

## 17 years of IASI CO retrievals

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## ABSTRACT

Carbon monoxide (CO) is a key atmospheric compound that can be remotely sensed by satellite on the global scale. Measuring the variability and trends in CO on the global scale is essential as it is an ozone and carbon dioxide precursor, and it regulates the oxidizing capacity of the troposphere through its destruction cycle involving the hydroxyl radical (OH).

Since 2007, the IASI/Metop instrument series provide a homogeneous CO data record thanks to the creation of a CO Climate Data Record (CDR) using IASI instrument onboard the Metop-A and -B satellites. 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.

A CO near real time production is produced and distributed via EUMETcast under the AC-SAF auspices.

We present an analysis of 17 years of global distributions of CO. Comparison with Measurement of Pollution in the Troposphere (MOPITT) CO data (v9T, record starting in 2000) will be shown. IASI and MOPITT data are jointly assimilated in the Copernicus Atmospheric Monitoring Service (CAMS) to generate CO pollution forecasts, which will be briefly presented. We will also present a new dataset generated in the framework of the ESA CCI+ Precursors project: a merged IASI-MOPITT CO monthly (Level 3) product with the aim of studying long-term variability and trends.