

EVALUATION OF THE TRANSPORT OF POLLUTION BY THE UK MET OFFICE'S DISPERSION AND WEATHER PREDICTION MODELS USING THE ETEX DATASET

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Abstract: The concentration and variability of some pollutants in the atmosphere is to a large degree determined by their transport by meteorological processes. These meteorological processes can act on a range of timescales from minutes (e.g. convection) to days (e.g. frontal flows). To accurately forecast pollution concentrations it is necessary to model all of these transport processes. Commonly meteorological information is input into chemistry transport models at fixed 60 minute coupling intervals. Thus meteorological processes that have timescales less than the coupling interval, such as convection, may be absent.

The aim of this work is to determine whether more frequent meteorological information improves the representation of fast vertical transport processes and hence the forecast of pollution concentrations across Europe. In this study measurement data from the ETEX (European Tracer EXperiment) field campaign has been used to assess the performance of the UK Met Office's weather prediction model and its long-range Lagrangian dispersion model NAME in predicting pollution concentrations. Results from this evaluation study will be presented.