Viviane Pons

Maître de conférence, Université Paris-Sud Orsay
viviane.pons@lri.fr – @PyViv

SageMath

Introduction

Welcome!

This morning is the launching event of *Sage Days 82 - Women in Sage*, a week workshop for women in Sage.

SageMath is a free open source mathematics software

- Created in 2005 by William Stein.
- http://www.sagemath.org/
- Mission: *Creating a viable free open source alternative to Magma, Maple, Mathematica and Matlab.*

- ▶ the main language of Sage is **python** (but there are many other source languages: cython, C, C++, fortran)
- ▶ the source is distributed under the GPL licence.

One of the original purpose of Sage was to put together the many existent open source mathematics software programs: Atlas, GAP, GMP, Linbox, Maxima, MPFR, PARI/GP, NetworkX, NTL, Numpy/Scipy, Singular, Symmetrica,...

Sage is **all-inclusive**: it installs all those libraries and gives you a common python-based interface to work on them.
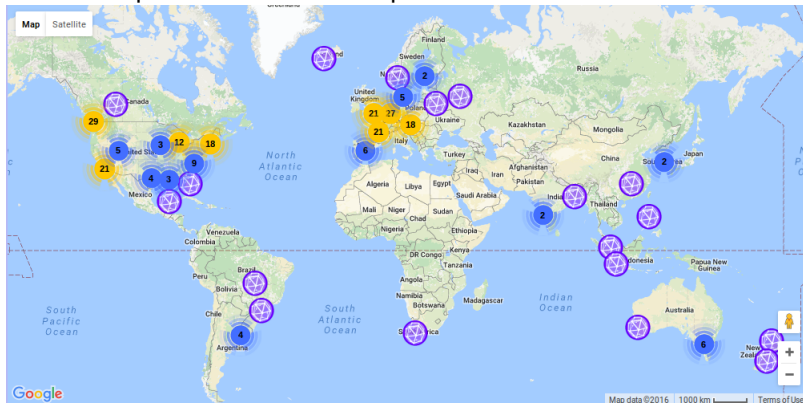
On top of it is the python / cython Sage library it-self.

Development model

► **Sage is developed by researchers for researchers:** the original philosophy is to develop what you *need* for your research and *share* it with the community.

► The first full-time Sage developer has been recruited last January at Paris-Sud university by the OpenDreamKit project.

► The code is maintained through a git repo with a system of tickets and peer-review for new contributions: http://trac.sagemath.org/

The Sage community

268 developers in 182 different places.

Mailing lists, Sage days

What can I do with Sage?

Number theory, combinatorics, graph theory,...
Most things: *Calcul Mathématique avec Sage*

How can I use it?

- ▶ native install on Linux and Mac
- ▶ install through a virtual machine on Windows
- ▶ online on **SageMathCloud**

SageMathCloud

SageMathCloud is an online open-source **platform** where you can use Sage and more.