Open Source: Tools for Physics

Seminar 3

Introduction to Python

About Me
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 Sbozzolo

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 Sbozzolo

. . . and GNU/Linux enthusiast!

Premise
Law of the instrument

If all you have is a hammer,
everything looks like a nail

Why Python?

- Simple to learn and to use
- Write code faster and more readable (easy to maintain)
- Extreme popularity (documentation, modules, google, . . .)

Python diffusion

	Before
Simulation	C, Fortran
Scripting	Bash, Perl
Data Analysis	Matlatb, R
Symbolic	Mathematica

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Python diffusion

Some features

- Interpreted (byte-compiled) (scriptable)
- Not typed
- Object Oriented, imperative, or functional
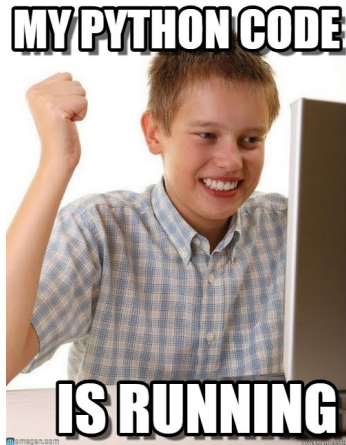- Portable
- Very good documentation (docs.python.org/3)

A Python motto

It is easier to ask for forgiveness than for permission.

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The price for simplicity

- Python is usually 3-10 times slower than C/Fortran
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- Julia is a Python-like language with performances comparable to C's (it might become popular in physics)

Python interpreters

- Command Line
- IPython
- …

Python 2 or Python 3?

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Python 3.

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Python 3.
(`#!/usr/bin/env python3` in your scripts)