



Interannual variability of dimethylsulfide in air and seawater and its atmospheric oxidation by-products (methanesulfonate and sulfate) at Dumont d'Urville (coastal Antarctica) (1999-2003)

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A multiple year-round study of atmospheric DMS (from December 1998 to April 2003) as well as sulfur derived aerosols (MSA and non-sea-salt sulfate) (from March 1991 to February 2003) was conducted at Dumont d'Urville, coastal Antarctica. The three sulfur derived species exhibit a seasonal cycle characterized by maxima in mid-summer (January). Whereas the interannual variability of winter levels remains low, a strong interannual variability is shown in summer particularly for DMS, and MSA, into a lesser extent for non-sea-salt sulfate. Over the 1998-2003 time period, January 2002 stands out with high values for all sulfur species. These interannual variabilities of atmospheric summer levels are examined in the light of seawater chlorophyll *a* content derived from SeaWiFS data (themselves compared to field measurements made south of 60°S), oceanic DMS levels estimated from chlorophyll *a* SeaWiFS data, and various sea ice indices.