Introduction to Python

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Introduction

In the coming three lectures I will give an introduction to the use of Python in scientific computing. During the first two lectures I will cover the core of the Python language. In the last lecture the basics of numpy, scipy and matplotlib (if time permits) will be addressed.

I   Python distribution

During the lectures I will be using the Anaconda Scientific Python distribution. The distribution can be downloaded from here.

If you plan to attend the lectures you **must** install the Anaconda distribution **before** the start of the first lecture. Due to time constraints we do not have time to do the installation in class. If you face a problem with the installation, please send an email to the CHPC Helpdesk (Subject of the email: Anaconda install).

II   When/where?

All Python lectures will take place in the INSCC building from 1.00 pm to 3.00 pm

- Mon. 09/15/2014 Rm. 407 (a.k.a. INSCC Training Lab)

- Mon. 09/22/2014 Rm. 345

- Wed. 10/01/2014 Rm. 105 (a.k.a. INSCC Auditorium)

III   Topics to be covered

- Introduction to IPython

- Why Python?

- Variables, assignments, operators

- Control structures

- Functions

- Modules

- Standard library

- Exceptions

- Object-Oriented programming in Python

- . . .

- Numpy, Scipy & a taste of Matplotlib (if time permits)

IV   Useful links

- Online Tutorials:

  - ⋆ https://docs.python.org/2/
  - ⋆ http://www.numpy.org/
  - ⋆ http://www.scipy.org/

- Books

  - ⋆ Python Essential Reference [1]
  - ⋆ . . .

- IDEs

  - ⋆ Spyder
  - ⋆ Eclipse (You need to install the Python plugin)
  - ⋆ PyCharm (The Community Edition is free)

  The Spyder IDE is installed within the Anaconda distribution and will be introduced during the class.

References

[1] David M. Beazley. *Python Essential Reference (4th Edition)*. Addison-Wesley Professional, 2009.