

Introduction to EOAFRICA R&D facility and the innovation lab

face 2 face workshop Soil Moisture and Inland Water Monitoring with Satellite Radar

Dar es Salaam, Tanzania, 19th October 2023

Roelof Rietbroek, Paul Vermunt







Who are we?



Speakers:



DR. PAUL VERMUNT

Researcher – Department of Water Resources, Faculty ITC of the University of Twente

https://people.utwente.nl/p.c.vermunt

□ p.c.vermunt@utwente.nl



DR. ROELOF RIETBROEK

Assistant Professor – Department of Water Resources, Faculty ITC of the University of Twente

https://people.utwente.nl/r.rietbroek

☑ r.rietbroek@utwente.nl

This week



- Intro to the Innovation lab
- Soil Moisture (Tuesday and Wednesday)
- Radar altimetry (Thursday and Friday)
- Purpose: lower the barrier for you to work with satellite data

Today: get to know the Innovation lab



- What is Jupyter Lab?
- Cloning git repositories
- Taking control: Creating your own (conda) environment
 - Installing extra tools
- Some exploratory exercises
 - Using xarray? Rasterio?, (geo)-Pandas?

First assignment: team up



Rate you python skills:

1

< -- >

5



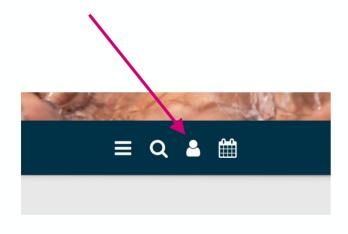
• Pair up while mixing your skills

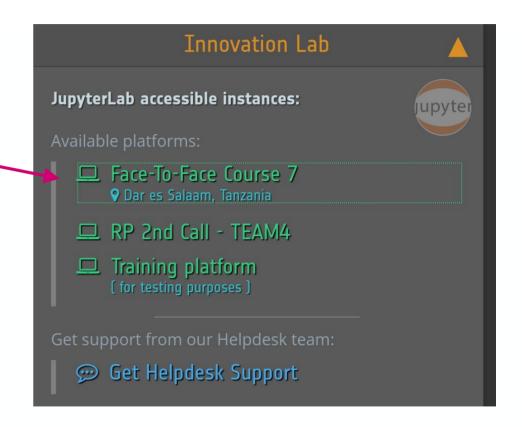


Log in to the innovation lab



https://www.eoafrica-rd.org/





What is in the folders?



- Explore the folders
- Where do you have write access?
- How can you share data with other participants?
- What are 'your' folders (i.e. not visible to others)?

Clone a git repo containing a Jupyterlab intro



Clone an EOAfrica repository with a Jupyterlab explainer

- Repository location (Courtesy: Longzhu Shen):
 https://github.com/EOAfrica/JupyterLab_Intro
- Two ways possible
 - Through the git extension
 - · Through a terminal
- Did you succeed?

Let's have a look at the Jupyterlab intro





Set up a conda/pip environment



- As a user you may find that some packages are not installed
 - Ask the admin? (takes a lot of time..)
- But you can also create your own local installation
 - Using Python venv module: light, but python packages only
 - Or using anaconda/miniconda: heavier but also allows installation of other packages
 - You can tell jupyterLab to grab your own environment instead of the existing one
- Let's try that...
 - But first clone another git repository

Exploratory assignment



- There is a lot of data in the eodata folder
- Pick a dataset of interest
- Use a notebook to create a plot of a datasets and document your findings
- Some python packages can be usefu:
 - Xarray
 - Rasterio
 - Matplotlib
- Share (copy) your notebook in the shared folder
- Explore a notebook from somebody else