

EGU2020-7041

<https://doi.org/10.5194/egusphere-egu2020-7041>

EGU General Assembly 2020

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A 12-month UK air quality aircraft campaign and model evaluation

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Surface concentrations of pollutants in the UK are generally well observed and column averaged data is increasingly available from satellites. However, there remains limited data on the vertical distribution of key pollutants in the UK boundary layer.

As part of the Strategic Priorities Fund Clean Air programme, the Met Office Civil Contingencies Aircraft (MOCCA) has been instrumented to enable measurements of ozone, nitrogen dioxide, sulphur dioxide and particulate matter (PM_{2.5} and PM₁₀) to be made in the UK boundary layer.

These ongoing observations are being used to evaluate Air Quality in the Unified Model (AQUM), improve air quality forecasts and hence ultimately improve our confidence in the model data used to perform assessments of the health impacts of pollution in the UK.

Here we present our methodology, initial investigation of model and aircraft data from flights during the first 6 months of the project and future plans for this work.