

**Program of the 14th Symposium on Polar Meteorology and Glaciology,
held at National Institute of Polar Research, Tokyo,
July 9–10, 1991**

- I. Satellite Observation (Shuhei TAKAHASHI)
 - 1. Annually averaged NOAA-TIR Images of East Antarctica: Difference between the channels. Tokio KIKUCHI, Takashi YAMANOUCI and Katsumoto SEKO.
 - 2. Cloud distribution of inland of Antarctica, 1987, from NOAA AVHRR. Takashi YAMANOUCI and Akihiko MURATA.
- II. Ozone (Kazuo SHIBASAKI)
 - 3. The vertical distribution of ozone from northern mid-latitude to Antarctica in summer from 1987 to 1990. Kouji MATSUBARA, Motohisa DOI, Tetsuro UEKUBO, Kenji OKADA, Yasuo SHUDO, Yoshiyuki FUKUYAMA, Yoshio KATO, Hitomi MIYAMOTO, Kohji TSUKAMURA, Masayuki UEBAYASHI, Masao MORIMOTO, Seiji SHIBATA, Toyoo ABE, Miyoki IWAMOTO, Hiroshi INAYOSHI, Masamichi AONO and Sadao KAWAGUCHI.
 - 4. Ozonesonde observations at Syowa Station from Feb. 1990 to Jan. 1991. Masao MORIMOTO, Seiji SHIBATA and Kohji TSUKAMURA.
 - 5. The change of ozone vertical distribution with stratospheric temperature at Syowa Station, Antarctica. Shigeru CHUBACHI.
 - 6. Antarctic atmospheric condition in winter and ozone-hole. Kouji KONDOH, Yasunobu IWASAKA and Kohji KAWAHIRA.
 - 7. Effect of solar proton events on atmospheric chemistry. Masahiro KODAMA, Tsuyoshi KOHNO and Hiroshi KANZAWA.
- III. Ocean and Sea Ice (Kiyotomi SATOH)
 - 8. Report on air-sea ice-ocean interaction study of ACR, JARE-31. Takatoshi TAKIZAWA, Kiyotaka NAKAGAWA and Shuki USHIO.
 - 9. Observation of sea and ice by video camera on ship. Haruhito SHIMODA, Ken'ichiro MURAMOTO, Tatsuo ENDOH and Nobuo ONO.
 - 10. Analysis of sea ice concentration by image processing. Ken'ichiro MURAMOTO, Kohki MATSUURA, Tatsuo ENDOH, Haruhito SHIMODA, Nobuo ONO and Toru SHIINA.
 - 11. A large scale ocean eddy and characteristics of sea ice cover in the southern ocean. Masaaki WAKATSUCHI.
 - 12. Some characteristics of ocean circulations in the south hemisphere in relation to them in the southern ocean. Jiro FUKUOKA, Hideo MIYAKE and Nobuo ONO.
 - 13. Climate of ice sheet derived from Weddell Polynya. Fumihiko NISHIO, Okitsugu WATANABE and Peter JACOBS.
- IV. Poster Session: A
 - ① Minor Constituents and Aerosols in the Atmosphere
 - 14. Distribution measurements of light hydrocarbons on the shipboard "SHIRASE" (The results of JARE-31). Fumio SAKAMAKI and Akira SHIMIZU.
 - 15. The concentration of atmospheric methane at Syowa Station. Shuhji AOKI, Shohei MURAYAMA, Akira SHIMIZU and Sadao KAWAGUCHI.
 - 16. Oxidation of organic matter in the Antarctic atmosphere. Katsuji MATSUNAGA, Yasunobu IWASAKA, Yutaka KONDOH, Masahiko HAYASHI, Makoto KOIKE and Masahiko YAMATO.
 - ② Ozone
 - 17. Measurements of stratospheric NO₂ and ozone by visible spectrometers at Syowa Station in 1990. Yutaka KONDO, W. A. MATTHEWS, Akira SHIMIZU, Yasunobu IWASAKA, Makoto KOIKE, Masahiko HAYASHI, Tetsuro MASUDA, Takashi YAMANOUCI and Shuhji AOKI.
 - 18. Animation of total ozone map with TOMS on Nimbus 7. Shigeru CHUBACHI.

③ Ocean and Sea Ice

19. Estimation of surface albedo distribution in the Lützow-Holm Bay and its neighborhood with NOAA/AVHRR data. Kiyotaka NAKAGAWA.
20. Hydrography of Lützow-Holm Bay under fast ice. Takatoshi TAKIZAWA and Shuki USHIO.
21. Measurements of vertical temperature profile in coastal polynya with AXBT. Shuki USHIO and Takatoshi TAKIZAWA.
22. Observation of vertical temperature gradient at the surface of sea ice area, Antarctica. Tatsuo ENDOH and Haruhito SHIMODA.
23. Interannual fluctuation in atmospheric circulation on the southern hemisphere and fluctuation in Antarctic sea ice. Hiroyuki ENOMOTO, Shao-Fen TIAN and Takashi YAMANOUCI.
24. Interannual variability of ice cover and upper ocean near Svalbard. Nobuo ONO.
25. Variation of sea ice extension around Greenland. Kanichiro MATSUMURA and Tatsuo ENDOH.
26. Measurement of dielectric constant of model ice. Hayao TAKASHIMA, Hisao YAMAKOSHI, Toshio MAEDA and Akio SAKURAI.
27. Analysis of multi-layer structure of sea ice by electro-magnetic wave albedo—Algorithm of Analysis—. Hisao YAMAKOSHI, Hayao TAKASHIMA, Toshio MAEDA and Akio SAKURAI.

④ Meteorological and Glaciological Observations

28. Microwave signatures of continental snow and sea ice obtained by airborne observation. Takashi YAMANOUCI and Makoto WADA.
29. Falling motion of snowflakes. Ken'ichiro MURAMOTO, Kohki MATSUURA, Hiroyuki KONISHI, Tatsuo ENDOH, Toru SHIINA and Koh-ichi KITANO.

V. Poster Session: B

⑤ Satellite and Radar Observations

30. Surface conditions of the ice sheet, Antarctica, derived from NOAA AVHRR and microwave images. Teruo FURUKAWA, Katsumoto SEKO, Okitsugu WATANABE and Makoto WADA.
31. Vapor transport to Antarctic interior regions. Katsumoto SEKO, Tetsuro UEKUBO, Kohji MATSUBARA, Okitsugu WATANABE, Makoto WADA and Shuhji AOKI.
32. Climatology of katabatic wind revealed by NOAA AVHRR data. Katsumoto SEKO, Tokio KIKUCHI, Shuhei TAKAHASI, Takashi YAMANOUCI and Tatsuo ENDOH.
33. Clouds observed from ground and observed from satellites (II). Makoto WADA, Katsumoto SEKO and Takashi YAMANOUCI.
34. Amount of snowfall and blowing snow measured by a radar and a visibility meter at Syowa Station. Hiroyuki KONISHI, Akira MATSUMOTO and Tatsuo ENDOH.
35. Study of estimation for snow fall precipitations by meteorological radar echo (1). Mitsuo HOSHIYAMA, Akira NISHITSUJI, Sadao KAWAGUCHI, Yoshiyuki FUJII and Makoto WADA.

⑥ Ice Dynamics

36. Oxygen isotope profiles of deposited snow in different depositional environments of the Antarctic ice sheet (II). Yutaka AGETA and Kokichi KAMIYAMA.
37. Chemical composition of snow reflected by the behavior of OH radicals in the atmosphere. Kokichi KAMIYAMA, Okitsugu WATANABE, Eiichiro NAKAYAMA, Satoru KANAMORI and Nobuko KANAMORI.
38. Stability and instability of ice sheet due to ice fabric development. Nobuhiko AZUMA.
39. Laboratory test on construction technique of ice dome model and its strength. Toshio HANNUKI, Kenji FUTAMI, Keita TSUKUI and Kenji ISHIZAWA.

⑦ Core Analysis

40. The AC conductivity measurement for impurity analysis of ice cores. Shigeru SUEOKA, Takeo HONDOH, Nobuhiko AZUMA and Shinji MAE.
41. A feasibility study on helium isotopes in ice core. Yuji SANO, Yasunori TOJIMA, Hiroshi WAKITA, Yoshihiro MAKIDE, Takeshi TOMINAGA and Yoshiyuki FUJII.
42. Organic components in the Greenland Ice core. Kimitaka KAWAMURA, Kazuhisa YOKOYAMA, Ikuko SUZUKI, Yoshiyuki FUJII and Okitsugu WATANABE.

43. Methanesulfonic acid and major ions in the ice core from Site-J, Greenland. Keisuke SUZUKI, Makoto IGARASHI, Yoshiyuki FUJII, Okitsugu WATANABE and Kokichi KAMIYAMA.
- ⑧ Stratosphere and Climate
44. Anti-phase of temperature trend between the lower and upper stratosphere in Antarctica. Kohji KAWAHIRA and Toshihiko HIROOKA.
 45. Moisture budget in the Antarctic atmosphere. Koji YAMAZAKI.
 46. Multi-scattering model for atmosphere-snow system. Teruo AOKI.
- VI. Minor Constituents and Aerosols in the Atmosphere (Masayuki TANAKA)
47. Measurement of carbon monoxide at Antarctic Syowa Station. Akira SHIMIZU, Hajime AKIMOTO and Gen INOUE.
 48. Measurements of methane concentration in the air and surface sea water on board icebreaker "SHIRASE" by flask sampling. Takakiyo NAKAZAWA, Gen HASHIDA, Shuhji AOKI, Akira SHIMIZU, Masahiko HAYASHI, Shohei MURAYAMA, Masayuki TANAKA and Sadao KAWAGUCHI.
 49. Variations of carbon isotope ratios of atmospheric carbon dioxide over Japan. Shinji MORIMOTO, Takakiyo NAKAZAWA, Masayuki TANAKA and Shuhji AOKI.
 50. DMS concentrations over the southern ocean. Seiji KOGA and Masahiko HAYASHI.
 51. Development of spectrometer for the higher precision measurement of OCIO in the polar stratosphere. Hiroshi ITO, Makoto KOIKE and Yutaka KONDO.
 52. Aerosol number concentration in the Antarctic winter stratosphere. Yasunobu IWASAKA, Shuhji AOKI and Koji MATSUBARA.
 53. Chemistry of atmospheric aerosols in Antarctica. Satoru KANAMORI, Nobuko KANAMORI, Okitsugu WATANABE and Masataka NISHIKAWA.
- VII. Meteorological and Glaciological Observations (Yuji KODAMA)
54. Polar Patrol Balloon completed a circumpolar flight in the Antarctic stratosphere for December 1990–January 1991: A preliminary comparison between the PPB trajectory and the trajectory calculated from the JMA objective analysis. Hiroshi KANZAWA, Ryoichi FUJII, Koji YAMAZAKI and Manabu D. YAMANAKA.
 55. Synoptic characteristics of blizzard in July 1990 at Syowa and Asuka Stations. Masayuki UEBAYASHI, Akira IWASAKI and Kohji TSUKAMURA.
 56. Microwave remote sensing of snowpacks. Toshio KOIKE, Tomoyuki SUHAMA, Masako KOIKE and Takashi YAMANOUCI.
 57. Measurement of dielectric constants of polar and artificial ice at 10 GHz. Shuji FUJITA, Manabu SHIRAISHI and Shinji MAE.
 58. Problems on the measuring internal ice layers by radio echo sounding. Seiho URATSUKA, Shinji MAE, Masayoshi NAKAWO and Fumihiko NISHIO.
 59. Ecology of snow and ice. Shiro KOHSHIMA.
- VIII. Snow and Ice Crystals (Takehiko GONDA)
60. Snow crystals observed at Syowa Station—cloud droplets on the surface of snow crystals—. Hiroyuki KONISHI, Akiko SHIMIZU and Akira YAMASHITA.
 61. Growth of single-crystal frozen water droplets at temperatures between $-40\sim-55^{\circ}\text{C}$. Chuji TAKAHASHI and Fumie NAKAJIMA.
- IX. Ice Dynamics (Kokichi KAMIYAMA)
62. Is the ice at Y100 flowing up the slope? Masayoshi NAKAWO.
 63. Experimental studies on the densification processes of firn at the accumulation area of temperate glaciers. Katsuhisa KAWASHIMA, Tomomi YAMADA and Gorow WAKAHAMA.
 64. Catastrophe of the inversion type glaciers: breakdown of the "water reservoir". Hisashi OZAWA and Gorow WAKAHAMA.
 65. Minor constituents in Antarctic snow (Mizuho Plateau). Nobuko KANAMORI, Satoru KANAMORI, Okitsugu WATANABE and Masataka NISHIKAWA.

X. Core Analysis (Hideki NARITA)

66. Vertical distribution of Pb-210 in an ice core from Spitsbergen. Toshitaka SUZUKI and Yoshiyuki FUJII.
67. Variations of the past atmospheric CH₄ concentration in the northern hemisphere deduced from Site-J ice core. Toshinobu MACHIDA, Takakiyo NAKAZAWA, Masayuki TANAKA, Yoshiyuki FUJII, Shuhji AOKI and Okitsugu WATANABE.
68. A 200 year precipitation chemistry record from the area of Dye 3, Greenland. Kumiko GOTO-AZUMA and Chester C. LANGWAY, Jr.
69. Regional comparative study on microparticles in polar ice cores. Akira HIGASHI, Kenji SASAKI, Hajime YANO and Manami OHARA.

XI. Stratosphere and Climate (Masato SHIOTANI)

70. Flow fields induced by temporal variation of geostrophic vorticity in the lower atmospheric layer, Antarctica. Hyo CHOI and Joobaek LEE.
71. Implications of ice sheets for climatic change in the last ice age (I). Kikuo KATO.