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Abstract/Paper Title
The CARIBIC Passenger Aircraft Observatory Reaches for the Sky

Abstract Text
CARIBIC (Civil Aircraft for the Regular Investigation of the atmosphere Based on an Instrument Container, www.caribic-atmospheric.com) is in monthly operation since mid 2005 and will join IAGOS (www.iagos.org) which will be a European infrastructure for atmospheric observations of composition using passenger aircraft. The CARIBIC system consisting of an air inlet system underneath a Lufthansa Airbus A340-600, that is connected to the actual measurement container deployed every month, has 5 functions, namely: Remote Sensing, in situ measurement of trace gases and of aerosol, and collection of air and of aerosol samples. The data obtained comprise a broad range of species: H2O, HDO, H218O, O3, NO, NO2, NOy, HONO, SO2, BrO, CO, CH4, CO2, N2O, SF6, C2H2, C2H6, C3H6, C3H6O, Hg, all halocarbons, alkylnitrates, total water, gaseous water, aerosol N4,12,18, aerosol H,N,C,O,S,Ca, Al, and many more. The regular operation at cruise altitude of 10-12 km and the resulting large, detailed, high quality data set make CARIBIC output of interest for comparisons with those from satellite borne systems. We have indeed seen studies comparing results for greenhouse gases and reactive gases, but the full potential of CARIBIC has not yet been developed. By means of examples, e.g. CH4, C2H2, CO2, SO2, we show what data sets we have, and how such data may help the ongoing development of atmospheric composition measurements from space.

Topic
02 Remote sensing of trace gases in the troposphere

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