Rook

A Web Processing Service for the Copernicus Climate Data Store

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Rook is a Bird

... but that is another story

Rook

Remote Operations On Klimadaten

(The K is not a typo)

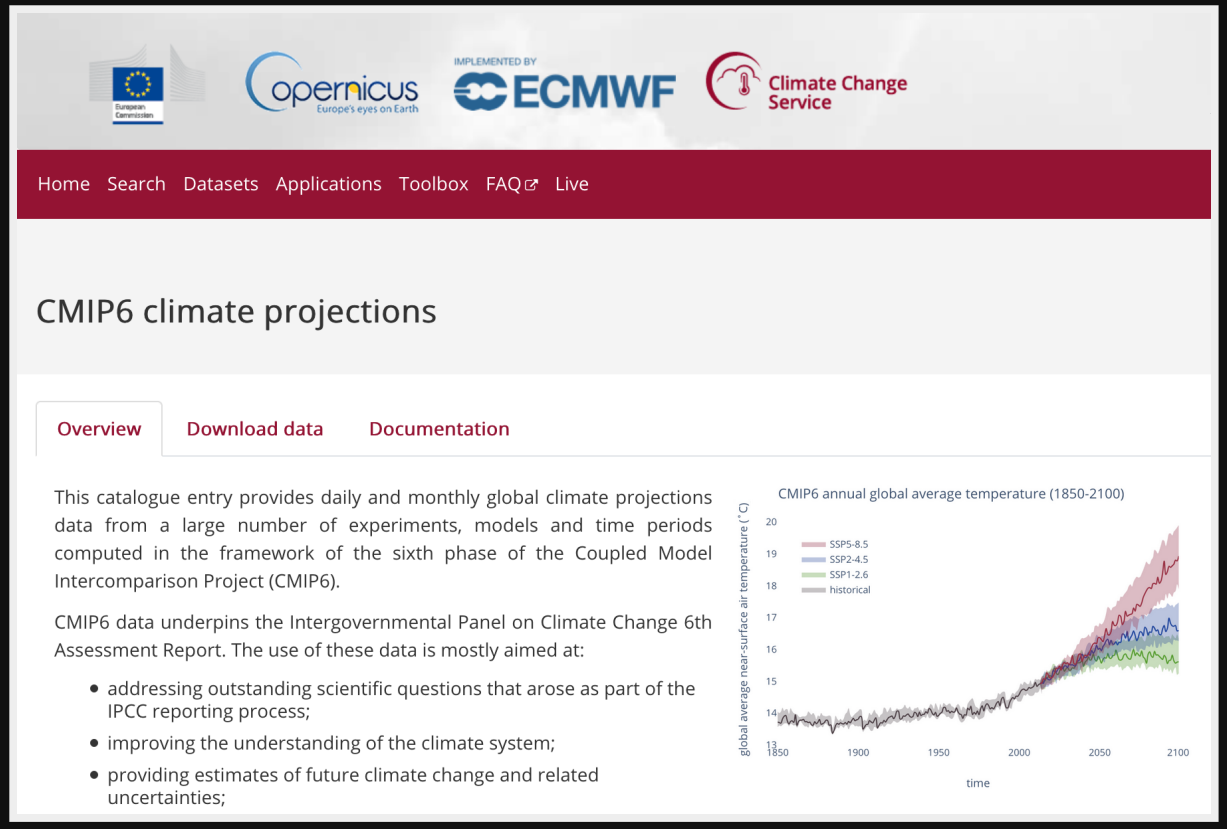
https://rook-wps.readthedocs.io/en/latest/

What?

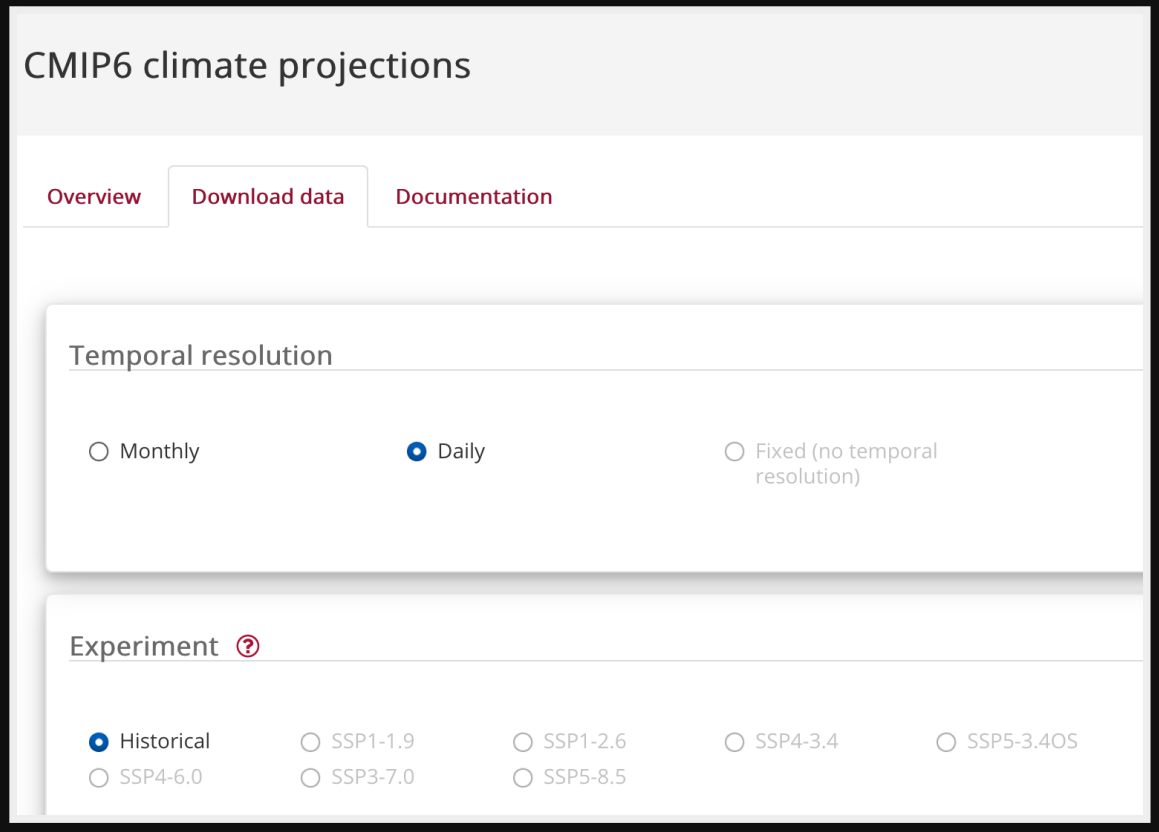
... wait

Two days ago

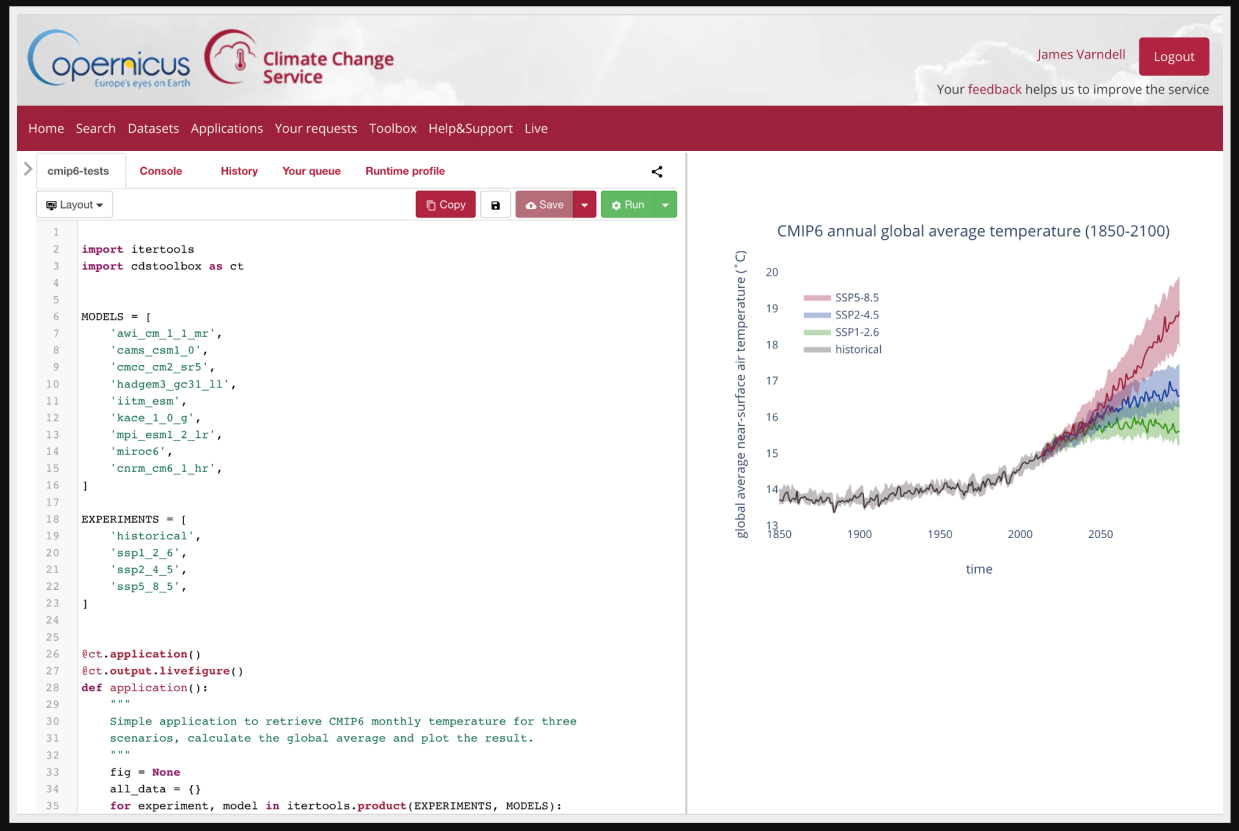
CMIP6 is now live!



Climate Data Store - Download data



Climate Data Store - Toolbox



Climate Data Store - Data?

The climate data is accessed remotely

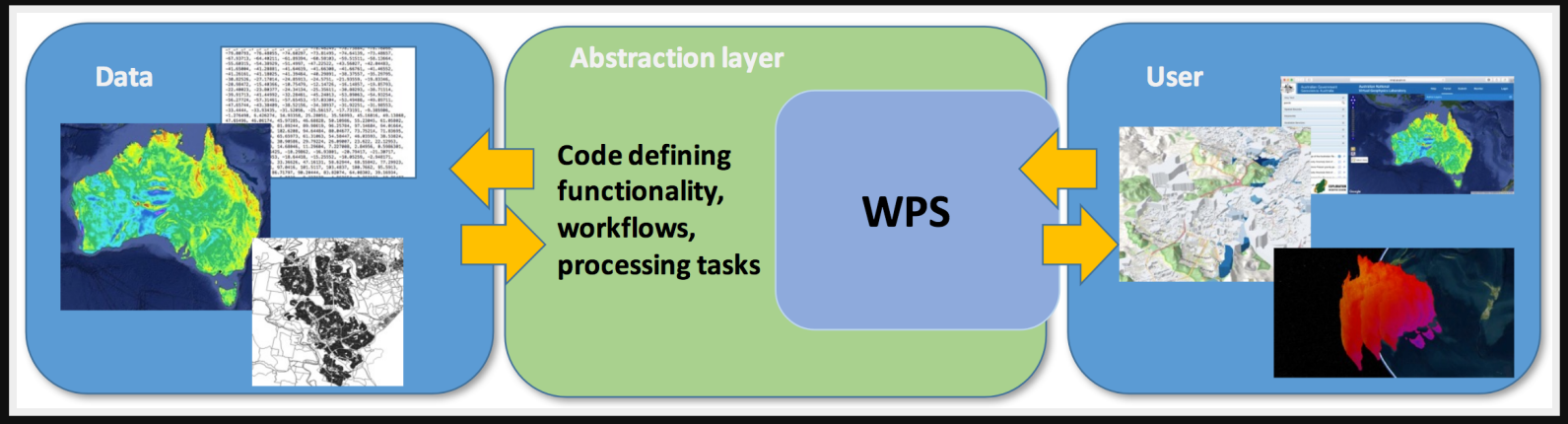
Remote data access

- Remote data pool for CMIP6, CMIP5, CORDEX
- Load-balanced data servers at three sites (CEDA, IPSL, DKRZ)
- THREDDS Data Server … but using only file access (not OpenDAP)

Climate data is big

- A single dataset may have several Gigabytes
- But you just want: Temperature, 1990, Africa

Web Processing Service



Call a function remotely

Rook - WPS

- An OGC Web Processing Service
- Using PyWPS - GeoPython
- Providing climate data operators as a service
- Used for data reduction: Temperature, 1990, Africa

Rook - Operators

- Subsetting - time, area, level
- Averaging - over dimensions (time, ...)
- Regridding (a pain!)
- ??? - can be extended

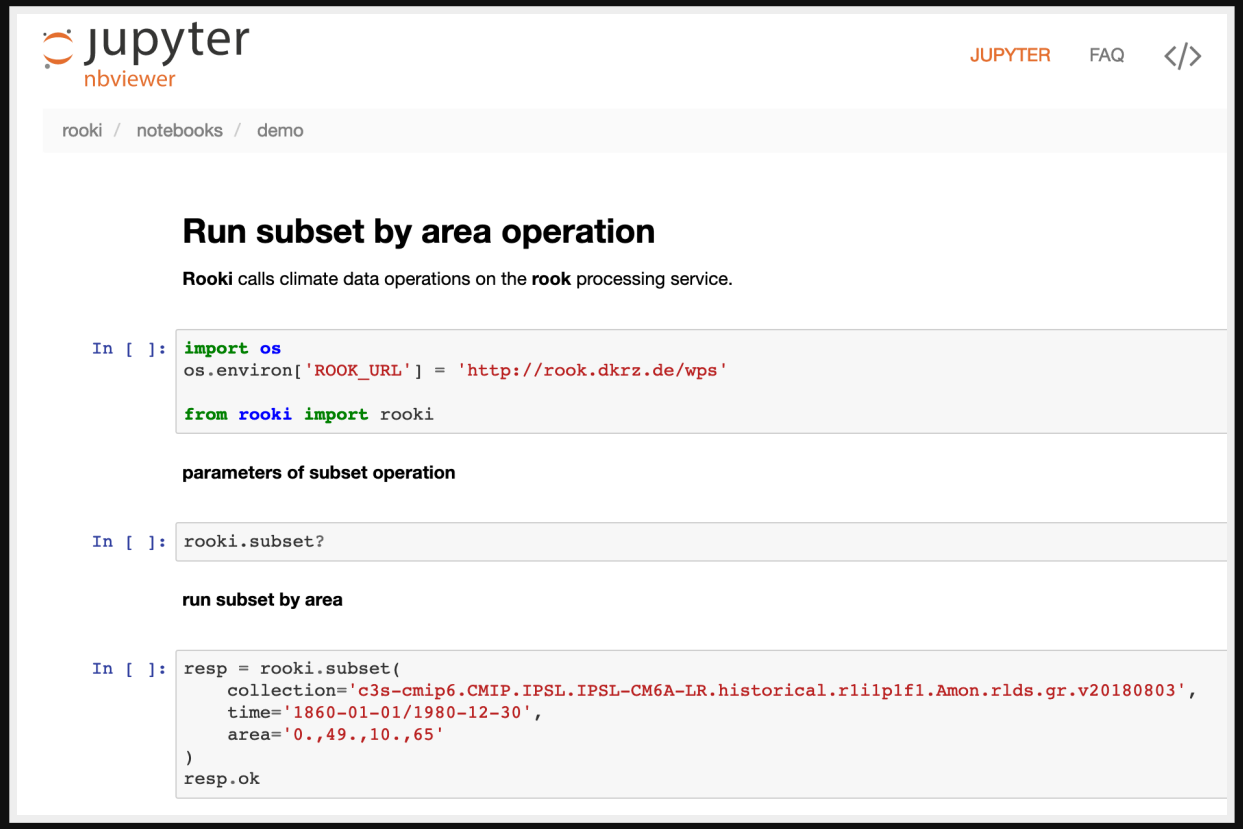
Rook - Clisops

- The Python library implementing these operators
- Using xarray - low level library
- Joint effort together with Ouranos https://clisops.readthedocs.io/en/latest/

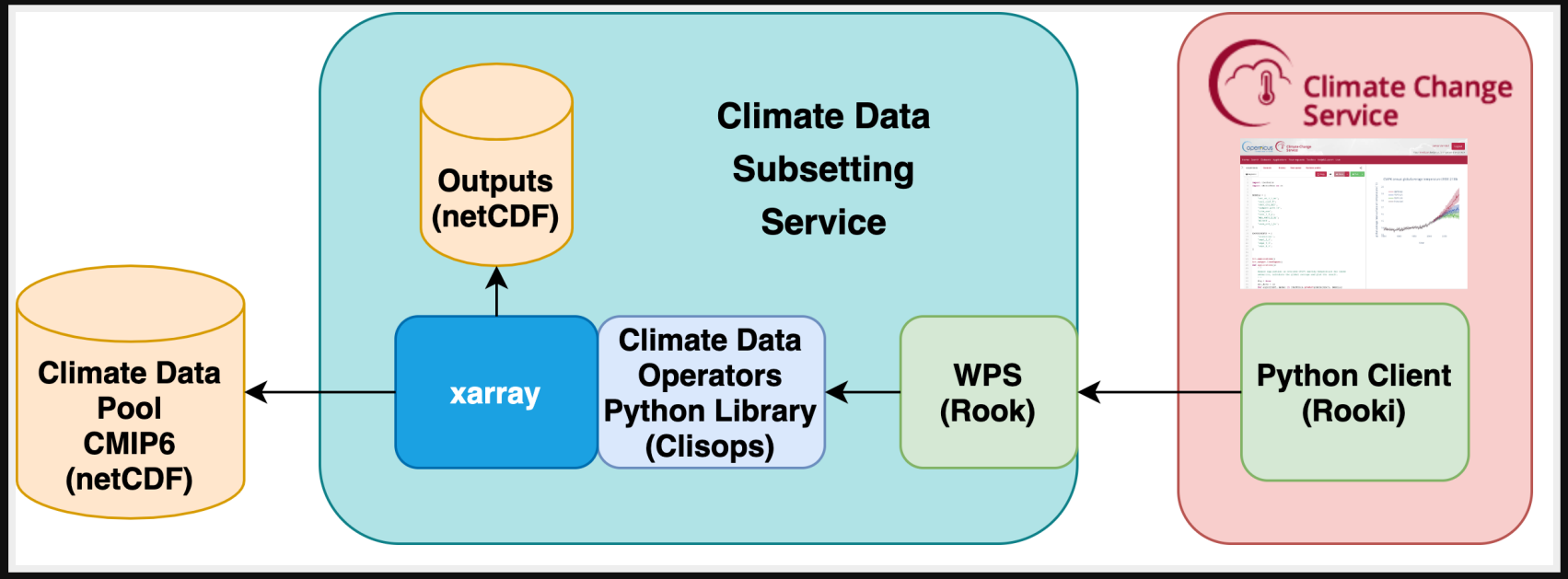
Rooki

- Python WPS client - interactive or as library
- Using OWSLib - GeoPython
- Joint effort with Ouranos (birdy)
- https://rooki.readthedocs.io/en/latest/

Rooki - Notebook



All together



Projects

- Coperniucs C3S: https://climate.copernicus.eu/
- Roocs: https://roocs.github.io/
- Birdhouse: http://bird-house.github.io/
- GeoPython: https://geopython.github.io/

Thanks

Questions?