



Comparing apples and oranges: the Community Intercomparison Suite

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Visual representation and comparison of geoscientific datasets presents a huge challenge due to the large variety of file formats and spatio-temporal sampling of data (be they observations or simulations). The Community Intercomparison Suite attempts to greatly simplify these tasks for users by offering an intelligent but simple command line tool for visualisation and colocation of diverse datasets. In addition, CIS can subset and aggregate large datasets into smaller more manageable datasets. Our philosophy is to remove as much as possible the need for specialist knowledge by the user of the structure of a dataset. The colocation of observations with model data is as simple as: "cis col <native observation files> <variable name>:<native simulation files>:<options>" which will resample the simulation data to the spatio-temporal sampling of the observations, contingent on a few user-defined options that specify a resampling kernel.

As an example, we apply CIS to a case study of biomass burning aerosol from the Congo. Remote sensing observations, in-situe observations and model data are shown in various plots, with the purpose of either comparing different datasets or integrating them into a single comprehensive picture.

CIS can deal with both gridded and ungridded datasets of 2, 3 or 4 spatio-temporal dimensions. It can handle different spatial coordinates (e.g. longitude or distance, altitude or pressure level). CIS supports both HDF, netCDF and ASCII file formats. The suite is written in Python with entirely publicly available open source dependencies. Plug-ins allow a high degree of user-moddability. A web-based developer hub includes a manual and simple examples. CIS is developed as open source code by a specialist IT company under supervision of scientists from the University of Oxford and the Centre of Environmental Data Archival as part of investment in the JASMIN superdatacluster facility.