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10 years of IASI CO retrievals

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Carbon monoxide (CO) is an important trace gas for understanding air quality and atmospheric composition. It is a good tracer of pollution plumes and atmospheric dynamics.

With two IASI instruments flying on the Metop-A and Metop-B satellites, any location on Earth is now observed at least four times per day in the infrared spectral range. All cloud free observations are analysed in near real time mode.

IASI CO concentrations are retrieved from the radiance data using the Fast Operational Retrievals on Layers for IASI (FORLI) algorithm, based on the Optimal Estimation theory. The operational production is performed at EUMETSAT and the products are distributed in NRT via EUMETCast under the AC SAF auspices.

We present here an analysis of 10 years of global distributions of CO. Improvements of the last FORLI-CO version (v20151001) will be shown. Updates in the auxiliary parameters (temperature, cloud information) have an impact on the retrieved product. Comparison with MOPITT CO data (v7T, record starting in 2000) was performed. IASI and MOPITT data are jointly assimilated in the Copernicus Atmospheric Monitoring Service (CAMS) to generate CO pollution forecasts. Harmonizing IASI and MOPITT CO products is challenging: a method using corrective factors (developed in the framework of the QA4ECV project) will be presented.