Jupyter NoteBook

Introduction

Jupyter Notebooks are executable documents containing: **formatted text**, **formatted maths**, chunks of **code** plus **figures**, **tables** and textual output generated by that code. Notebooks can be used:

- to develop and execute linear data analysis workflows
- to present linear workflows to others;
- to share presentation or research results
- as teaching materials

Jupyter itself is **web application** that interprets, runs and renders Notebooks. User just connect to the web interface and interact with it.

Components

The Jupyter Notebook combines three components:

1. **The notebook web application**: An interactive web application for writing and running code interactively and authoring notebook documents.
2. **Kernels**: Separate processes started by the notebook web application that runs users' code in a given language and returns output back to the notebook web application. The kernel also handles things like computations for interactive widgets, tab completion and introspection.
3. **Notebook documents**: Self-contained documents that contain a representation of all content visible in the notebook web application, including inputs and outputs of the computations, narrative text, equations, images, and rich media representations of objects. Each notebook document has its own kernel.
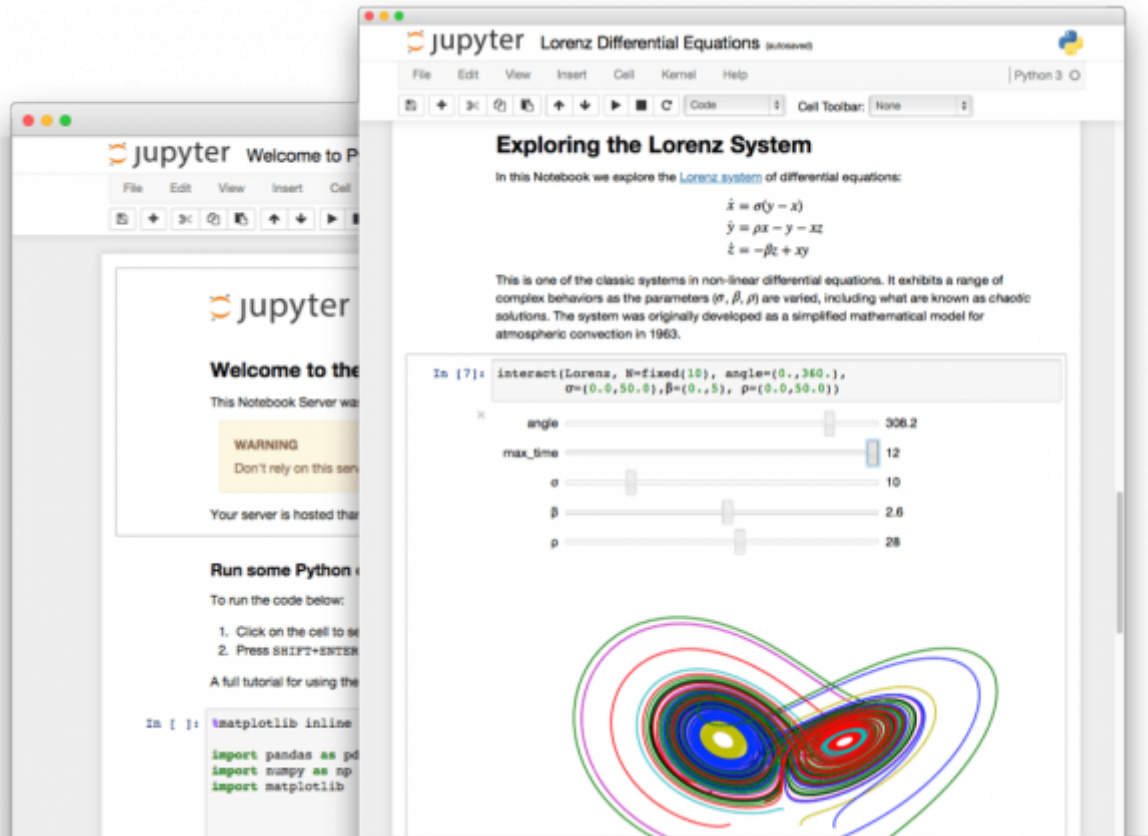
Using Jupyter on MesoFC
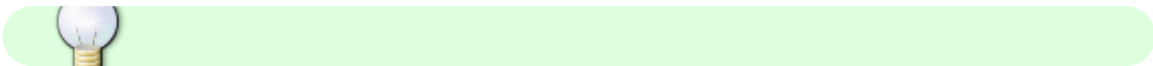
- Jupyter `version 4.4` is installed with `Intel Python 3.5`. A lot of populars python modules are available (panda, fftw, matplotlib, …)
- availabe kernels :
  - Python3
  - Bash
  - Tensorflow with Python2 under Singularity container

1. Connecting to JupyterHub, requesting resources (RAM, processors, GPUs) for your Jupyter session, and starting your session
2. Jupyter file browser
3. Terminal in your browser
4. Creating, editing and running Jupyter Notebooks
5. Monitoring and controlling your Jupyter session
6. Custom conda environment within a notebook

Links

- http://jupyter.org/ official site
- http://jupyter-notebook.readthedocs.io official documentation
- https://nbviewer.jupyter.org/ collection of notebooks
- https://github.com/jupyter/jupyter/wiki/A-gallery-of-interesting-Jupyter-Notebooks

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