



Greenhouse Gas Results from the CARIBIC Experiment

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The new CARIBIC system (Civil Aircraft for the Regular Investigation of the Atmosphere Based on an Instrument Container) is operational since December 2004. The fully automated instrument package is deployed monthly aboard a Lufthansa Airbus A340-600. Various trace gas and aerosol measurements are carried out in situ, including CO₂. The measurement results are representative for UT/LS and for tropical free-troposphere air masses. Besides in-situ measurements, air is sampled into glass flasks for laboratory analyses (greenhouse gases, NMHCs, halocarbons, CO₂ and H₂ isotopes). The main greenhouse gas analysis comprises CO₂, CH₄, N₂O and SF₆.

In 2006 and 2007 flights have been performed monthly between Germany and East Asia and between Germany and North America and these data will be discussed. For CO₂ and CH₄ comparisons with ground based measurements will be made. Also their correlation as a function of season will be discussed. Furthermore, the relationships between these trace gases and others, such as CO and O₃, for plumes and across the tropopause will be presented. A first comparison between the flask measurements and the continuous CO₂ measurements will also be shown.