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An improved infrared carbon monoxide analyser for routine measurements aboard commercial Airbus aircraft: technical validation and first scientific results of the MOZAIC III programme

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Abstract. The European-funded MOZAIC programme (Measurements of ozone and water vapour by Airbus in-service aircraft) has been operational since 1994 aboard 5 commercial Airbus A340. It has gathered ozone and water vapour data between the ground and an altitude of 12 km from more than 20 000 long-range flights. A new infrared carbon monoxide analyser has been developed for installation on the MOZAIC equipped aircraft. Improvements in the basic characteristics of a commercial CO analysers have achieved performance suitable for routine aircraft measurements : ± 5 ppbv, $\pm 5\%$ precision for a 30 s response time. The first year of operation on board 4 aircraft with more than 900 flights has proven the reliability and the usefulness of this CO analyser. The first scientific results are presented here, including UTLS exchange events and pollution within the boundary layer.

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