

ICOS ATC near real time greenhouse gases data: from collection to model validation on the importance of proper water correction and primary scale propagation

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ICOS is the European based research infrastructure dedicated to the monitoring and improved understanding of carbon sources and sinks. It consists of complementary, harmonized networks of long-term monitoring stations focusing on Europe and adjacent regions including a network of about 40 operational atmospheric stations (measuring atmospheric composition in greenhouse gases and other core parameters). This network is coordinated by the Atmospheric Thematic Center (ATC) that has two main functions: operates the atmospheric data processing chains, which includes data transmission from stations to the routine delivery of near real time quality checked data-stream and carry out regular measurement technology survey, analysis and enable development of new sensors and their testing prior to field deployment within ICOS. The presentation will describe recent advances in GHG measurement and data processing with special focuses on:

- correctly and precisely accounting for water vapor when greenhouse gases measurements are performed in humid air,
- propagating GHG reference scale changes, ensuring traceability.

We will also show the use of this NRT processed data to validate GHG atmospheric transport models e.g. Copernicus