

Welcome and Technical Setup

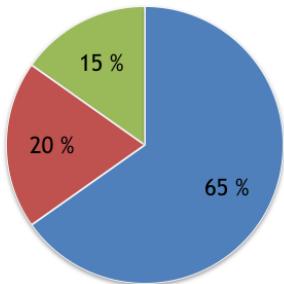
GRK Python Workshop, 14.10.2019

Frank Sauerburger, Manuel Guth

Welcome to the GRK Python Workshop

- 46 registrations

● PhD students
● Bsc/Msc Students
● Researchers



- All lectures and tutorials will take place in HS1 (highrise)
- We always start at 10 s.t. (to not collide with FP)
- Lunch breaks from 12h30 to 14h00

Indico page: <https://indico.cern.ch/event/846501/> (<https://indico.cern.ch/event/846501/>)

All updates slides etc. will be posted there

Timetable for the 3 Days Workshop

		14 Oct 2019	15 Oct 2019	16 Oct 2019
	AM			
	10:00	Introduction (until 12:30) (HS 1)	10:00 Numpy, matplotlib (until 12:30) (HS 1)	10:00 Symbolic programming, autodifferentiation - Lukas Alexander Heinrich (CERN) (until 12:30) (HS 1)
	10:00	Welcome & technical setup - Frank Sauerburger (Albert Ludwigs Universität Freiburg (DE)) Manuel Guth (Albert Ludwigs Universität Freiburg (DE)) (HS 1)	10:00 Lecture & Tutorial Numpy and Matplotlib - Maximilian Noethe (TU Dortmund) (HS 1)	10:00 Cython, numba, MPI - Lukas Alexander Heinrich (CERN) (until 16:30) (HS 1)
	10:30	General Introduction to Important Python Features - Manuel Guth (Albert Ludwigs Universität Freiburg (DE)) Frank Sauerburger (Albert Ludwigs Universität Freiburg (DE)) (HS 1)		
	12:30	--- Lunch break ---	12:30 --- Lunch break ---	12:30 --- Lunch break ---
	14:00	Test driven development (git/C/Docker/Tests) (until 18:20) (HS 1)	14:00 Numpy, matplotlib (until 14:30) (HS 1)	14:00 Cython, numba, MPI - Lukas Alexander Heinrich (CERN) (until 16:30) (HS 1)
	14:00	Introduction to GLIBC/Docker - Prof. Peter Thiemann (HS 1)	14:00 Lecture & Tutorial Numpy and Matplotlib - Maximilian Noethe (TU Dortmund) (HS 1)	
	15:00	Tutorial glibc/docker - Prof. Peter Thiemann (HS 1)	14:30 Scipy (until 17:50) (HS 1)	
	16:00	--- Coffee Break ---	14:30 Lecture & Tutorial Scipy - Maximilian Noethe (TU Dortmund) (HS 1)	
	16:20	Test driven development - Prof. Peter Thiemann (HS 1)	16:00 --- Coffee Break ---	16:20 Lecture & Tutorial Scipy - Maximilian Noethe (TU Dortmund) (HS 1)

Speakers



Prof. Dr. Thiemann
Uni Freiburg

- Testing
- Continuous Integration
- Git(Hub)



Maximilian Nöthe
TU Dortmund

- Scientific Programming
- Numpy
- Matplotlib
- Scipy



Lukas Heinrich
CERN

- Symbolic programming
- Autodifferentiation
- Cython/Numba
- MPI

Social event

- Common dinner
- Tuesday, 15. Oct, 18:45
- Goldender Sternen, Emmendinger Str. 1
- Need headcount for reservation



Technical Setup

Gitlab page

All the code will be posted also on this gitlab page: <https://gitlab.cern.ch/fsauerbu/grk-python-workshop> (<https://gitlab.cern.ch/fsauerbu/grk-python-workshop>)

You can checkout the repository via

```
git clone --recursive https://gitlab.cern.ch/fsauerbu/grk-python-workshop.git
```

The [README.md](https://gitlab.cern.ch/fsauerbu/grk-python-workshop/blob/slides-preparation/README.md) (<https://gitlab.cern.ch/fsauerbu/grk-python-workshop/blob/slides-preparation/README.md>) provides some setup tips

Technical Setup

We will use Python 3.7 for the tutorial

3 Different ways for the setup

- via Docker
- via Virtual Machine
- via manual installation with requirements file

We hope you all managed to have a running setup as distributed by Mail

Testing your setup

Script to test your setup is available [here](https://gitlab.cern.ch/fsauerbu/grk-python-workshop/blob/master/setup_test.py) (https://gitlab.cern.ch/fsauerbu/grk-python-workshop/blob/master/setup_test.py)

Please NOW everyone run this script to test the setup

Who has NO working setup?

Docker

The easiest way to run the code for the workshop is using a docker image via

```
docker run -it -p 8881:8881 grk2044/base-python:latest bash
```

if you want to make the current folder accessible within the image you need to mount it via `-v $(pwd) :<path-to-folder>`

To run a Jupyter Notebook within the Docker image, use the following command:

```
jupyter notebook --ip 0.0.0.0 --no-browser --port 8881
```

Virtual Machine

The virtual machine can be downloaded via this link <http://go.web.cern.ch/go/8Z8J> (<http://go.web.cern.ch/go/8Z8J>)

Easy way to run the VM is with [Virtual Box \(https://www.virtualbox.org\)](https://www.virtualbox.org)

Emergency Kits

- We have some guest account for Nemo where one can use singularity
- If nothing works, we have 2 laptops with the setup

In []: