

Extending the Use of the UK Based Research Aircraft to Provide a Long-Term Observation Platform

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The region of the atmosphere from the surface through to the upper troposphere is currently difficult to probe from space. Although satellites give good global coverage, they are less quantitative than *in situ* measurements and there can be interference from cloud coverage and aerosols. The availability of high quality and high resolution aircraft observations are of great value to improve our knowledge of atmospheric dynamics and composition.

The Facility for Airborne Atmospheric Measurements UK BAe 146 aircraft has been collecting data since July 2004 for individual projects and there has never been any attempt to link the datasets together. There is currently a database of over 500 flights. Ozone, CO, NO_x and temperature data collected over the UK has been averaged from 2005 to 2010, producing total and regional monthly averages for the UK at height intervals of 1000m – 10000m as well as distribution plots over the UK for the boundary layer, free troposphere and the lower troposphere/upper stratosphere.

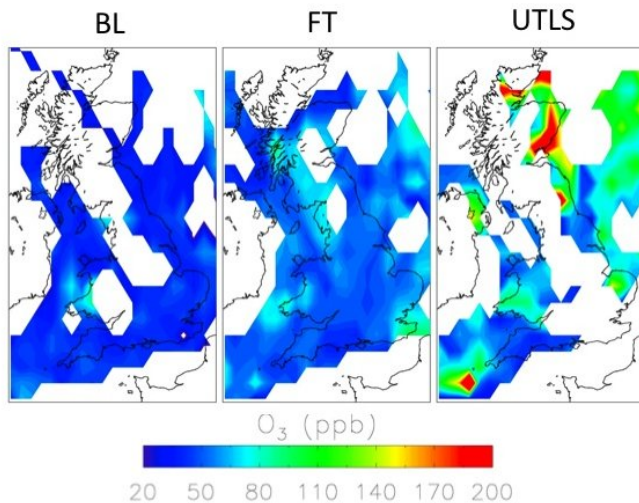


Figure 1. Ozone distribution over the UK using data collected from the UK research aircraft between 2005 - 2010.

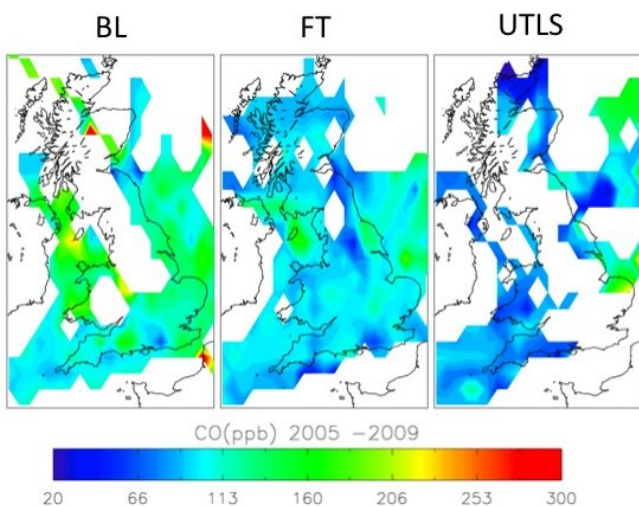


Figure 2. CO distribution over the UK using data collected from the UK research aircraft between 2005 - 2010.