Introduction

As part of the EUMETSAT’s Satellite Application Facility on Ozone and Atmospheric Chemistry Monitoring (O3M-SAF), BIRA-IASB has been responsible for the validation and Quality Assessment (QA) of a number of trace gases products. For the second phase of the Continuous Development and Operations Project (CDOP-2) a new Trace Gas Validation and Quality Assessment (TGV-QA) web-portal has been set-up, which aims at providing in near-real-time complete information on the status of the operational data products from GOME-2 and IASI on the successive Metop platforms. The current version of the TGV-QA portal (www.cdop.aeronomie.be) is operational for NO2, BrO and HCHO total and tropospheric column measurements of GOME-2/Metop-A and Metop-B. For the current phase of the CDOP project (until 2017), the system will be developed to cover a number of additional gases measured by the GOME-2 and IASI sensors (NO2, BrO, HCHO, SO2, glyoxal, HNO3 and OClO) on board of the three EUMETSAT MetOp platforms. The validation approach is based on an end-to-end methodology where individual components of the level-1-to-2 retrieval chain are addressed. Evaluations are carried out using a suite of correlative observations performed by complementary ground-based remote sensing instruments (zenith-sky and direct sun DOAS, MAXDOAS, and FTIR from selected NDACC stations) and satellite instruments (GOME, SCIAMACHY and OMI) supported by radiative transfer and chemical-transport modelling tools. We present a demonstration of the system and focus on selected regions where correlative ground-based measurements are currently available, with a particular emphasis on the MAXDOAS stations operated by BIRA-IASB at Observatoire de Haute Provence in South of France and Beijying/Xiange in China.

www.cdop.aeronomie.be

- The trace gas validation and quality assessment web-portal is now operational for NO2, BrO and HCHO validation part from GOME-2 on Metop-A and Metop-B:

Validation: full validation exercise for new products before reaching operational status (e.g., new gases and Metop-B products)

Quality Assessment (QA): regular online monitoring of operational products, in order to ensure their stability (internal verification by the developer institutes + regular comparisons to correlative datasets, performed by the validation groups)

The quality assessment part will follow soon, with regular comparisons with other satellite datasets and available ground-based measurements.

- Examples of the validation tab for NO2, BrO and HCHO:

![Validation figures for NO2, BrO and HCHO](image)

Next steps

- In the next months: online Quality Assessment figures.
- In the next years: extension to other trace gases measured by the GOME-2 and IASI sensors, such as glyoxal, HNO3 and OCIO.
- The validation system will largely benefit from harmonization and automatization of the ground-based remote-sensing data within the NORS project (Demonstration Network of ground-based Remote Sensing Observations in support of the GMES Atmospheric Service).

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