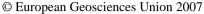
Geophysical Research Abstracts, Vol. 9, 02884, 2007

SRef-ID: 1607-7962/gra/EGU2007-A-02884





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)

S. Preunkert (1), M. Legrand (1), B. Jourdain (1), C. Moulin (2), S. Belviso (2), N. Kasamatsu (3), M. Fukuchi (3), T. Hirawake (3)

(1) Laboratoire de Glaciologie et Géophysique de l'Environnement du Centre National de la Recherche Scientifique, St Martin d'Hères, France, (2) Laboratoire des Sciences du climat et de l'Environnement, Orme des Merisiers, Gif-sur-Yvette, France, (3) National Institute of Polar Research, Research Organization of Information and Systems, 1-9-10 Kaga, Itabashi 173-8515, Japan

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 midsummer (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.