

**Die Expeditionen ANTARKTIS XVI/1-2
des Forschungsschiffes POLARSTERN 1998/1999**

**The Expeditions ANTARKTIS XVI/1-2
of the Research Vessel POLARSTERN in 1998/1999**

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**1.3.1 North/south profile of semi-volatile halogen hydrocarbons
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Results of previous expeditions of POLARSTERN concerning the global distribution of halogenated methylphenylethers (anisoles), which are partially biogenic, are to be completed by halogenated benzonitriles and benzaldehydes. A special target of this cruise was to use a custom-synthesized carbon-covered titania as sorbent and to compare it in parallel sampling with the conventional adsorbent silica under the special conditions of the tropical regions.

Air sampling was performed by large-volume samplers. By means of a turbine, air with a flow rate of approx. 30 m³/h is sucked through a sampling layer and a breakthrough layer of an adsorption material, separated by a filter from each other. The duration of the individual samplings ranged between 8 and 24 hours with collected volumes between 250 and 750 m³. 43 large-volume samples were taken, mostly two samples in parallel.

Due to its character of an extreme trace analysis of organic compounds, particular attention was paid to contamination-free sampling points aboard. Sampling normally took place on the uppermost deck; in some cases parallel on the uppermost deck and on the helicopter deck in order to determine influences from the ship. The blank of both adsorption materials was also investigated. No samples were taken during the stations, at the working hours of the incineration plant of the ship and while the deck was painted.

In the laboratories of the University of Ulm the adsorption materials are first solvent-extracted in order to solve the adsorbed analytes. After several clean-up and group separation steps the qualitative and quantitative gas chromatographic analysis is performed by HRGC-ECD and HRGC-MSD.