



European framework for online integrated air quality and meteorology modelling: Methodology and plans of COST Action ES1004

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The COST Action - European framework for online integrated air quality and meteorology modelling (EuMetChem, 2011-2015) - will focus on a new generation of online integrated Atmospheric Chemical Transport (ACT) and Meteorology (Numerical Weather Prediction and Climate) modelling with two-way interactions between different atmospheric processes including chemistry (both gases and aerosols), clouds, radiation, boundary layer, emissions, meteorology and climate. At least, two application areas of the integrated modelling are planned to be considered: (i) improved numerical weather prediction (NWP) and chemical weather forecasting (CWF) with short-term feedbacks of aerosols and chemistry on meteorological variables, and (ii) two-way interactions between atmospheric pollution/ composition and climate variability/change. The framework will consist of four working groups namely: 1) Strategy and framework for online integrated modelling; 2) Interactions, parameterisations and feedback mechanisms; 3) Chemical data assimilation in integrated models; and finally 4) Evaluation, validation, and applications. We expect that establishment of such a European framework (involving also key American experts) will enable the EU to develop world class capabilities in integrated ACT/NWP-Climate modelling systems, including research, forecasting and education.