



Towards the integration of atmospheric chemistry in the ECMWF integrated forecast system

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The on-line integration of modules simulating atmospheric composition in meteorological models for weather forecasting and climate modelling has become a vivid research activity. It provides a consistent modelling approach to consider the many interactions between atmospheric processes such as radiative forcing, aerosol-cloud interaction, transport, deposition or lightning-emissions. As part of the MACC-project (EU-FP7) ECMWF's integrated forecast system (IFS) is being extended by modules for chemistry, deposition and emission of reactive gases. This integration of the chemistry complements the integration of aerosol sink and source processes, which started in the GEMS-project (EU-FP6) and which is further improved in MACC. The MACC system provides global forecasts and analysis of atmospheric composition. Its main motivation is to utilize the IFS for the assimilation of satellite observation of atmospheric composition. Further, it is a research platform to study the interaction between atmospheric composition and meteorology at high resolution on the global scale. We present the MACC system with focus on atmospheric trace gases and their interaction with the model physics.