

CONTENTS

Preface	Okitsugu Watanabe and Takashi Yamanouchi	i
I: Arctic upper atmosphere environment		
Observations of the Arctic troposphere and lower stratosphere with the SOUSY Svalbard Radar (<i>scientific note</i>)	Jürgen Röttger	1
Observations of the polar <i>D</i> -region and the mesosphere with the EISCAT Svalbard Radar and the SOUSY Svalbard Radar (<i>scientific paper</i>)	Jürgen Röttger	9
Climatic mesospheric cooling: Employing the long time-series of ionospheric soundings from Norwegian stations (<i>scientific note</i>)	C. M. Hall	21
Conjugate imaging riometer observations at polar cusp/cap stations: A daytime absorption event for a specific change of solar wind conditions (<i>scientific paper</i>)	Masanori Nishino, Hisao Yamagishi, Natsuo Sato, Yozo Murata, Ruiyuan Liu, Peter Stauning and Jan A. Holtet	29
A study on the Arctic upper-atmosphere tide by EISCAT radar —Recent results and prospects— (<i>scientific note</i>)	Takehiko Aso	43
II: Atmospheric environment in the Arctic		
Recent contributions to long-term atmospheric studies at Koldewey-Station (<i>review</i>)	H. Gernhardt, R. Neuber and P. von der Gathen	49
An intercomparison campaign of ozone and temperature measurements in the Arctic (NAOMI-98, Ny-Ålesund/Spitsbergen) (<i>scientific note</i>)	R. Neuber, G. Beyerle, P. von der Gathen, P. Wahl, A. Dahl, M. Gross, Th. McGee, U. Klein and W. Steinbrecht	65
Temporal variations of atmospheric CO ₂ concentration and carbon isotope ratio in Ny-Ålesund, Svalbard (<i>scientific paper</i>)	Shinji Morimoto, Shuhji Aoki and Takashi Yamanouchi	71
Global quality control for long-lived trace gas measurements (<i>review</i>)	Roger Francey, Manfred Groening, Kim Holmén, Krung-Ryul Kim, John Miller, Pieter Tans and Neil Trivett	81
Black carbon and ionic species in the Arctic aerosol (<i>scientific paper</i>)	K. Eleftheriadis, S. Nyeki, K. Tørseth and I. Colbeck	91
Arctic study of tropospheric aerosol and radiation, ASTAR 2000-field plan (<i>report</i>)	Takashi Yamanouchi and Andreas Herber	101
Radiative forcing due to anthropogenic activities (<i>scientific note</i>)	F. Stordal and G. Myhre	107

Three years spectral resolved UV-measurements at Koldewey-Station (1997–1999) <i>(scientific paper)</i>	Christian Groß, Helmut Tüg and Otto Schrems... 113
Radiation and turbulence parameterizations at Ny-Ålesund, Svalbard Islands <i>(scientific note)</i>	Teodoro Georgiadis, Marianna Nardino, Francescopiero Calzolari, Vincenzo Levizzani, Jon Børre Ørbæk, Stefan Claes and Roberta Pirazzini... 125
Feasibility study on scientific balloon experiment at Ny-Ålesund <i>(scientific paper)</i>	Hideyuki Honda, Naoki Izutsu and Nobuyuki Yajima... 133
Climate change and its impacts on the arctic environment <i>(scientific paper)</i>	Gunter Weller... 143
Summit Greenland environment observatory <i>(report)</i>	Atsumu Ohmura... 153
III: Glaciological environment in the Arctic	
Atmospheric teleconnection between Japan and the Saint Elias Mountains, Yukon <i>(scientific paper)</i>	Gerald Holdsworth... 161
Stable oxygen isotope ratio observed in the precipitation at Ny-Ålesund, Svalbard <i>(scientific note)</i>	Makoto Igarashi, Kokichi Kamiyama and Okitsugu Watanabe... 169
Northern Eurasia glacier response to global climate change <i>(scientific note)</i>	Yuriy Kononov, Maria Ananicheva and Natalia Davidovich... 183
Effects on spectral reflectance from snow ageing <i>(scientific note)</i>	J-G. Winther, S. Gerland, J. B. Ørbæk, B. Ivanov, A. S. Zacheck and A. M. Bezgreshnov... 193
Sudden climatic change <i>(scientific note)</i>	Roy M. Koerner... 203
210-year ice core records of dust storms, volcanic eruptions and acidification at Site-J, Greenland <i>(scientific note)</i>	Yoshiyuki Fujii, Kokichi Kamiyama, Hitoshi Shoji, Hideki Narita, Fumihiko Nishio, Takao Kameda and Okitsugu Watanabe... 209
Japanese glaciological study efforts in the North Greenland Ice Core Project (NGRIP) <i>(report)</i>	Hitoshi Shoji and Okitsugu Watanabe... 221
Studies on climatic and environmental changes during the last few hundred years using ice cores from various sites in Nordaustlandet, Svalbard <i>(scientific paper)</i>	Okitsugu Watanabe, Hideaki Motoyama, Makoto Igarashi, Kokichi Kamiyama, Sumito Matoba, Kumiko Goto-Azuma, Hideki Narita and Takao Kameda... 227

Field observations of the Japanese Arctic Glaciological Expeditions in Svalbard from 1993 to 1995 (<i>report</i>)	243
.... Kokichi Kamiyama, Hideaki Motoyama and Okitsugu Watanabe...	243
Activities of the Japanese Arctic Glaciological Expedition in 1999 (JAGE 1999) (<i>report</i>)	
.... Hideaki Motoyama, Okitsugu Watanabe, Kumiko Goto-Azuma, Makoto Igarashi, Morihiro Miyahara, Tomoharu Nagasaki, Lars Karlöf and Elisabeth Isaksson...	253
<i>In-situ</i> snow temperature monitoring at an Arctic tundra site: A comparison of manual and automatic measurements (<i>scientific note</i>)	
.... Sebastian Gerland, Jan-Gunnar Winther and Knut Sand...	261
The geochemical phenomenon--Local geochemical fields in a glacier (<i>scientific note</i>)	
..... V. N. Makarov...	271
Determination of ice flow velocity in Svalbard from ERS-1 interferometric observations (<i>scientific paper</i>)	
.... Bernard Lefauconnier, Didier Massonnet and Geir Anker...	279
Ocean tides and loading in the Nordic Seas (<i>scientific note</i>)	
..... M. S. Bos and T. F. Baker...	291
Inversion of global tide gauge data for present-day ice load changes (<i>scientific paper</i>)	
..... Hans-Peter Plag and Hans-Ulrich Jüttner...	301
The determination of the reference point of the VLBI antenna in Ny-Ålesund (<i>scientific note</i>)	
..... Paolo Tomasi, Pierguido Sarti and Maria Rioja...	319
IV: Change in Arctic marine environment	
Scientific achievements in the First Chinese Expedition to the Arctic Ocean (<i>report</i>)	
..... Zhaoqian Dong and Weijia Qin...	331
Greenland Sea in winter (<i>report</i>)	
..... Hajime Ito...	337
The International North Water Polynya Study (NOW): A progress report (<i>scientific note</i>)	
..... L. Fortier, M. Fortier, M. Fukuchi, D. Barber, Y. Gratton, L. Legendre, T. Odate and B. Hargrave...	343
Persistent organic pollutants in Arctic animals in the Barents Sea area and at Svalbard: Levels and effects (<i>review</i>)	
..... Geir Wing Gabrielsen and Espen O. Henriksen...	349
Arctic Ocean change and consequences to biodiversity: A perspective on linkage and scale (<i>scientific note</i>)	
..... Eddy Carmack and Fiona McLaughlin...	365

Vernal export and retention of biogenic matter in the north-eastern North Atlantic and adjacent Arctic Ocean: The role of the Norwegian Atlantic Current and topography (<i>review</i>)	Paul Wassmann... 377
The upper layer circulation in Kongsfjorden and Krossfjorden—A complex fjord system on the west coast of Spitsbergen (<i>scientific paper</i>)	.. Randi Ingvaldsen, Marit Bø Reitan, Harald Svendsen and Lars Asplin... 393
The Arctic sea ice biological communities in recent environmental changes (<i>scientific note</i>)	..... Igor A. Melnikov, Ludmila S. Zhitina and Helena G. Kolosova... 409
Laboratory experiments on the frazil ice formation with application to the Arctic marine environment (<i>scientific note</i>)	..... Andrei G. Zatsepин and Pavel N. Golovin... 417
Stable isotope compositions of arctic copepods in the Greenland Sea in winter (<i>scientific note</i>)	..... Hiroshi Sasaki, Daisuke Kawai and Megumi Sato... 423
V: Arctic terrestrial ecosystems	
Personal ultraviolet-B dosimetry at Koldewey-Station by using an electronic dosimeter ELUV-14 (<i>scientific note</i>)	..... Saad El Naggar, Hartwig Gernandt, Nicole Spelten and Andrew Klaas... 429
Arctic hot and CO ₂ springs: Natural models of impact of climate change on terrestrial ecosystems (<i>scientific paper</i>)	..... Dmitri G. Zamolodchikov and Dmitri V. Karel... 437
Tundra plant responses to experimental and natural temperature changes (<i>scientific paper</i>)	..... Ulf Molau... 445
Pattern of seedling emergence of alpine plants: Comparisons between fellfield and snowbed habitats (<i>scientific note</i>)	..... Yoshiko Shimono and Gaku Kudo... 467
Ecological notes on the heath community on Mt. Ebeko, Paramushir Island, northern Kuriles (<i>scientific paper</i>)	..... Susumu Okitsu, Yoshinori Minami and Sergei Yu. Grishin... 479
Occurrence of bryophytes in Paramushir Island, northern Kuriles, Far East Russia (<i>scientific paper</i>)	..... Yoshinori Minami, Susumu Okitsu, Hiroshi Kanda, Valentina Ya. Cherdantseva and Sergei Yu. Grishin... 487
Biological characteristics of dark colored material (cryoconite) on Canadian Arctic glaciers (Devon and Penny ice caps) (<i>scientific paper</i>)	..... Nozomu Takeuchi, Shiro Kohshima, Kumiko Goto-Azuma and Roy M. Koerner... 495

Ecological role of fungal infections of moss carpet in Svalbard (<i>scientific paper</i>)	Tamotsu Hoshino, Motoaki Tojo, Hiroshi Kanda and Anne Marte Tronsmo... 507
Program of Second International Symposium on Environmental Research in the Arctic and Fifth Ny-Ålesund Scientific Seminar, 23–25 February 2000, Tokyo.....	515
Author index	519