



## **Consistency between the global and regional modeling components of CAMS over Europe.**

Eleni Katragkou (1), Dimitrios Akritidis (1), Serafim Kontos (2), Prodromos Zanis (1), Dimitrios Melas (2), Richard Engelen (3), Matthieu Plu (4), and Henk Eskes (5)

(1) Department of Meteorology and Climatology, School of Geology, Aristotle University of Thessaloniki, Thessaloniki, Greece, (2) Laboratory of Atmospheric Physics, School of Physics, Aristotle University of Thessaloniki, Thessaloniki, Greece, (3) European Centre for Medium-Range Weather Forecasts, Reading, UK, (4) Météo-France, Toulouse, France, (5) Royal Netherlands Meteorological Institute (KNMI) De Bilt, The Netherlands

The Copernicus Atmosphere Monitoring Service (CAMS) is a component of the European Earth Observation programme Copernicus. CAMS consists of two major forecast and analysis systems: i) the CAMS global near-real time service, based on the ECMWF Integrated Forecast System (C-IFS), which provides daily analyses and forecasts of reactive trace gases, greenhouse gases and aerosol concentrations ii) a regional ensemble (ENS) for European air quality, compiled and disseminated by Météo-France, which consists of seven ensemble members. The boundaries from the regional ensemble members are extracted from the global CAMS forecast product. This work reports on the consistency between the global and regional modeling components of CAMS, and the impact of global CAMS boundary conditions on regional forecasts. The current analysis includes ozone (O<sub>3</sub>) carbon monoxide (CO) and aerosol (PM<sub>10</sub>/PM<sub>2.5</sub>) forecasts. The comparison indicates an overall good agreement between the global C-IFS and the regional ENS patterns for O<sub>3</sub> and CO, especially above 250m altitude, indicating that the global boundary conditions are efficiently included in the regional ensemble simulations. As expected, differences are found within the PBL, with lower/higher C-IFS O<sub>3</sub>/CO concentrations over continental Europe with respect to ENS.