Plateforme_lidar

Installation :

1. Install plateforme_lidar module :

add plateforme_lidar directory path to PYTHONPATH

2. Install required modules :

```
pip install -r .\plateforme_lidar\requirements.txt
```

3. Install laspy and pylas :

```
python .\plateforme_lidar\laspy\setup.py install
python .\plateforme_lidar\pylas\setup.py install
```

4. Useful software :

- Make sure that you have downloaded CloudCompare to use plateforme_lidar.cloudcompare.py
  Add path to cloudcompare.exe in plateforme_lidar.utils.py (dictionnary QUERY_0)
  Add path to PoissonSurfaceReconstruction.exe to use it in plateforme_lidar.utils.py (dictionnary QUERY_0)
  See more : http://www.cloudcompare.org/
- Make sure that you have downloaded OSGEO4W to use plateforme_lidar.gdal.py
  Add OSGEO4W in your environment variable
  See more : https://trac.osgeo.org/osgeo4w/

Basic Usage

Reading / Writing LAS file :

- .las / .laz without waveform packet : use lastools.readLAS_laspy() or lastools.readLAS()
- .las / .laz with waveform packet : use lastools.readLAS_laspy() only

```
>>> from plateforme_lidar import pl
>>> workspace="D:/yourDirectory/"
>>> dataset = pl.lastools.readLAS(workspace+"inFile.laz")
>>> intensity = dataset.intensity
>>> numberOfPoints=len(data)
...
>>> addFieldList=[(("addField1","float32"),extraField1),
(("addField2","uint8"),extraField2)]
>>> pl.lastools.writeLAS(workspace+"outFile.laz",dataset,extraField=extraField)
```

Reading, viewing and filtering fwf LAS file :

```
>>> from plateforme_lidar import pl
>>> workspace="D:/yourDirectory/"
>>> dataset = lastools.readLAS_laspy(workspace+"inFile_fwf.laz")
>>> waveforms = lastools.readWDP(workspace+"inFile_fwf.laz",dataset)
>>> indexPoint=99
>>>
pl.lasfwf.viewerFWF(pl.lastools.Filter_LAS(dataset,indexPoint),waveforms[indexPoin
t])
>>> listPoints=[12,102,30]
>>> dataExtract=pl.lastools.Filter_LAS(dataset,listPoints)
>>> waveExtract=pl.lastools.Filter_WDP(waveforms,listPoints)
>>> pl.lastools.Update_ByteOffset(dataExtract,waveExtract)
>>> pl.lastools.writeLAS(workspace+"outFile_fwf.laz",
dataExtract,format_id=4,waveforms=waveExtract)
```