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## Update on IAGOS greenhouse gas observations from commercial airliners

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Within the framework of the research infrastructure IAGOS (In-service Aircraft for a Global Observing System), a cavity ring-down spectroscopy (CRDS)-based measurement system for the autonomous measurement of the greenhouse gases (GHGs) CO<sub>2</sub> and CH<sub>2</sub>, as well as CO and water vapour is deployed on a Lufthansa Airbus A330 since September 2018. This IAGOS-CORE system is equipped with a two-standard in-flight calibration system, allowing for trace gas measurements to be fully traceable to WMO calibration scales. Various lessons have been learned during the first deployment periods related to the autonomous operation of the system over periods of several months, enabling the future extension of the GHG measurements to aircraft from further airlines. Apart from the presentation of the observations, the presentation will discuss the data quality and uncertainty estimation.

A further CRDS system for autonomous measurement CO<sub>2</sub> and CH<sub>4</sub> is integrated within the instrumented IAGOS-CARIBIC container deployed on board an Airbus A340 on a bi-monthly schedule since July 2018. By now this system has provided data from more than 30 flights. Data will be presented, and the potential of the observations for research applications will be introduced. Also the availability of IAGOS GHG data to the research community will be discussed.