

## DMS(P) distributions in the sea ice zone of the Southern Ocean

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Phytoplanktonic activities in the oceans affect the emissions of dimethylsulfide (DMS). Its oxidation can form sulfate-containing CCN and increasing cloudiness and albedo, which would lead to lower temperatures. Recently, distributions of DMS and its precursor DMSP concentrations in the ocean have been examined, however, very few studies have been carried out on the dynamics of DMS in the sea ice area of the ocean and within the sea ice. During the 48th Japanese Antarctic Research Expedition (JARE48) in 2006-2007 austral summer, DMS(P) concentrations and related biological parameters were examined to understand the spatial and temporal variations of biogeochemical cycles of DMS(P) in the sea ice zone. DMS and DMSP were only detected shallower than 50 m in seawater off Lutzow-Holm Bay (68S - 70S, 35E - 40E). In the area of high sea ice concentrations, DMS and DMSP concentrations were 20 - 40 nmol/L, which is assumed that the area of high sea ice concentrations can be a source of the atmospheric DMS. DMS and DMSP concentrations within the sea ice off Syowa Station were also analyzed. DMSP+DMS concentrations were detected in the top of the ice despite Chl.a concentrations were not detected there. It is possible that DMS is emitted from the top of the fast ice.