

openEO:

- develops an open API to connect R, python, javascript and other clients to big Earth observation cloud back-ends in a simple and unified way
- currently targets back-ends: GeoPySparc, Sentinel Hub, file-based/OpenStack, GRASS GIS, WCPS, R, and Google Earth Engine
- has finished its first full API with a full process catalogue, which is now being implemented in back-ends
- is a H2020 project that runs until Oct 2020

openEO processes include

- data and process discovery
- pixel-wise operations
- functions to reduce dimensions
- functions to spatially and/or temporally aggregate pixel values
- support for user-defined functions, written in e.g. Python or R

data cubes

- involve discretisation of space and time, and other dimensions (e.g. spectral, sensor)
- may regularly discretise space (raster),
- ... or *irregularly* sample or tessellate space (vector)

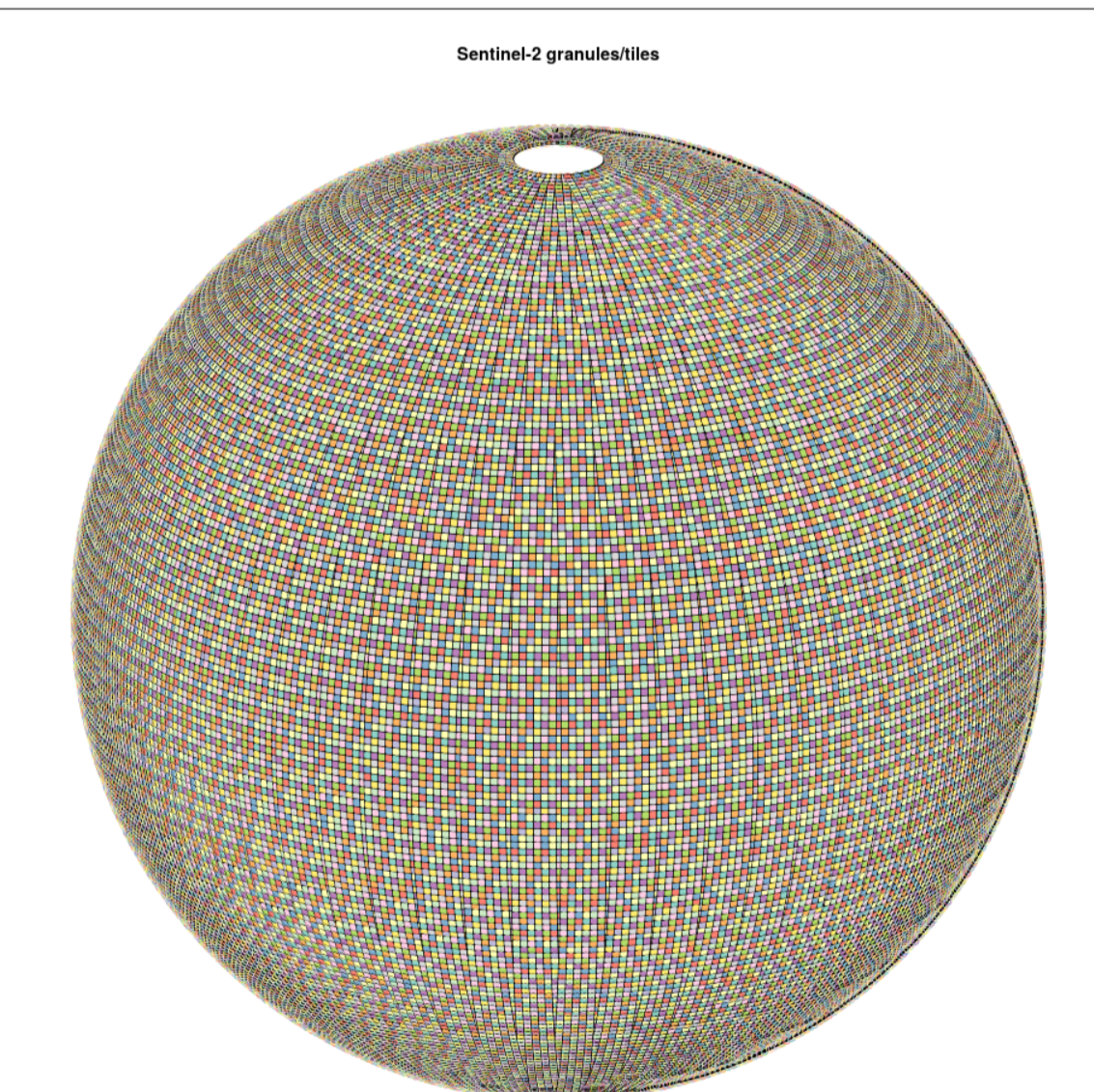
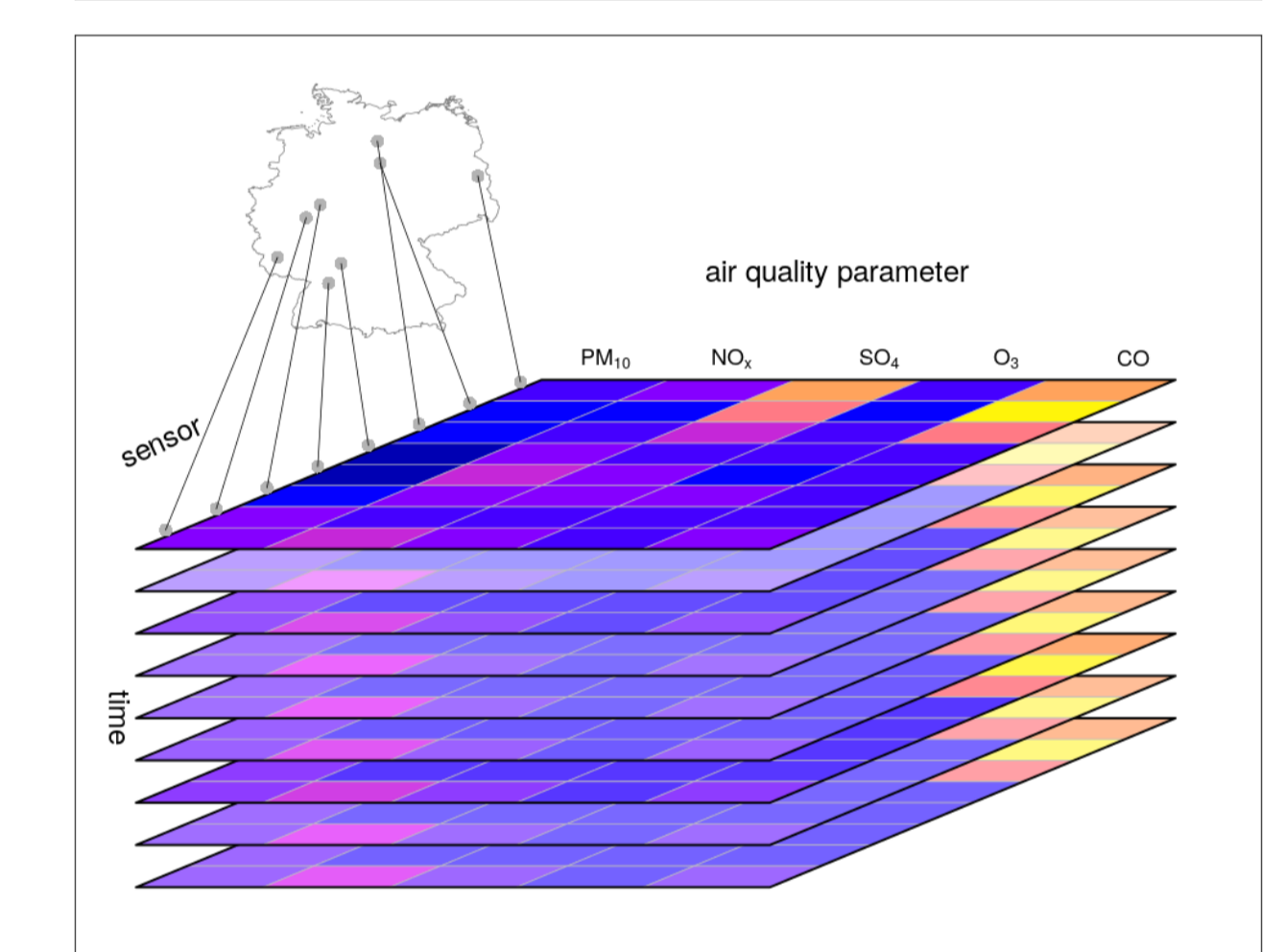
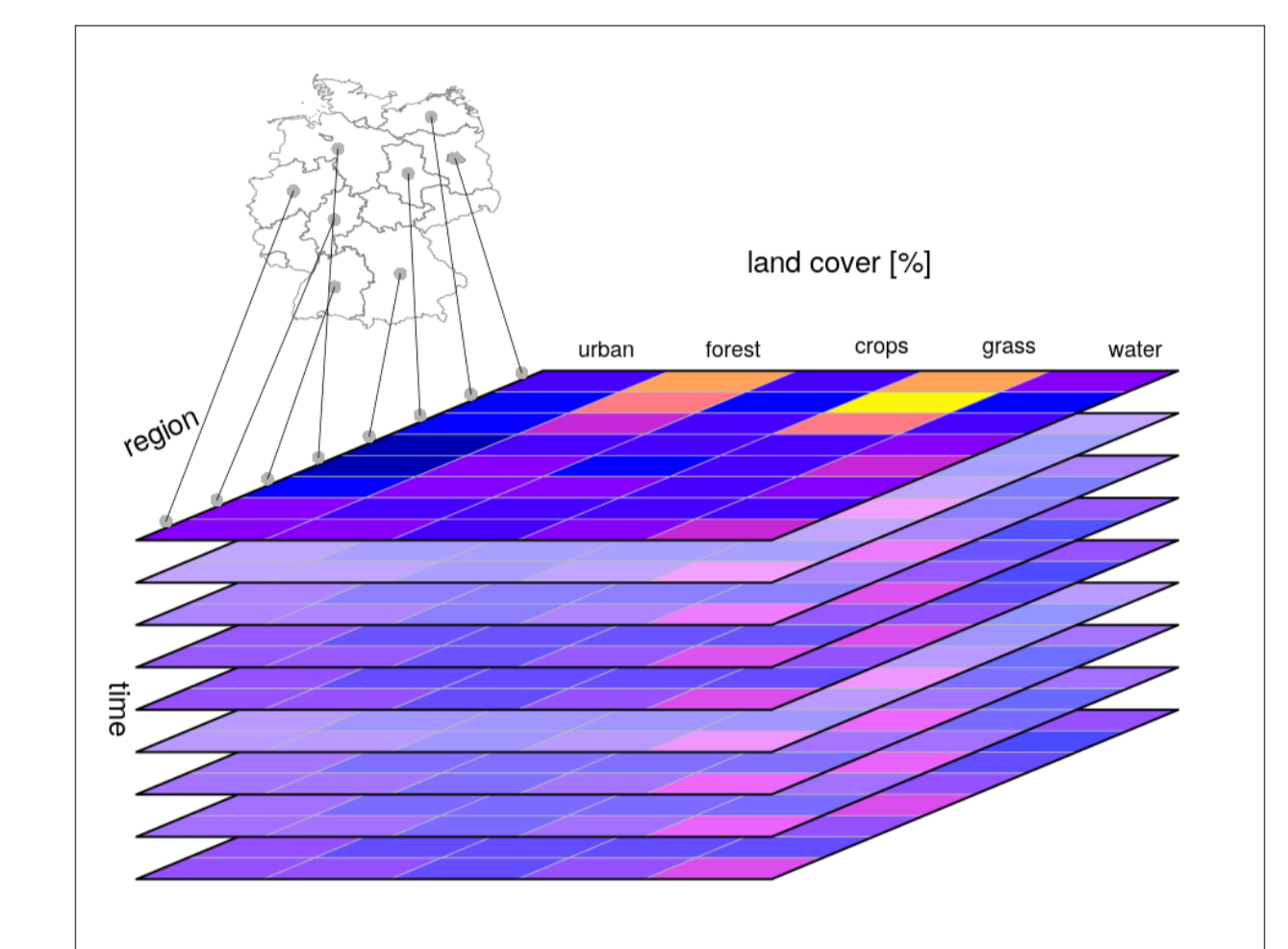
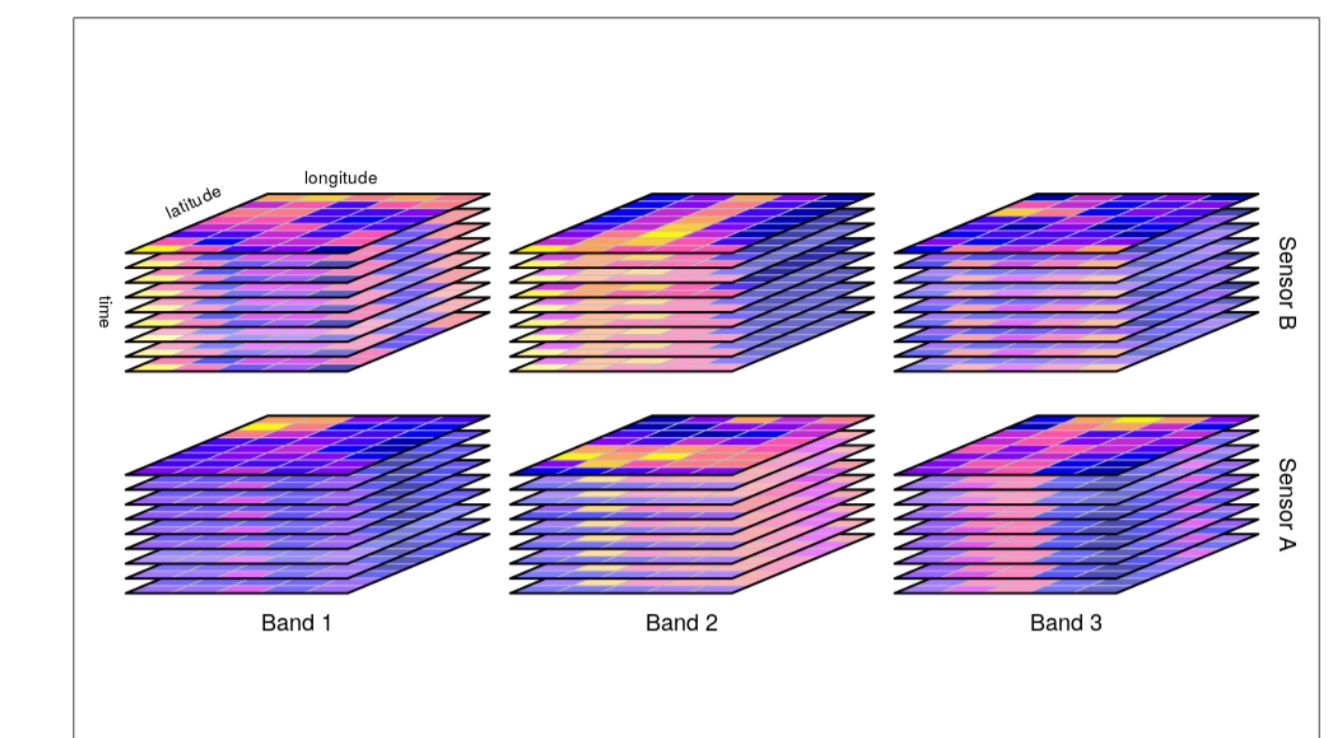
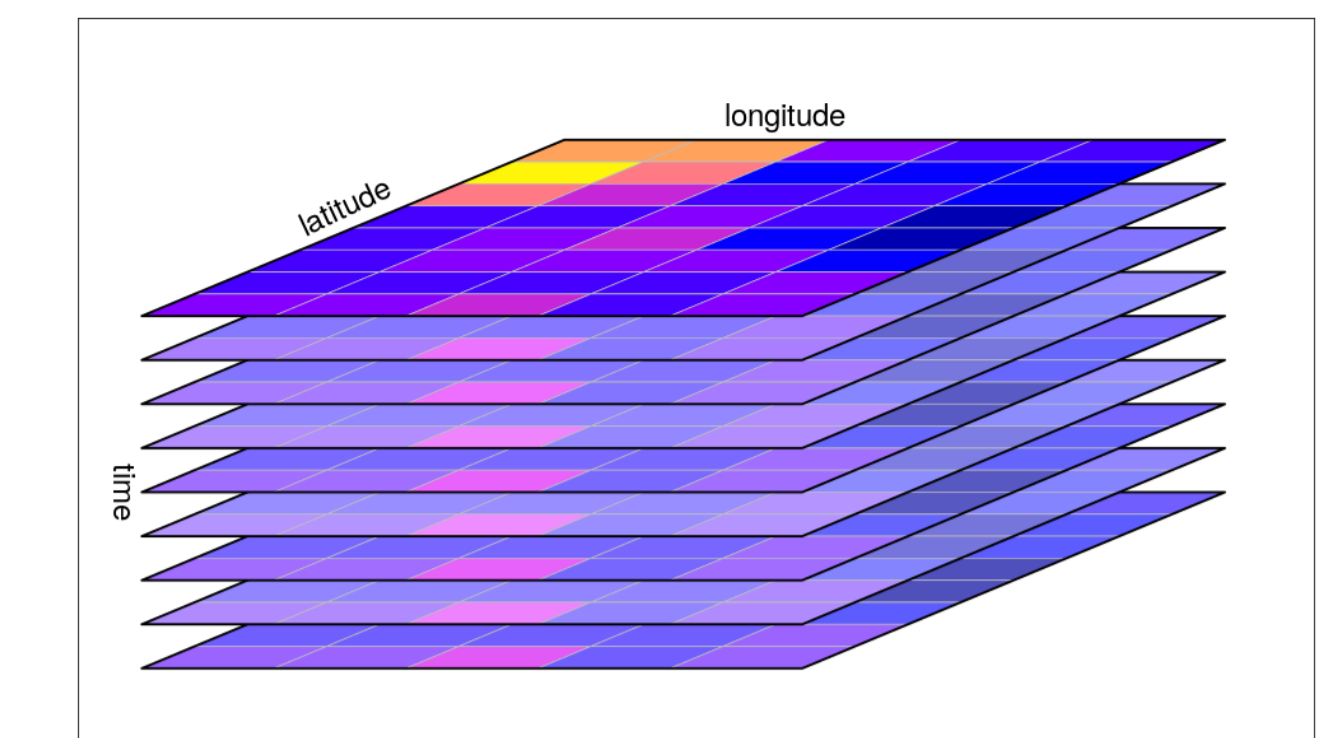
a data cube **view**

- specifies on-the-fly data cube dimension settings (sampling, tessellation)
- forms the basis on which datasets are analysed and/or merged
- does not require that a dataset is observed or resampled to these dimension parameters, prior to the user setting this view

Advantages:

- a user may have requirements to a target data cube dimension settings that differ from pre-computed mosaics
- different compute back-ends serving identical datasets can be compared (validated) to reproduce the same results on identical requests

openEO analyses Earth Observation data based on user-defined raster and vector data cube views



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