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Validation of MACC surface O3 and CO forecasts with GAW station data

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The MACC (Monitoring Atmospheric Composition and Climate) project aims at running a comprehensive operational monitoring and forecasting system for atmospheric constituents relevant for climate and air quality issues and surface solar radiation. The MACC forecast system is based on the global weather forecasting system operated by the European Centre for Medium-Range Weather Forecasts (ECMWF) coupled with the chemistry transport models MOZART (Model for OZone and Related chemical Tracers) and TM5.

Within the sub project Global – Reactive Gases some focus is given to the evaluation of reactive gases, thus, stratospheric and tropospheric ozone as well as its precursors (e.g. NOx, CO, CH2O, SO2, non-methane VOCs). Ground-based observational data for the evaluation of the above men-tioned reactive gases at the surface level are provided by the GAW network on the global scale. Con-tributing stations in this validation process are envisaged to provide their data in rapid delivery mode within 1 day to 1 week, thus, enable a fast evaluation process. Additionally, GAW data are used to validate reanalysis runs and single case studies.
Here, we will give an overview on the status of this near-real-time (NRT) validation. Furthermore, we will show results of the evaluation of reanalysis runs performed with recent model versions of the coupled forecast system for surface O3 and CO, based on GAW observational data.
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