ESOpy 3.0
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Installation requirements for the camp

The camp will be entirely given in python 3.7. Therefore you need to have it installed when you arrive at the workshop. It goes the same for the libraries that we will use. The library that will be used are:

-First day: Standard library (comes with python installation, no need for you to install extra libraries), matplotlib, catscii

-**Second and third day:** Astropy, numpy, scipy, PyMc, dfitspy

If you already have everything installed with the right version of python then you can skip the rest of the document.

if not you have to install ***Anaconda***. ***Anaconda*** is a python distribution that allows you to create ***closed*** python environnement so you do not mess you original installation up. And the good thing is that it comes will (almost) all the libraries we will need for the camp.

We describe below the installation process for linux, mac and windows.

1-Installation of Anaconda

WARNING: The installer will put anaconda in your PATH. Therefore it will become your default python. I strongly suggest to remove it from your PATH at the end of the installation of the package (see the end of the document).

In order to install Anaconda you will need to download it. The installation instructions are given there in the links below. Please take the **python 3.7** installer.

For windows : https://docs.anaconda.com/anaconda/install/windows/
For linux : https://docs.anaconda.com/anaconda/install/linux/
For macOS : https://docs.anaconda.com/anaconda/install/mac-os/

While you install anaconda, **please note the installation directory.**

2-Setting up the environment

Once the installation is over, we create a python environment using, in a terminal:

```
/path/to/anaconda_directory/bin/conda create -n py37 python=3.7
anaconda
```

This create a python 3.7 environment called py37.
To activate this environment you write:

```
source activate py37
```

In this environment you can type 'python' you will get the python shell.
The first line should start with:

> *Python 3.7.1 (default, Dec 14 2018, 19:28:38)*
> *[GCC 7.3.0] :: Anaconda, Inc. on linux*
> *Type "help", "copyright", "credits" or "license" for more information.*
> *>>>*

Which means you are using the python from anaconda.
In this shell try to import the following packages.

```
import numpy, scipy, matplotlib
```

If you have no error then you are all good.

b-Extra packages needed for the camp

Install the extra packages from within the environement py37 just created.

For the camp we will need few extra packages to be installed: aplpy and pymc. Two methods can be used: PIP and conda. Choose one of the following!

USING PIP:

'pip' is a package management tool for python. It is included in anaconda but it is first of all the python standard tool to install python packages. It queries the python official repository (pypi).

To use it three basic command are very useful :

pip install + package name (to install a package)
pip search + something (to search in the python repository)
pip uninstall + package (to remove the package)

To make sure you are using the pip from Anaconda you can write *'which pip'*. This will give you the path of the pip binary. If it is pointing to your anaconda environment (in my case `/home/romain/anaconda3/envs/py37/bin/`) then you are good to go. Then execute:

If not you can just using the binary with the full path. In my case it is:

```
/home/romain/anaconda3/envs/py37/bin/pip install astropy
/home/romain/anaconda3/envs/py37/bin/pip install astroquery
/home/romain/anaconda3/envs/py37/bin/pip install dfitspy
```

Still in your environment, you can enter into ipython and import them as above. If you do not have an error then everything is fine and you are ready for the camp. For one of the project the package 'astroquery' will be needed. You can install it the same way.

USING CONDA:

The 'conda' command comes with the Anaconda distribution (and therefore not available with your native installation of python). It is worth noting that not all python package are part of anaconda.

To install the two extra packages you can write as follows:

```
conda install -c astropy astropy
```

Still in your environment, you can enter into ipython and import them as above. If you do not have an error then everything is fine and you are ready for the camp.

To exit the anaconda environment:

```
source deactivate py37
```

From here, if you want to return to your default python just remove anaconda from your path (from your .bashrc file) and you will come back to your default python installation.

LAST, BUT NOT LEAST: If you have any problem installing python, please tell us in advance and we will try to help you. We will not do python installation fixing during the camp!