



Validation and quality control of satellite retrievals by intercomparison of many data-fields

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The ozone monitoring instrument (OMI) is a space-borne UV-visible spectrometer (270–500 nm) with a wide swath. Each orbit contains spectra for about 100 000 ground pixels, from which level 2 data products of several trace gases (e.g. O₃ and NO₂), aerosols, and clouds are derived. The level 2 algorithms are developed by teams in Europe and the USA. For some of the products two algorithms based on different methods have been developed independently.

Against this background, a quality assessment tool (CAMA: “correleer alles met alles,” Dutch for “correlate everything with everything”) was created to read arbitrary fields from OMI level 2 files, transform and filter the data, manipulate fields (including simple arithmetic of multiple fields) and generate various visualizations and statistical results. Comparison is done on a pixel by pixel basis, but the analysis can run over long periods - it has been tested with up to a year worth of data. The comparison is done in such a way that only one orbit is kept in memory at a time. This allows us to quickly compare a large number of observations, and extract unanticipated features from the data.

CAMA has been used extensively to compare the differences between algorithms that retrieve the total ozone column. It is also used for internal consistency checks of various level 2 products, for example to investigate across-track biases. In addition CAMA is used to investigate the impacts of algorithm improvements.

In this contribution the CAMA tool is presented and examples of unexpected findings revealed with CAMA will be discussed.

CAMA was written in IDL, and is available for download under a permissive license from the KNMI OMI website: <http://www.knmi.nl/omi/research/validation/cama>