



The use of Sentinel satellite data in the MACC-II Copernicus pre-operational atmosphere service

Richard Engelen, Johannes Flemming, Angela Benedetti, Antje Inness, Sebastien Massart, Mark Parrington, and Vincent-Henri Peuch

European Centre for Medium-Range Weather Forecasts, Research Department, Reading, United Kingdom
(richard.engelen@ecmwf.int)

The Monitoring Atmospheric Composition and Climate (MACC-II) project is the current pre-operational atmosphere service of the European Copernicus programme. MACC-II provides data records on atmospheric composition for recent years, data for monitoring present conditions and forecasts of the distribution of key constituents for a few days ahead. MACC-II combines state-of-the-art atmospheric modelling with Earth observation data to provide information services covering European Air Quality, Global Atmospheric Composition, Climate, and UV and Solar Energy. MACC-II uses a wide array of satellite and in-situ data observing both meteorological and atmospheric composition variables to provide a best estimate of the current state of the atmosphere on a daily basis. These analyses are then used as initial conditions for 5-day global forecasts of atmospheric composition and 4-day European air quality forecasts.

This presentation will provide an overview of the MACC-II pre-operational monitoring/forecasting system focusing on the use of current and future satellite data. The Sentinel missions will provide crucial new information on atmospheric composition, both for operational and research purposes, and we will show how MACC-II is preparing for these new observations and how MACC-II can provide important feedback about the data quality through careful data monitoring in the comprehensive data assimilation system. The latter information will be very beneficial for the scientific community to make more optimal use of the Sentinel data.