Vertical Distributions of Atmospheric CO2 over Delhi Observed by Commercial Aircraft

T. Machida[1], H. Matsueda[2] and Y. Sawa[2]
[1]*National Institute for Environmental Studies, Japan*
[2]*Meteorological Research Institute, Japan*

Commercial airliner can be a powerful observational platform for various atmospheric chemistry researches, because of a low-cost operation, high-frequency measurement and worldwide coverage, although it requires sufficient safety for installing measurement instrumentations.
We developed a Continuous CO_2 Measuring Equipment (CME) to install on commercial airliner and high-frequency observations of atmospheric CO_2 have been conducted since November 2005 for the ***C***omprehensive ***O***bservation ***N***etwork for ***TR***ace gases by ***AI***r***L***iner (CONTRAIL) project. Two Boeing 747-400 aircraft and three 777-200 aircraft of Japan Airlines (JAL) are operated to cover the wide regions from Japan to Europe, South-East Asia, East Asia, Oceania and North America. The CME can measure CO_2 mixing ratio in high-resolution for both vertical profiles every 10 seconds and horizontal distributions every 1 minute. During these four years, more than 100 vertical profiles are obtained over Delhi airport.
In the meeting, we will show the characteristics of CO2 variations, such as seasonal variation, vertical profile and year-to-year difference, over Delhi.