

## NERC-ARF Workshop 2018: Radiative Transfer practical using Py6S

This readme file explains how to get the **Py6S** practical session running. This training has been designed using **Jupyter Notebook** to give any user the freedom to use the Py6S model even if they are not familiar with programming languages. You can come back to this training tool any time after the workshop and continue practicing or creating new scripts. In a similar way, you can skip some of the exercises proposed and come back to them later.

Using the VM downloading script:

1) If you downloaded all the practicals sessions via the VM downloading script, the practical sessions will be placed in a default path and unzipped. Alternatively, you will have to download the practical session and unzip its content

2) Open a new terminal

3) In the new terminal, go to the path of the new unzipped directory. To go to the default path you have to enter the command in the terminal:

```
cd ~/nerc-arf-workshop/Py6S_practical
```

and press enter. If you did download the practical session separately into a different location and can't find the path of the new dir; let us know and I will help you.

4) Once in the right directory, enter in the terminal:

```
jupyter notebook
```

5) That will open a web browser with the content of the directory. Click in:

```
"Py6S_practical_session.ipynb"
```

And start the training.

**Note:** If during the practical session, PySpectra is throwing an error (related to "skiprows" no longer available in numpy) you have an outdated version of the Virtual Machine. If you downloaded the VM after Tuesday 6<sup>th</sup> March 2018, you probably will not have the error. Please open a terminal and run the following commands:

```
git clone https://github.com/pmlrsg/PySpectra.git; cd PySpectra  
sudo /opt/miniconda3/bin/python setup.py install
```

This will ask you for a password, use: Cambridge2018

Once the code has been updated you need reload the PySpectra module. To do so, you will have to write on the top of your code:

```
reload(PySpectra)
```

or you can just close the jupyter notebook and open it again by following the steps on the top.