

Proceedings of the NIPR Symposium

on

Polar Meteorology and Glaciology

No. 4

Papers presented at the “Twelfth Symposium on Polar Meteorology and Glaciology” held at the National Institute of Polar Research, Tokyo, July 18–19, 1989

CONTENTS

Results of ozone observation from the equatorial region to Antarctica in 1987..... <i>Kouji MATSUBARA, Motohisa DOI, Tetsuro UEKUBO, Kenji OKADA, Shuhji AOKI and Sadao KAWAGUCHI...</i>	1
Nitric acid transport from the stratosphere to the troposphere and ice sheet in Antarctica through polar stratosphere <i>Yasunobu IWASAKA and Masahiko HAYASHI...</i>	12
Report on the first MOS-1 data received at Syowa Station, Antarctica <i>Takashi YAMANOUCI, Hiroshi KANZAWA, Hidetoshi ARIYOSHI and Masaki EJIRI...</i>	22
The characteristic variation of T_b in the Antarctic region revealed by NOAA AVHRR channel-4 data <i>Katsumoto SEKO, Makoto WADA and Shuhji AOKI...</i>	31
Recent secular trends of surface air temperatures in high latitudes of the Northern Hemisphere..... <i>Iwao TSUCHIYA...</i>	43
Distribution of elemental and organic carbon aerosols in the atmosphere between Japan and Antarctica <i>Masataka NISHIKAWA, Satoru KANAMORI, Nobuko KANAMORI, Tsuguo MIZOGUCHI, Shohei MURAYAMA, Shuhji AOKI and Sadao KAWAGUCHI...</i>	52
Fluctuations of sea ice extent in the Antarctic <i>Hiroyuki ENOMOTO and Atsumu OHMURA...</i>	58
A note on water exchange under fast ice in Lützow-Holm Bay, Antarctica <i>Kay I. OHSHIMA, Nobuo ONO, Takatoshi TAKIZAWA and Shuki USHIO...</i>	74
Application of the dielectric profiling technique to ice core studies <i>John MOORE and Norikazu MAENO...</i>	81

Subglacial water layer and grounding line derived from backscattering coefficients of radio echo sounding in the Shirase Glacier and Roi Baudouin Ice Shelf, East Antarctica	<i>Fumihiko NISHIO and Seiho URATSUKA</i> ...	93
A very short pulse C-band radar for crevasse detection	<i>Takeshi SUITZ, Seiho URATSUKA, Akira TAKAHASHI, Hiromichi YAMASAKI, Mitsuhiro KAMATA, Ken'ichi OKAMOTO, Fumihiko NISHIO and Okitsugu WATANABE</i> ...	103
Variation of natural levees of submarine canyons around Antarctica—An indicator of Antarctic contour-current—	<i>Hideo KAGAMI and Tetsuya IWASAKI</i> ...	108
On the net heating of auroral jet currents in the polar mesopause region (abstract).....	<i>Kyo SEKIHARA</i> ...	119
Mid-winter warmings in the southern hemisphere stratosphere in 1988 (abstract).....	<i>Masato SHIOTANI, Isamu HIROTA, Keiko KUROI and Tooru HIRAKI</i> ...	119
Large stratospheric sudden warming in Antarctic late winter and shallow ozone hole in 1988 (abstract)	<i>Hiroshi KANZAWA and Sadao KAWAGUCHI</i> ...	120
Recent interannual changes of stratospheric temperatures (abstract)	<i>Toshihiko HIROOKA and Kohji KAWAHIRA</i> ...	120
Modeling of polar stratospheric clouds (abstract)	<i>Hiroshi TANAKA, Masaki OOTA, Masahiko HAYASHI, Shinji USHIMARU and Yasunobu IWASAKA</i> ...	121
Giant particles in the lower stratosphere (abstract).....	<i>Makoto WADA</i> ...	121
The double-jet and semi-annual oscillations in the southern hemisphere simulated by the Meteorological Research Institute general circulation model (abstract)	<i>Akio KITO, Koji YAMAZAKI and Tatsushi TOKIOKA</i> ...	122
Radiatively determined temperature in the middle atmosphere in the polar region (abstract).....	<i>Kiyotaka SHIBATA</i> ...	122
Cloud distribution around Syowa Station by NOAA AVHRR (abstract)	<i>Takashi YAMANOUCHI</i> ...	123
Year-to-year changes of the tropopause height at Syowa, Antarctica—A possible relation to the ozone hole—(abstract)	<i>Kohji KAWAHIRA, Kouji KONDOH and Yasunobu IWASAKA</i> ...	124
Measurements of the number concentration of aerosol particles in northern Norway (abstract).....	<i>Takashi TANIGUCHI and Katsuhiko KIKUCHI</i> ...	124

Concentration of atmospheric carbon dioxide at the Japanese Antarctic Station, Syowa (abstract) <i>Shuhji AOKI, Takakiyo NAKAZAWA, Syohei MURAYAMA, Masayuki TANAKA, Takashi YAMANOUCI, Sadao KAWAGUCHI, Masataka SHIOBARA, Masashi FUKABORI and Haruta MURAYAMA</i> ...	125
Measurements of the atmospheric minor constituents at Syowa Station, Antarctica, in 1986 (II) (abstract) <i>Masashi FUKABORI, Yukio MAKINO, Masayuki TANAKA, Sadao KAWAGUCHI and Takashi YAMANOUCI</i> ...	126
Sulfur compounds of phytoplankton origin in the atmospheric boundary-layer (abstract).....	<i>Seizi KOGA and Hiroshi TANAKA</i> ... 126
On SO ₂ measurement in the ocean atmosphere (abstract) <i>Yasunobu IWASAKA, Masahiko HAYASHI, Seizi KOGA and Hiroshi TANAKA</i> ...	127
Measurement of atmospheric methane between Tokyo and Syowa Station (abstract).....	<i>Michio HIROTA, Teruo AOKI, Yukio MAKINO and Shohei MURAYAMA</i> ... 128
Measurements of carbon dioxide partial pressure in the air and surface sea water on board the icebreaker “SHIRASE” (abstract) <i>Gen HASHIDA, Takakiyo NAKAZAWA, Shohei MURAYAMA, Masayuki TANAKA, Shuhji AOKI, Takashi YAMANOUCI and Sadao KAWAGUCHI</i> ...	129
Radiation budget observation at Asuka Camp, Antarctica, in 1988—Cloud radiative forcing—(abstract)	<i>Teruo AOKI and Takashi YAMANOUCI</i> ... 129
On snow crystals of “Double Gohei Twin” type (abstract)	<i>Katsuhiko KIKUCHI and Hiroshi UYEDA</i> ... 130
Precipitation at Syowa Station (abstract)	<i>Makoto WADA, Shuhji AOKI, Katsumoto SEKO, Kouji MATSUBARA, Motohisa DOI, Tetsuro UEKUBO, Kenji OKADA and Sadao KAWAGUCHI</i> ... 131
Accumulation rate on the ice sheet surface in East Queen Maud Land, East Antarctica (abstract).....	<i>Shuhei TAKAHASHI</i> ... 131
Snow observations by MSR (abstract)	<i>Masahiro SUZUKI, Masami SASAKI, Tadashi MATSUMOTO, Kazuo FUJINO, Toshiyuki KAWAMURA and Takeo ABE</i> ... 132
The state of minor constituents in the Antarctic snow and ice (abstract) ..	<i>Satoru KANAMORI, Nobuko KANAMORI, Masataka NISHIKAWA, Okitsugu WATANABE and Fumihiko NISHIO</i> ... 133

Extraction of air bubbles in Antarctic ice core samples and determination of methane concentration (abstract) ... <i>Yasunori TOHJIMA, Takeshi TOMINAGA, Yoshihiro MAKIDE and Yoshiyuki FUJII</i> ...	134
Distribution of sea ice off Queen Maud Land from NOAA satellite AVHRR imagery (abstract) <i>Takayuki ISHIKAWA, Shuki USHIO, Kay I. OHSHIMA, Takashi YAMANOUCI, Katsumoto SEKO and Takatoshi TAKIZAWA</i> ...	135
Preliminary study of the G6, Antarctic ice core (abstract) <i>Hitoshi SHOJI and Yoshiyuki FUJII</i> ...	135
Structural analyses of ice obtained from the meteorite ice field around the Sør Rondane Mountains (abstract) ... <i>Shuji FUJITA and Shinji MAE</i> ...	136
Variations of oxygen isotopic composition and distribution of continental ice in the last ice age. (II) Massive ground ice body in Arctic Canada (abstract) <i>Kikuo KATO</i> ...	136
An apparent 1-year lag relationship of heavy snow years between Eurasia and North America (abstract) <i>Tomohiko IWASAKI</i> ...	137
Program of the Twelfth Symposium on Polar Meteorology and Glaciology.....	139
Author index	143