



Deployment of a Dual-Channel Peroxy Radical Chemical Amplifier (PeRCA) on an airborne platform during ITOP

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A new dual-channel Peroxy Radical Chemical Amplifier (PeRCA) was deployed on the NERC/UKMO BAe 146-300 aircraft during the Intercontinental Transport of Ozone and Precursors (ITOP) campaign based on Faial, Azores during July/August 2004. Peroxy radicals are key intermediates and chain carriers in the gas phase oxidation of volatile organic compounds, and owing to their short lifetime they give an indication of *in-situ* photochemical ozone production/destruction. There are few measurements of airborne peroxy radicals ($\text{HO}_2 + \Sigma \text{R}_i\text{O}_2$), the only previous published deployment of a PeRCA on an airborne platform was a single-channel instrument aboard the former UK Meteorological Office C-130 Hercules research aircraft [Green *et al.*, *J. Environ. Mon.*, **5**, 75-83, 2003]. The dual-channel instrument offers significant advantages over its single channel predecessor owing to the ability to remove atmospheric *noise* from the data; these advantages shall be demonstrated using peroxy radical measurements obtained during ITOP. The work has demonstrated that PeRCA is a good technique for airborne radical quantification.