



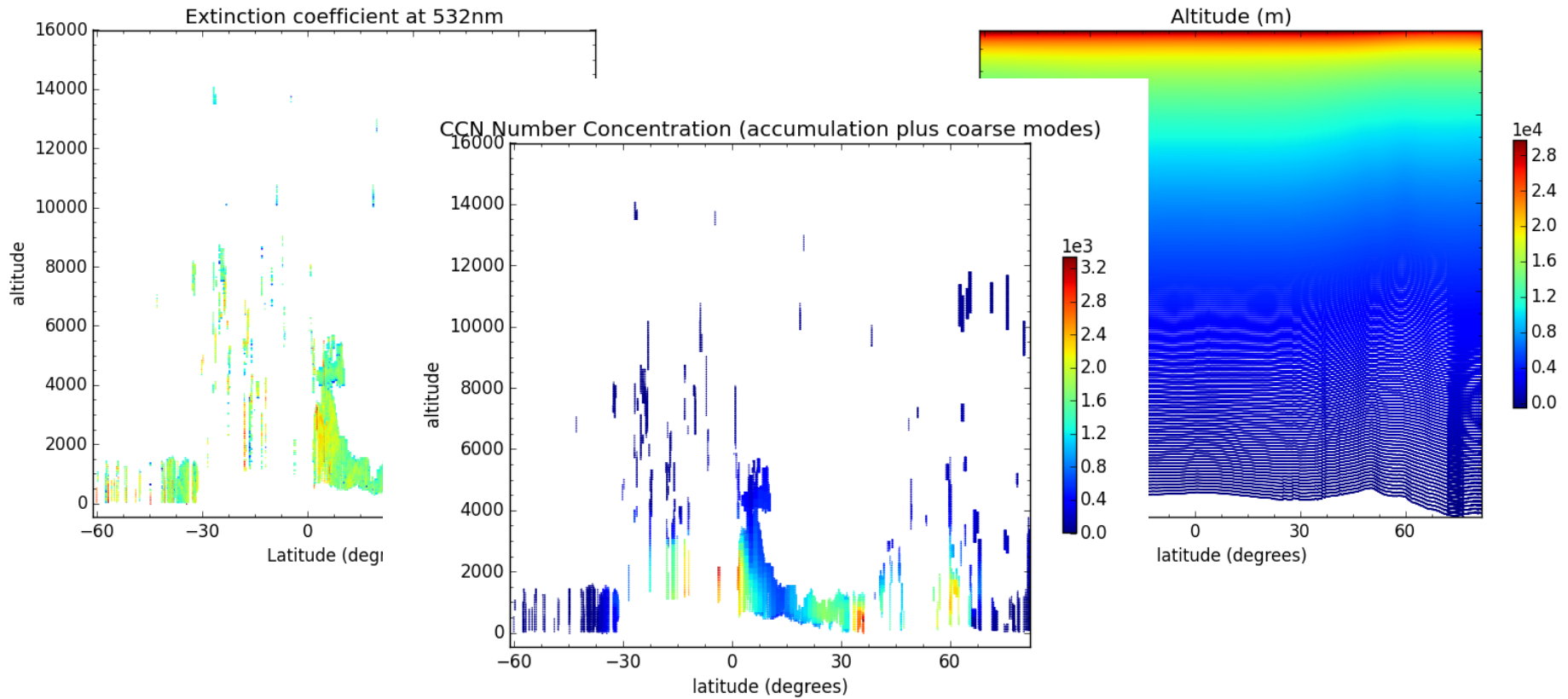
The Community Intercomparison Suite: An open-source toolbox

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Philip Kershaw, Bryan Lawrence
Center for Environmental Data Archiving, RAL

Nick Cook
Tessella Plc, Oxford

Why CIS?



What is CIS?

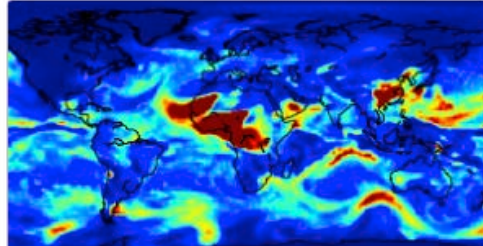
Read



Resamp



Analyse



Read your data

```
In [1]: from cis import read_data  
help(read_data)
```

Help on function read_data in module cis:

```
read_data(filenamees, variable, product=None)
```

Read a specific variable from a list of files

Files can be either gridded or ungridded but not a mix of both.

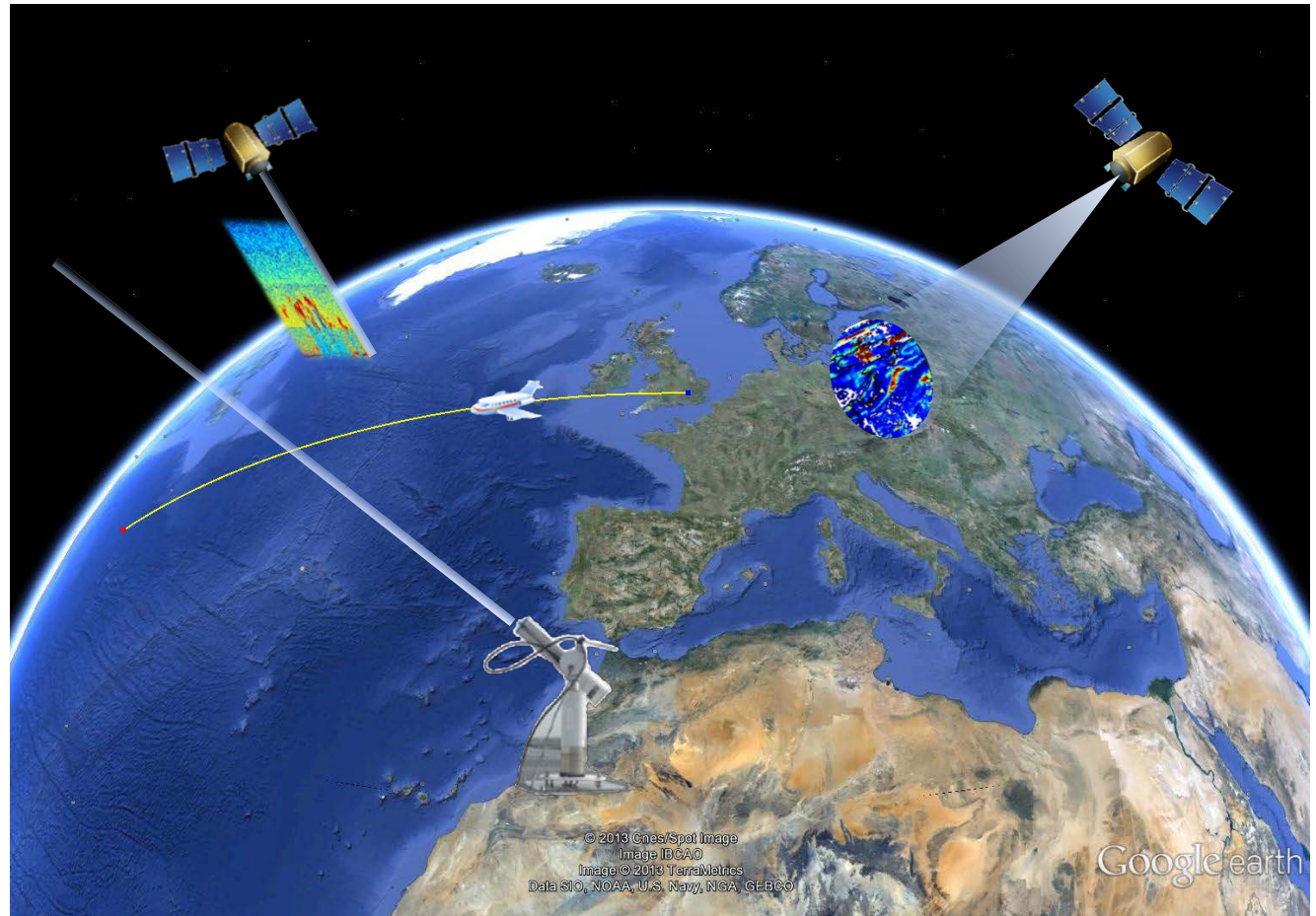
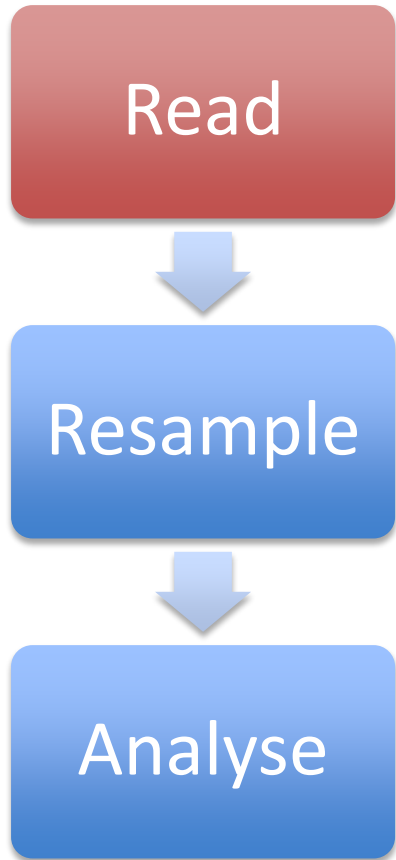
First tries to read data as gridded, if that fails, tries as ungridded.

variables and enables multiple variables to be output at a time.

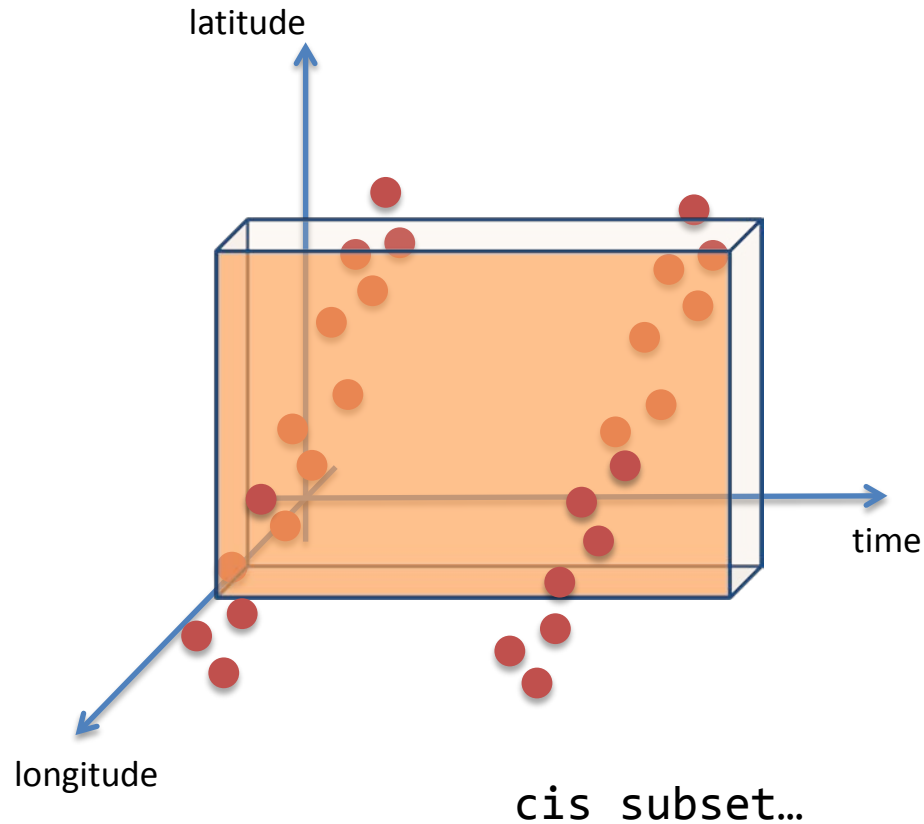
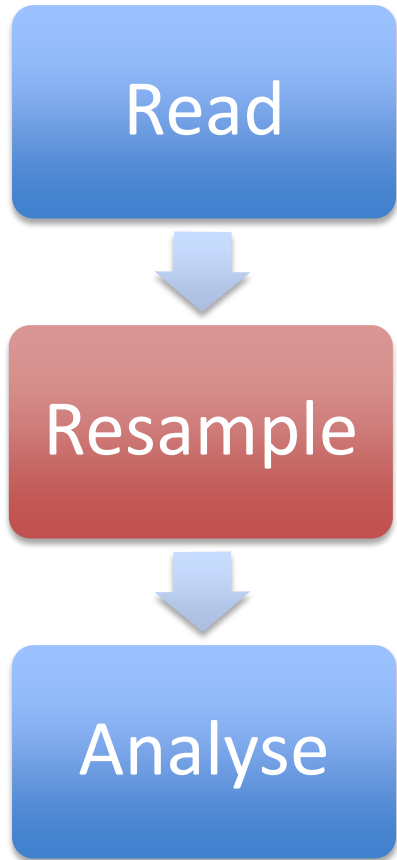
- Updated a number of routines to take advantage of Iris 1.8 features. In particular gridded-gridded collocation using the nearest neighbour kernel should be significantly faster. Iris 1.8 is now the minimum version required for CIS.
- Gridded-ungridded collocation now supports collocation from cubes with hybrid height or hybrid pressure coordinates for both nearest neighbour and linear interpolation kernels.
- Built-in support for reading multiple HadGEM .pp files directly.
- All new API and plugin development documentation, including a number of tutorials



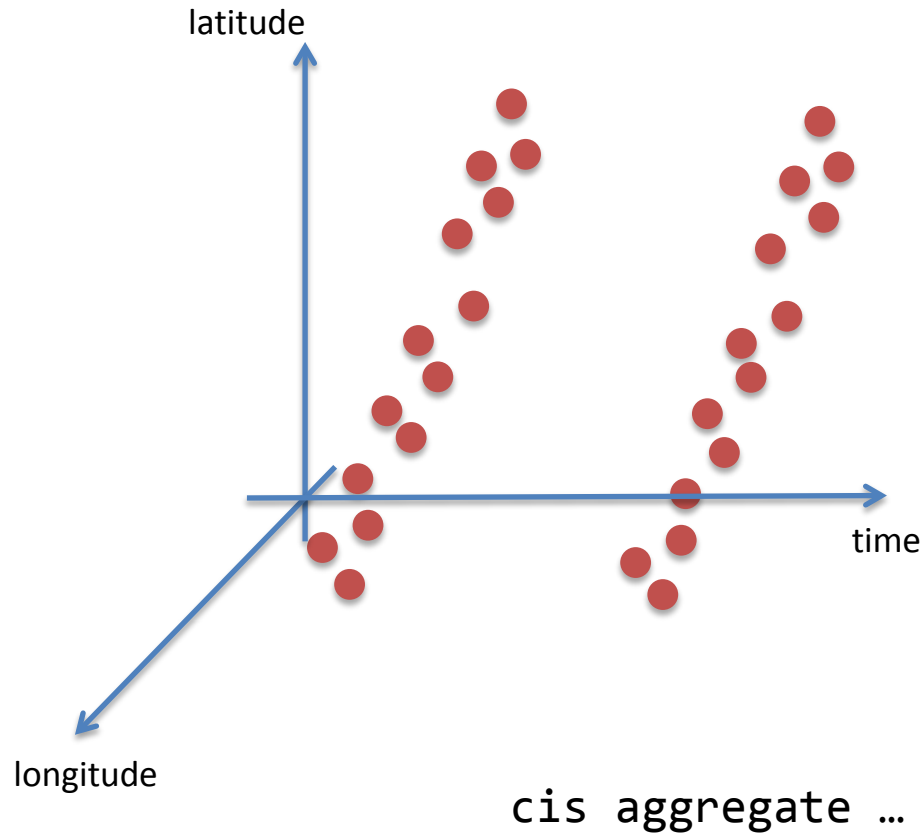
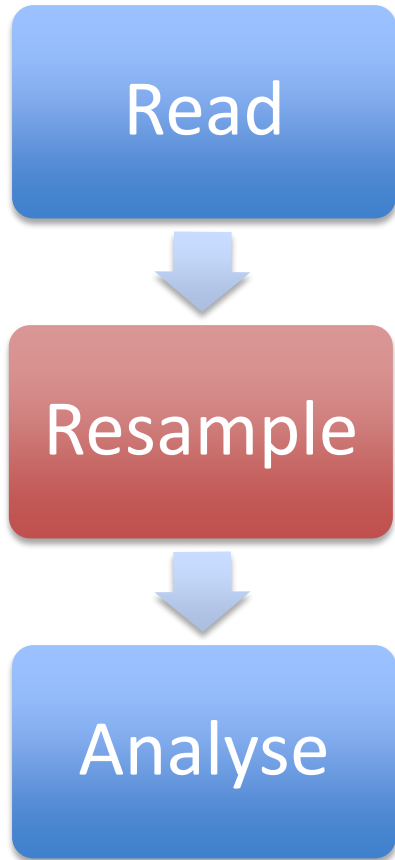
Data reading



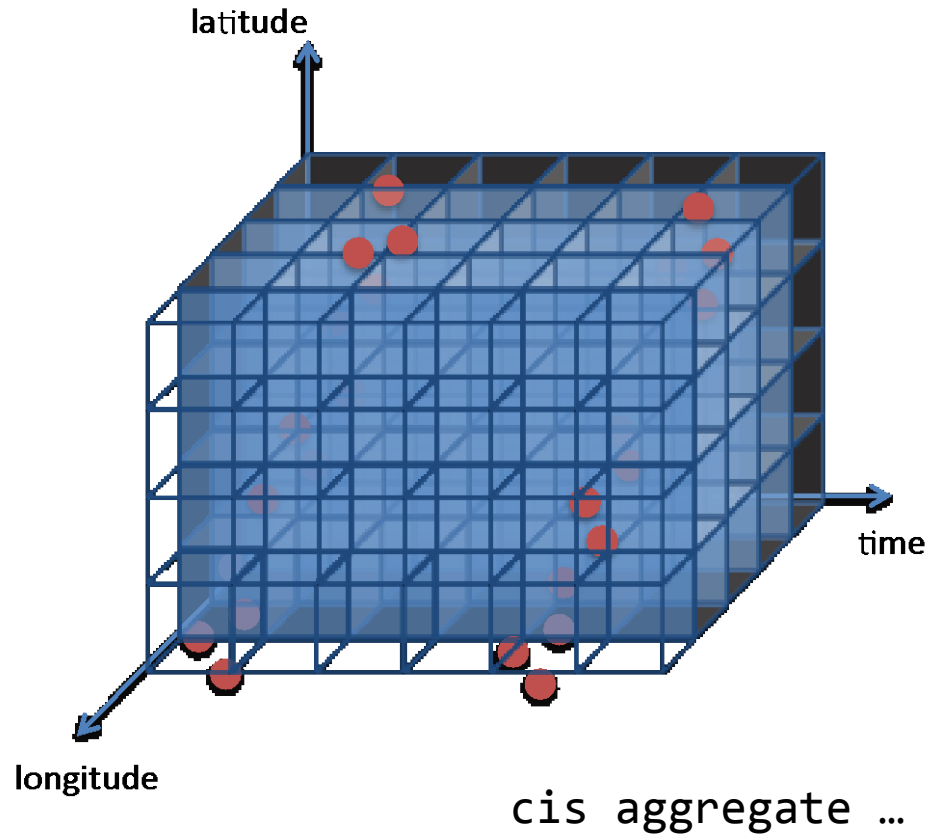
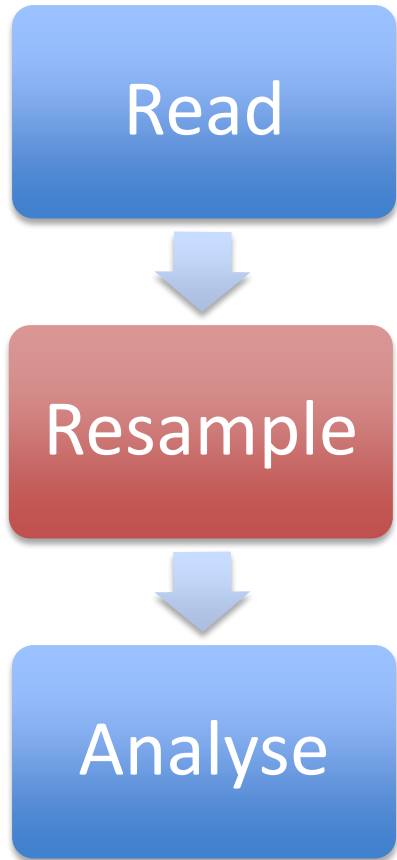
Overview of commands: subsetting



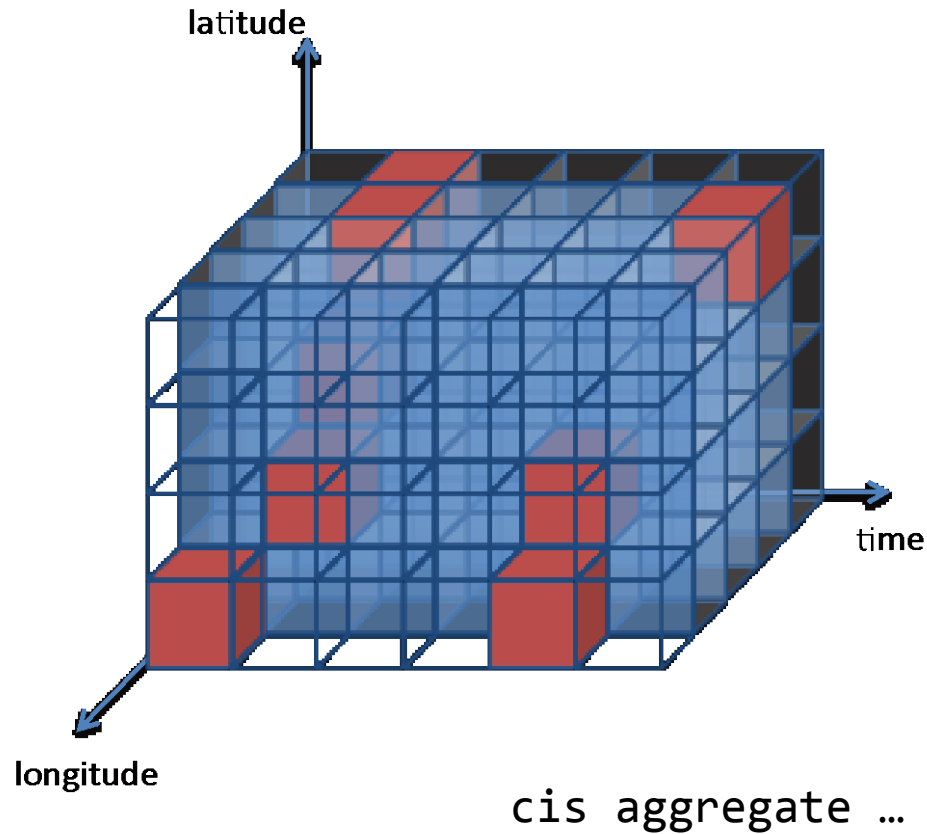
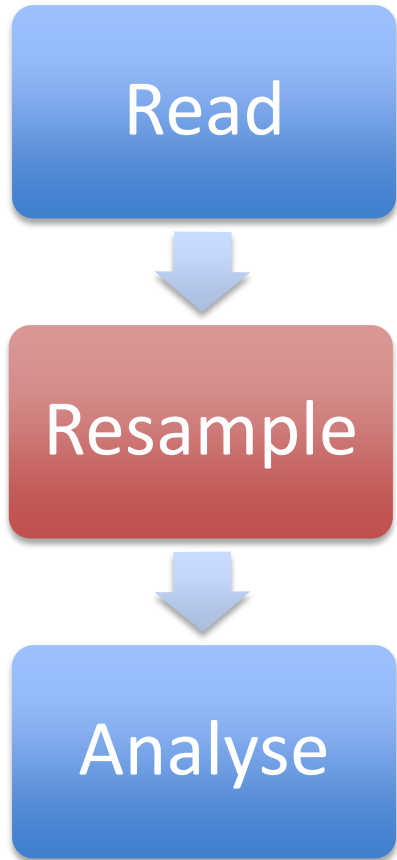
Overview of commands: aggregation



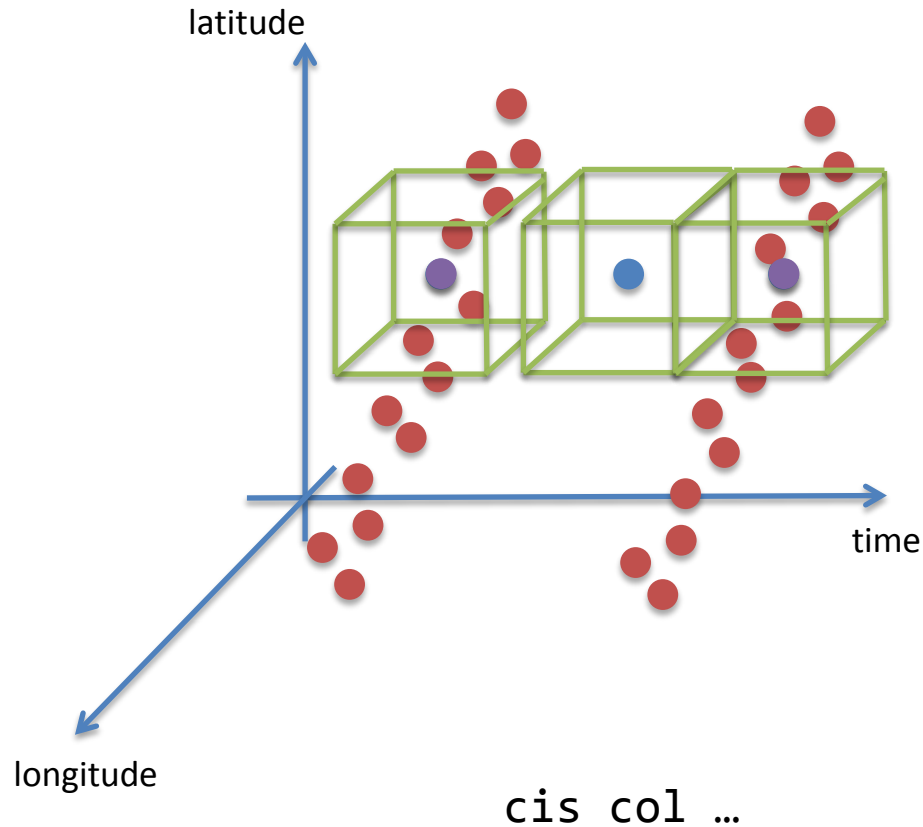
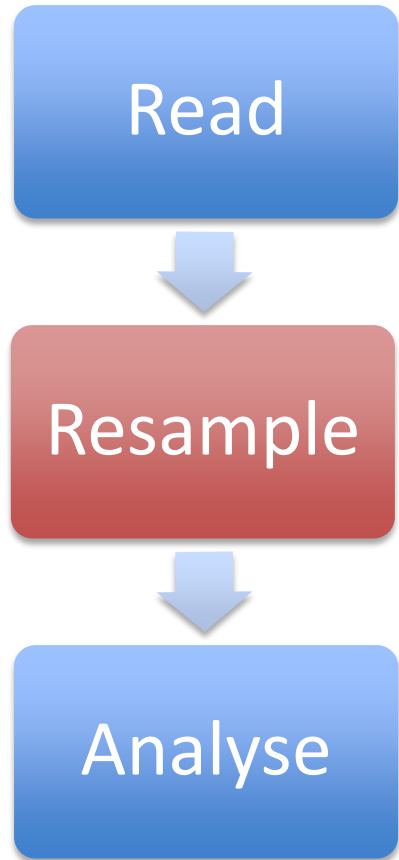
Overview of commands: aggregation



Overview of commands: aggregation



Overview of commands: collocation



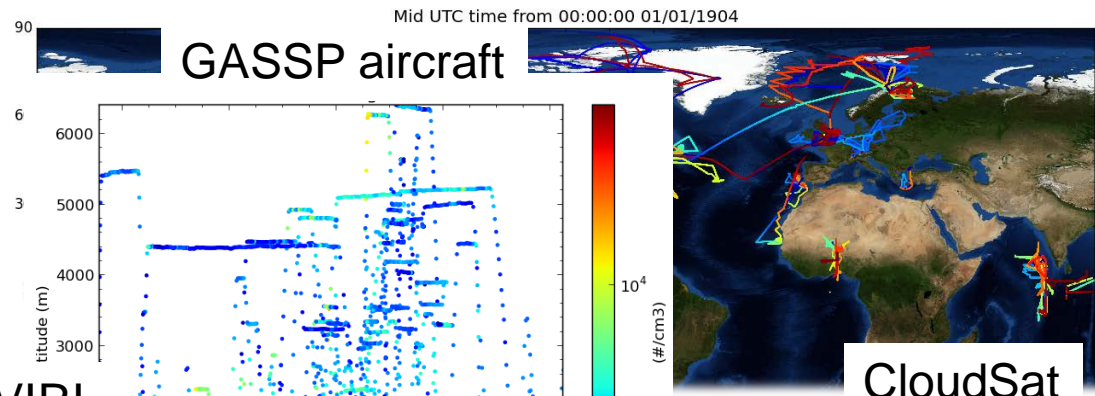
Overview of commands: plotting

Read



Resample

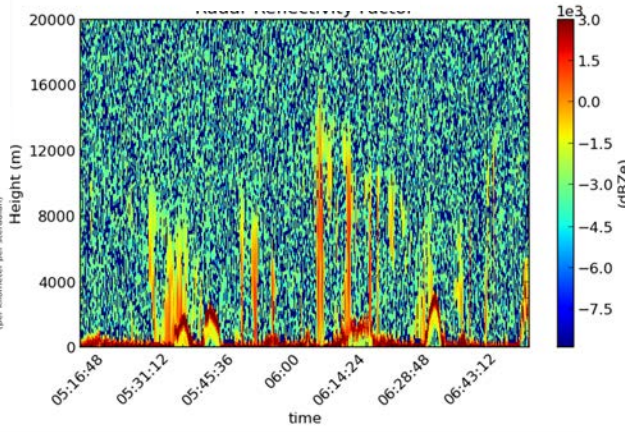
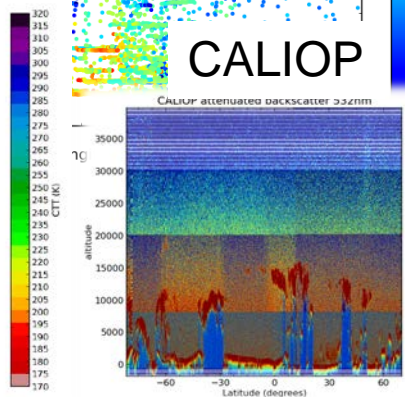
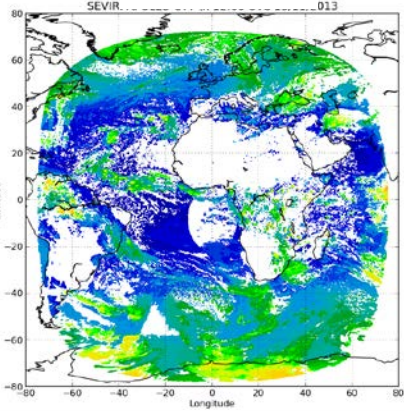
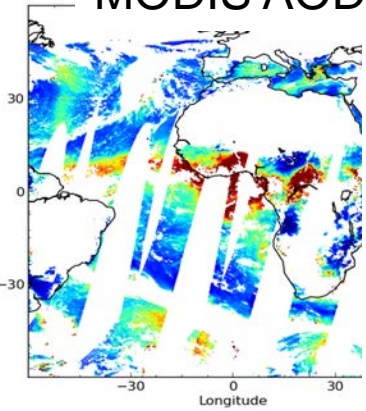
cis plot...



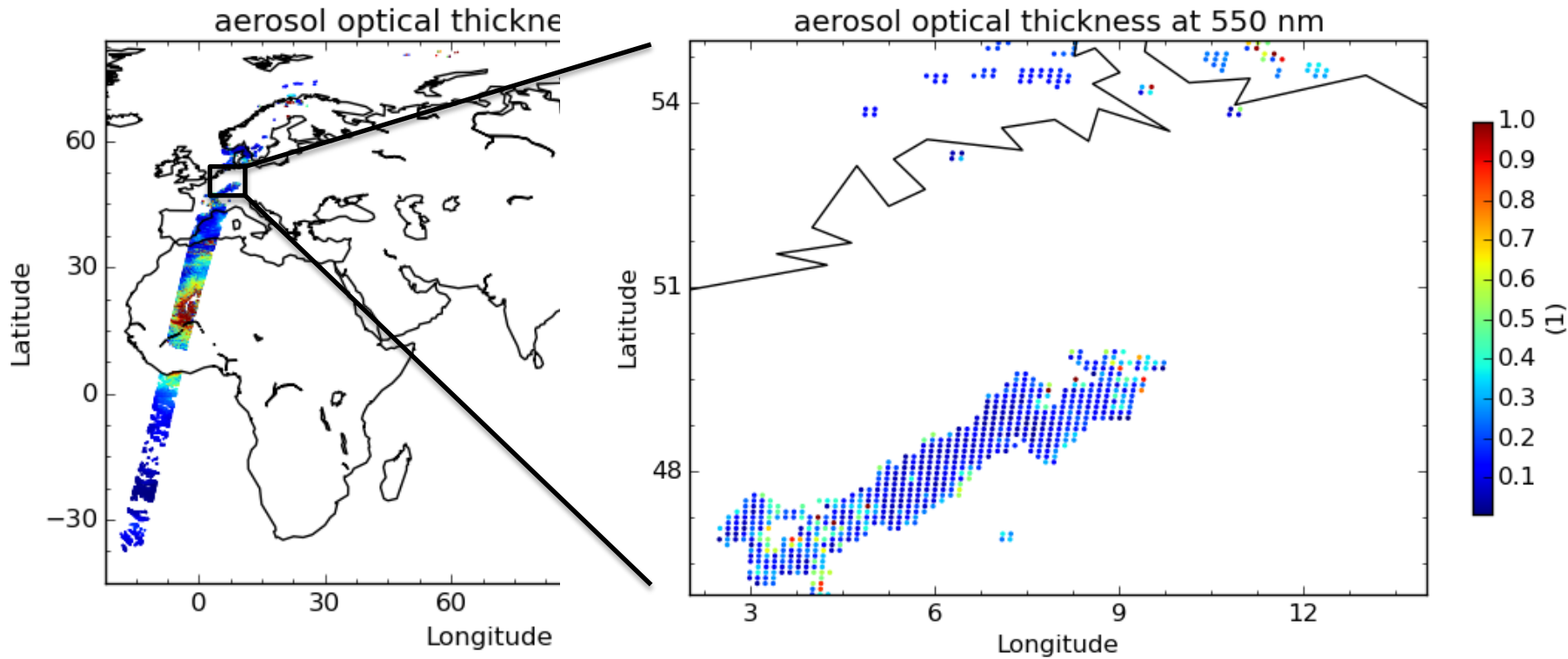
MODIS AOD

SEVIRI

CALIOP



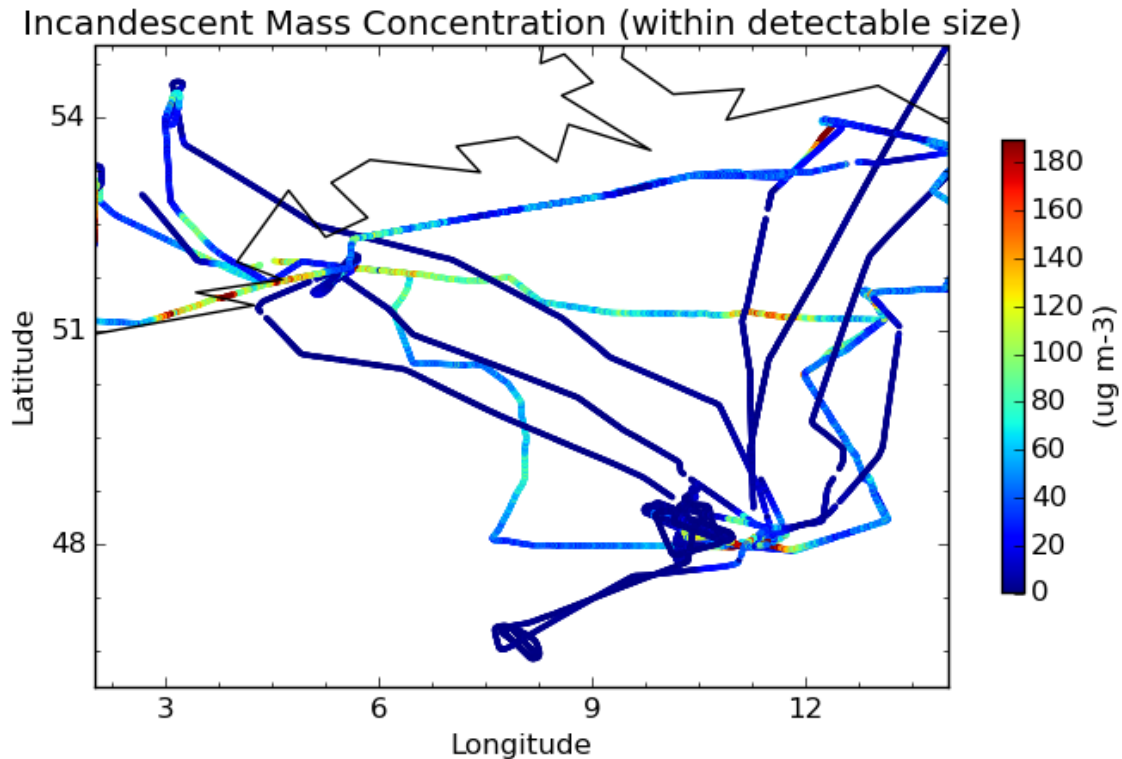
Aerosol Optical Depth (AOD) example: Aerosol CCI



data for AOD 20080612093821 NESAC Mak2P.0AEROSOL-ALL-
AATSB_EnvTSA_æ0BA0_#0&5pfig02.02.nc



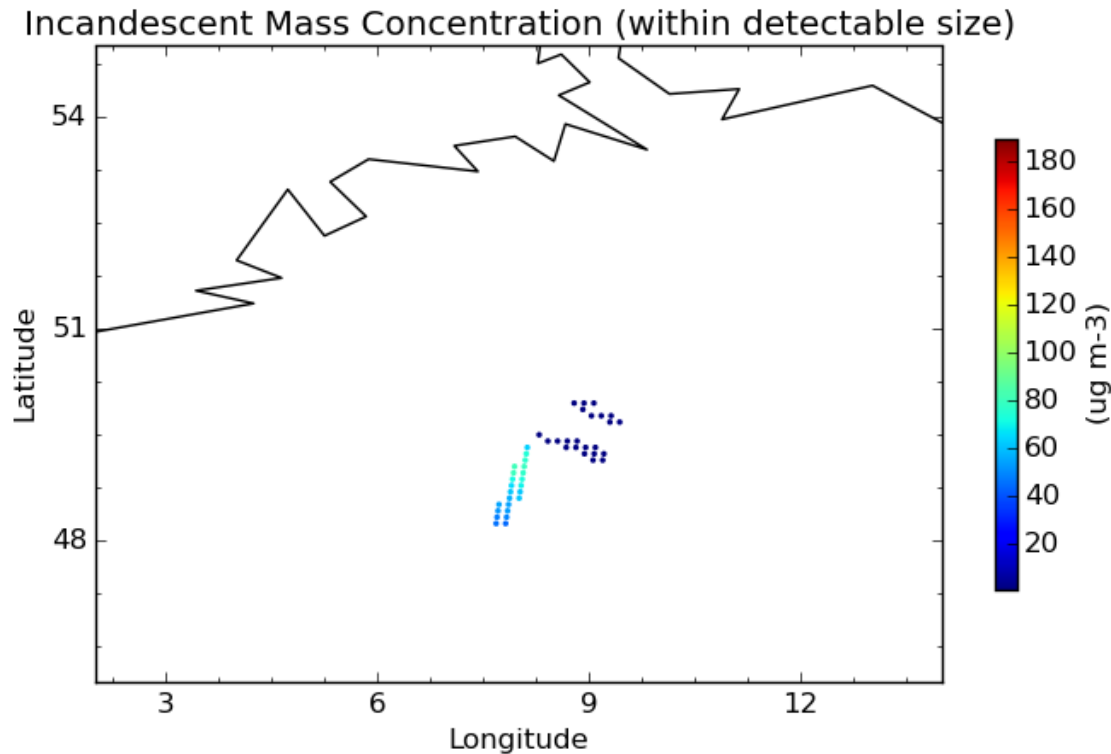
Aerosol Optical Depth (AOD) example: Original EUCAARI data



1 `cis plot BC_MASS:"SP2_EUCAARI_B*200805*.nc" --yaxis latitude --
xaxis longitude --xmin=2 --xmax=14 --ymin=46 --ymax=55 --
itemwidth=6 --vmax=190 -o eucaari_may_2008_bc_mass.png`



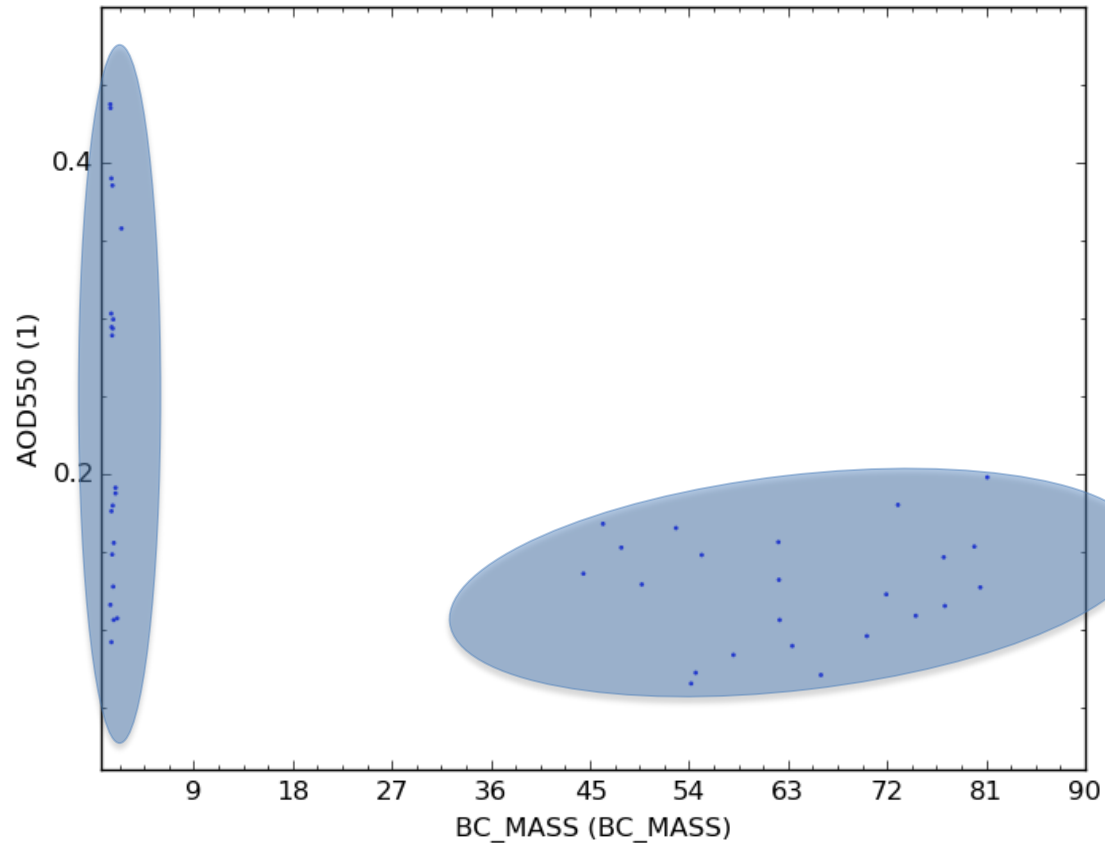
Aerosol Optical Depth (AOD) example: Collocated data



```
cis col BC_MASS,ALTITUDE:"SP2_EUCAARI_B*200805*.nc"  
data_file.nc:variable=AOD550,collocator=box[h_sep=10]
```



Aerosol Optical Depth (AOD) example: Analysis



Summary

- CIS is an open source python toolbox for reading, analysing and visualising earth sciences data
- Lots of support for community developed plugins
- There is also a Python API available
- Future work:
 - Support for ‘hybrid’ semi-gridded data types
 - Vector plots... and more!

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SPARE SLIDES



Aerosol Optical Depth (AOD) example

