cutoff diameter of 1.1 μm were the values beyond the detection limit. This result suggested that MSA in the atmosphere was formed through a gas-to-particle conversion process. The same bulk aerosol sampling had been also carried out during the KH-86-3 cruise of the R/V HAKUHO MARU from 3 June to 1 August 1986 in the Northern Pacific Ocean (M. YAMATO 1988: pers. commun.). The maximum methanesulfonate concentration was observed off the Kurile Islands with high primary productivity. There is a significant positive correlation between MSA and excess SO_4^{2-} in the Antarctic coastal region and the Northern Pacific Ocean. The mean MSA/excess SO_4^{2-} was 0.068 (correlation coefficient $r=0.78$, $N=17$). The y-intercept of the regression line is negligible. The positive correlation between MSA and excess SO_4^{2-} is likely to support that DMS is a major precursor component of sulfuric acid particles.

We forecasted high concentrations of the excess SO_4^{2-} in the Northern Pacific Ocean, because the influences of human activity on global environmental pollution are remarkable in the Northern Hemisphere. However, the excess SO_4^{2-} concentrations were not different between the Northern and Southern Hemisphere. The mean excess SO_4^{2-} concentration was 0.29 $\mu g/m^3$.

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THE TEST OF MARINE AEROSOL SAMPLING ABOARD THE RESEARCH VESSEL "SHIRASE" (ABSTRACT)

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The research vessel "SHIRASE" was used for test sailing from Tateyama in Chiba prefecture to Nagoya via Miyake Island in September 1987. Marine aerosols were measured aboard every hour by β-ray absorption method, together with ozone monitoring by ultra-violet absorption method. The concentration of marine aerosols increased abruptly on occasion, when the concentration of ozone decreased in the same manner. It is concluded that these phenomena were due to some contamination of the self-exhaust from her chimney. According to change of the elemental composition of the marine aerosols observed during this sailing, the following conclusion was obtained. When the contamination happened during the sampling, the ratio of Zn to Cu in the aerosol samples increased obviously in comparison with uncontaminated samples. It is concluded that the ratio of Zn to Cu in the sample is an indication of the contamination degree due to the self-exhaust during marine aerosol sampling.

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