Geophysical Research Abstracts, Vol. 7, 04466, 2005
SRef-ID: 1607-7962/gra/EGU05-A-04466


# Study of some trace organic species in the air and in the seawater in the Western Indian Ocean

**A. COLOMB** (1), V. GROS (2), R. SARDA-ESTEVE (2), T. KLUEPFEL (1), J. WILLIAMS (1), B. BONSANG (2) AND J. SCIARE (2)

(1)Max Planck Institute for Chemistry, Mainz, Germany, (2) Laboratoire des Sciences du Climat et de l'Environnement-Unité mixte CEA-CNRS, Gif sur Yvette, France (acolomb@mpch-mainz.mpg.de / Fax: 0049 6131 305 436 / Phone: 0049 6131 305 417)

Volatile organic compounds are produced naturally in the ocean. It is important to estimate their marine sources and sinks because of their impact on the remote atmosphere.

Shipborne measurements have been made during the MANCHOT (Measurement of Anthropogenic and Natural Compounds in the southern Hemispheric Oceanic Troposphere) campaign, from December $4^{th}$ to $29^{th}$ 2004, on board the R/V Marion Dufresne within the AEROTRACE-IPEV program. This ship steamed at 15 knots from La Reunion to Crozet Archipelago, then to Kerguelen and to Amsterdam Island before returning to La Reunion. Comprehensive VOC measurements have been performed using a PTR-MS (Proton Transfer Reaction – Mass Spectrometer), a GC-MS (Gas Chromatography-Mass Spectrometer) and a GC-FID (Gas Chromatography-Flame Ionization detector). In addition, CO (Carbon monoxide), $H_2$ (Hydrogen) $O_3$ (ozone) have been continuously measured. Chlorophyll and the water temperature at 8m-depth have also been measured.

We have simultaneously analyzed organic tracers such as alkanes, alkenes, alcohols, carbonyls, aromatics, isoprene, DMS, organohalogens and CFCs in the air and in the seawater. One of the aims of this project is to determine the strength and nature of biogenic emissions of these hydrocarbons and their impact on tropospheric oxidant levels. Seawater and atmospheric measurements were made whilst crossing subtropical, temperate, Sub-Antarctic waters as well as pronounced Subtropical/Sub-Antarctic oceanic fronts. The preliminary results for selected VOCs, sampled along the 55˚E,

from 22º to 46˚S, are presented here. The spatial variability of selected VOCs will be presented as well as the biological influence on concentrations in the pristine marine environment.