

Metadata Details

Title

Measurement of Aerosol Particles along a Section from 8 N Latitude to Antarctica in the South western Region of the Indian Ocean

Science Keywords

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| Category | Atmosphere |
| Topic | Aerosols |
| Expedition Year | 1981-1982 |
| ISO Topic | Atmosphere |

Summary

Abstract

Measurements of aerosol particles along a transect in the southwestern Indian Ocean showed a gradual decrease of the particles towards Antarctica. The concentrations varied from $65.3 \pm 1.9 \mu\text{g}/\text{m}^3$ at $8^{\circ}37'\text{N}$ latitude to 0 in Antarctica. Peaks were recorded at places where the air coming from other continents seemed to influence the atmosphere. The observed peak in the zone of antarctic convergence may be due to the effect of the flow of surface air from the Antarctica towards the equator. Katabatic wind is probably the cause of another peak observed near the Antarctic continent. An inverse relation has been found between the wind speed and aerosol content which is presumably due to "scrubbing effect" and dispersion.

Purpose

The most significant source for the transport of particles and other material to the Southern Ocean and to Antarctica is by the atmosphere. However, the effect of the continental air in these regions can hardly be felt in areas beyond 60°S . This is because the air can be expected to be continuously 'scrubbed' as a result of its long residence time during its transport. Also aerosol particles can be lost due to the formation of condensation nuclei in the clouds.

Data Center