Lectures of the IMPRS on Gravitational-Wave Astronomy in Potsdam

Making sense of data: introduction to statistics for gravitational-wave astronomy

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Installing a working environment (Jupyter Lab) for Python

1) Install the Anaconda Packet Manager on your laptop
(https://www.anaconda.com/distribution/) Please keep in mind that the Conda-Setup has to fit your operating system (LIN/WIN/MAC - 32bit/64bit). Please install Python only in Version 3 and fill all checkboxes!

2) The command **conda - -help** should be available in a Terminal/CMD/BASH after the setup. Create a **Virtual Environment** within conda which will be your working environment. The command is: **conda create -n py3.6 python=3.6 numpy scipy matplotlib pandas**

3) Now activate your working environment with the command: **conda activate py3.6**
when active, the beginning of the line will change e.g. **(py3.6) Laptop-xyz:....$** where **(py3.6)** is the name of the working environment.

4) In the virtual environment we can now use PIP (the package installer for Python) to install more software, command: **pip install - - upgrade pip**

5) To work efficient and uncomplicated we will use **JupyterLab** (https://jupyter.org/
https://jupyterlab.readthedocs.io/en/stable/) command: **pip install jupyterlab**.

6) We will need a working PYSTAN installation. This is available to pip install, but there appear to be some compatibility issues with the most recent version of the software. These appear to be avoided by using conda to install the package instead: conda install -c conda-forge pystan .

7) Also install the following packages:

1. SEABORN: pip install seaborn
2. CORNER: pip install corner
3. STATSMODELS: pip install statsmodels

Test your setup after the installation: start a jupyter lab instance (type: **jupyter lab** in the terminal) and open a new Python3 notebook. Go to the first cell and type **import numpy as np** confirm by pressing the **SHIFT+RETURN** Keys
Make sure that these imports work without errors.

8) To end the working environment: **Save** and close the Browser-Tab of JupyterLab,
in the CMD/Terminal/BASH press the **CTRL+c** Keys and confirm with **Y**.

Than deactivate the virtual environment by: **source deactivate** or **conda deactivate**.
To start working again go back to step 3) (activating your working environment)