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EOMaps: An open-source python package for geographic data visualization and analysis.

Raphael Quast and Wolfgang Wagner

TU Wien, Research Area Remote Sensing, Department of Geodesy and Geoinformation, Austria
(raphael.quast@geo.tuwien.ac.at)

EOMaps is a free and open-source python package specifically tailored for geographic data visualization and analysis.

The main goals of the package are twofold:

- Speed up and simplify the daily struggle of geographic data visualization
- Directly use the figures as fully customisable interactive data-analysis widgets

EOMaps is built on top of *matplotlib* and *cartopy* and integrates well with the scientific python infrastructure (*numpy*, *pandas*, *xarray*, *geopandas*, *datashader*, etc.). It provides a flexible and well-documented API to create publication-ready figures and it can be used to visualize (potentially large) structured (e.g. raster) or unstructured (e.g. unordered lists) datasets provided in arbitrary projections.

In addition, *EOMaps* comes with many useful features to help with scientific geo-data analysis:

- Maps can have multiple layers to interactively compare and (transparently) overlay datasets, web-maps etc.
- Once a dataset is plotted, you can assign arbitrary callback functions to interactively run your analysis-workflow on selected datapoints (e.g. load data from a database, plot underlying timeseries, histograms etc.)

Figures created with *EOMaps* can be exported as images (*png*, *jpeg*, ...), vector-graphics (*svg*) or embedded in Jupyter Notebooks, web-pages (*html*) or in GUI frameworks such as *Qt* or *tkinter*.

In this presentation we will highlight the capabilities of *EOMaps* and show how it can be used in a variety of different situations to aid your scientific data analysis workflow.

EOMaps source-code: <https://github.com/raphaelquast/EOMaps>

EOMaps documentation: <https://eomaps.readthedocs.io/>