

# Model Output Analysis

The goal of this Output Analysis section is to show new and interested users how to process and analyse output of the ICON model. Pages are organized in short tutorials showing how most common tasks can be achieved. We present two different ways of data processing using

- a) shell scripting making use mainly of Climate Data Operators [CDO](#)
- b) python based approaches with the help of a [Jupyter](#) notebook

**This is a multi part tutorial with the following content:**

[Computing infrastructure](#): how to set up the available computing infrastructure that is utilized throughout the tutorials

[Open/Read](#): how to open, read a selected variable from ICON output and do some basic computation, like averaging

[Regridding](#): how to regrid the unstructured ICON output on a regular grid

[Visualization](#): how to do some basic plots (time series, maps)

Additional, more advanced, tutorials, also on other postprocessing topics, can be found in the [Potpourri](#).

Also, lot's of introductory information for python can be found on the internet: a small collection of tutorials focused on geoscience applications:

- Simple and short introduction to python with pyICON related plotting: [website](#)
- Python for Geosciences (Nikolay Koldunov): [website](#)
- Research Computing in Earth Sciences (Ryan Abernathey): [website](#)



The tutorials assume the ICON output is in a NetCDF-file and was saved on the ICON triangular grid. This is the case for older ICON simulations. For newer ICON simulations, the output is distributed in zarr files and saved on the HEALPix grid. Tutorials to analyze ICON output saved in the new format are provided on the easygems website:

<https://easy.gems.dkrz.de/Processing/index.html>

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