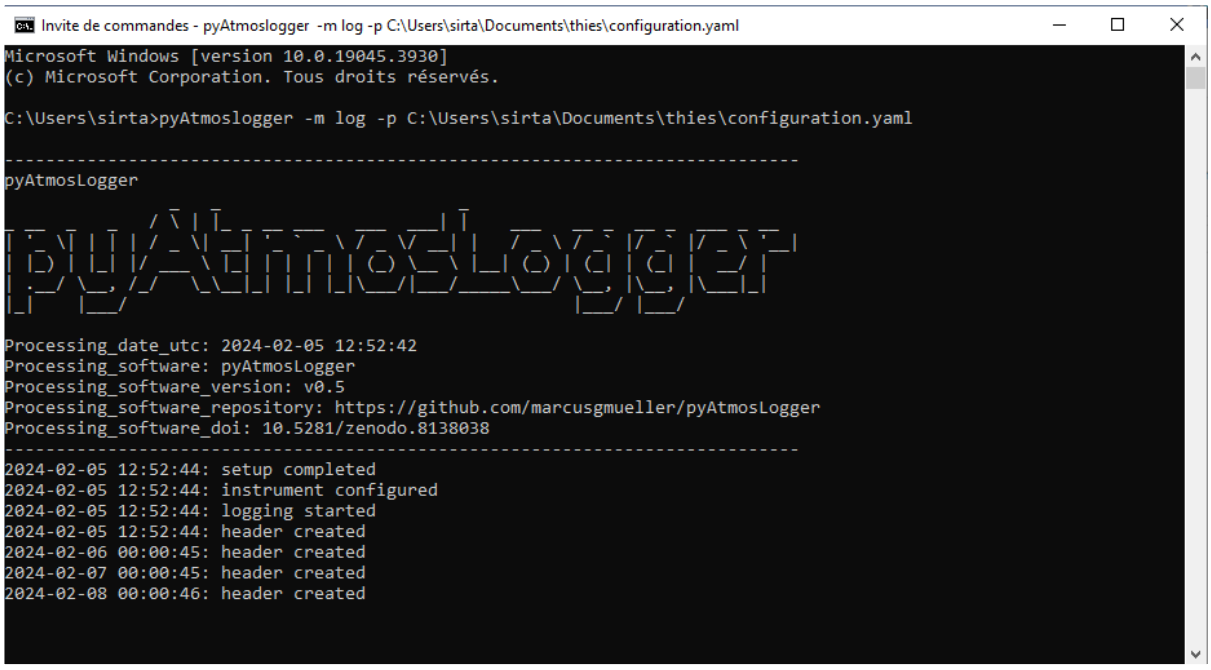
4. Running of pyAtmosLogger software

- **Check the PC time**. It should be set to UTC. pyAtmosLogger.py is using the PC time to create the time stamp. If the PC is not running in UTC the time stamp will be wrong!
- Starting pyAtmosLogger:
    - Open a Command Prompt and run the command

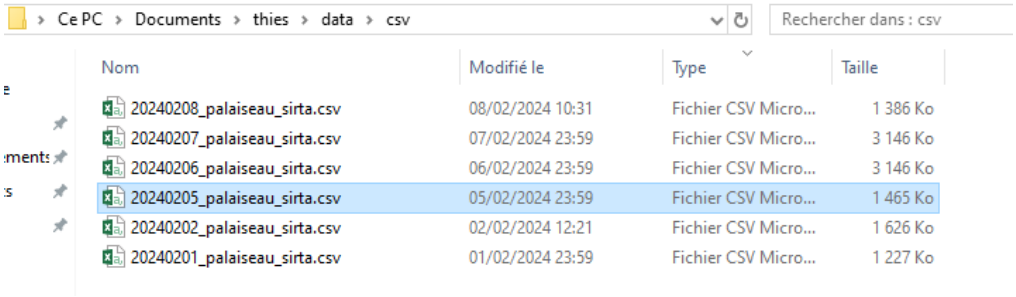
```
pyAtmosLogger -m log -p C:\\config_path\configuration.yaml
```

    - The start of the program defines the start of the recording! So make sure you start pyAtmosLogger as close as possible to the full minute
- Check the data in the output directory
- For continuous recording of the data the Command Prompt should not be closed
- Stop the recording by typing: **`Command + C`** into the Command Prompt

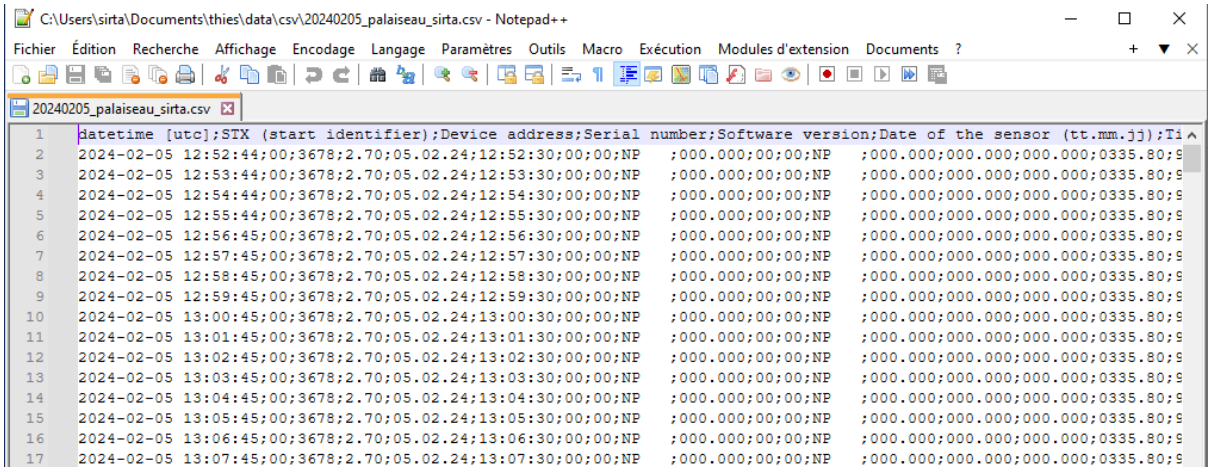
Here is a print screen of the Command Prompt



The daily disdrometer "*.csv" files will be like below :



The daily disdrometer "*.csv" files are composed as below :



5. Not to do

You should never open the Excel file that is being acquired with Excel to check if the data is there.

Because it will crash the acquisition system or the file will be empty or not filled.

It is recommended to use another tool such as Notepad++ or other.