

**Program of the Eleventh Symposium on Polar Meteorology and Glaciology,
held at National Institute of Polar Research, Tokyo,
July 12–13, 1988**

- I. Ozone (Hisashi MURAMATSU)
1. Ozone observations at Syowa Station in 1987 by JARE 28. Susumu KANETO, Takashi YAMANOUCI, Hidetoshi SUGAWARA, Hiroyuki OGIHARA and Akira YAMAMOTO.
 2. Global decreases in total ozone during the winter months. Toshinori TAKAO.
 3. On the relationship between the total ozone change and meteorological data in the stratosphere (part 2). Shigeru CHUBACHI.
 4. Seasonal variation of ozone simulated by a general circulation model. Isamu YAGAI.
- II. Chemistry in the Atmosphere, Snow and Ice (Yasushi KITANO)
5. The elemental composition of marine aerosol on the Antarctic Sea. Masataka NISHIKAWA, Tuguo MIZOGUCHI, Satoru KANAMORI, Nobuko KANAMORI, Shuhji AOKI and Yoshimasa TOYOTA.
 6. Marine aerosols sampled at sub-Antarctic region—Electron microscopic measurements—. Masahiko YAMATO, Yasunobu IWASAKA, Akira ONO, Takashi YAMANOUCI and Fumihiko NISHIO.
 7. Chlorofluorocarbons and methane in the atmosphere in Antarctica and Hokkaido. Yoshihiro MAKIDE, Yasunori TOHJIMA, Ryutaro YAMAKI and Takeshi TOMINAGA.
 8. International co-operative observation of stratospheric NO₂, O₃, and chlorine oxide at Syowa Station (a plan). Yutaka KONDO, Nobuo MATSUURA, Masumi TAKAGI, Akira IWATA, Sadao KAWAGUCHI, Hiroshi KANZAWA, Shuhji AOKI, W. A. MATTHEWS, R. L. MCKENZIE and P. V. JOHNSTON.
 9. Chemical composition of Antarctic snow and ice. Satoru KANAMORI, Nobuko KANAMORI, Masataka NISHIKAWA and Fumihiko NISHIO.
 10. Correlation of tephra layers in the Yamato meteorite ice field. Takaaki FUKUOKA, Kazuya SHIMIZU, Fusao ARAI and Fumihiko NISHIO.
- III. Ice Core (Renji NARUSE)
11. Past ice sheet elevation estimated from total gas content of Mizuho 700 m ice core. Takao KAMEDA, Masayoshi NAKAWO and Shinji MAE.
 12. Climate in the Holocene epoch revealed by the Mizuho 700 m ice core. Masayoshi NAKAWO, Okitsugu WATANABE and Takao KAMEDA.
 13. Distribution and $\delta^{15}\text{O}$ of continental ice during the last glaciation (I). Kikuo KATO.
- IV. Atmospheric Circulation and Climate (Jiro INOUE)
14. Arctic and Antarctic general circulations interacting with internal gravity waves: Part II. Manabu YAMANAKA.
 15. Interannual changes of stratospheric temperatures based on recent satellite observations. Toshihiko HIROOKA.
 16. Fluctuations of the atmospheric circulation in the middle and high latitudes of the Southern Hemisphere. Hideo KAKEGAWA, Tetsuzo YASUNARI and Takeshi KAWAMURA.
 17. Interannual fluctuation of Northern Hemisphere snow cover and sea ice and climate. Iwao TSUCHIYA.
- V. Special Session: Mass Transport in the Polar Regions (Takakiyo NAKAZAWA)
18. Heat and water budgets of the atmosphere of the polar regions. Kooiti MASUDA.

19. Interrelation between the variations of temperature and ozone in the Antarctic stratosphere. Kohji KAWAHIRA and Toshihiko HIROOKA.
 20. Seasonal changes in Antarctic sulfate particles—Global budget of sulfate—. Masahiko YAMATO, Yasunobu IWASAKA, Akira ONO, Fumihiko NISHIO and Masashi FUKABORI.
 21. Organic components of snow drift over Mizuho Plateau. Keiichi OHTA, Fumihiko NISHIO and Kazuo OSADA.
 22. A preliminary estimation of amount of material transport by drifting snow at Mizuho Station. Kazuo OSADA and Keiji HIGUCHI.
 23. Transportation of continental crustal dust and oceanic sea salt to the Antarctic ice sheet on the basis of analyses of a 700 m deep ice core from Mizuho Station. Yoshiyuki FUJII, Okitsugu WATANABE, Kokichi KAMIYAMA.
- VI. Special Session: Mass Transport in the Polar Regions, General Discussions (Tetsuzo YASUNARI)
- VII. Ice Dynamics (Gorow WAKAHAMA)
24. Relation between the special radar echo from within the ice sheet and the configuration of the ground (I). Mitsuo HOSHIYAMA, Akira NISHITSUJI, Fumihiko NISHIO, Makoto WADA and Okitsugu WATANABE.
 25. Radio scattering characteristics of Antarctic Ice Sheet: Analysis of A-scope form of 179 MHz Airborne Radio Echo. Seiho URATSUKA, Fumihiko NISHIO, Hirokazu OHMAE and Shinji MAE.
 26. Inner and basal characteristics of the Antarctic ice sheet by bi-frequency radio echo sounding. Hirokazu OHMAE, Fumihiko NISHIO, Seiho URATSUKA and Shinji MAE.
 27. Responses of Shirase Clacier to climatic warming. Fumihiko NISHIO.
 28. Ice dynamics at Dye-3, Greenland. Hitoshi SHOJI and C. C. LANGWAY, Jr.
 29. Ice shelf distribution. Fumihiko NISHIO, Seiho URATSUKA and Hirokazu OHMAE.
- VIII. Meteorological and Glaciological Observations and Models (Tetsuo OHATA)
30. Meteorological observations at Syowa Station in 1987 by JARE 28. Akira YAMAMOTO, Hiroyuki OGIHARA, Hidetoshi SUGAWARA and Susumu KANETO.
 31. Automatic observation of weather and snow amount during a whole year of 1987 at S18, Antarctica. Tatsuo ENDOH, Takashi YAMANOUCI, Gorow WAKAHAMA, Sadao KAWAGUCHI, Shinichi MATSUMOTO and Takashi KAWAZOE.
 32. Drifting snow convergence in the coastal region of East Queen Maud Land. Shuhei TAKAHASHI.
 33. On relative settlement of the living hut built on snowfield at Asuka camp in Antarctica. Toshio HANNUKI, Toshio SATO, Yasuaki HONDA and Kenji ISHIZAWA.
 34. On the influence of improvement in radiation processes on surface heat budget over the Antarctic in MRI·SPM. Kiyotaka SHIBATA and Masaru CHIBA.
- IX. Poster Session (Shuhei TAKAHASHI)
- 35(P). Ozone observation on board research vessel "SHIRASE" from equator to the Antarctic. Koji MATSUBARA, Motohisa DOI, Tetsuro UEKUBO, Kenji OKADA and Sadao KAWAGUCHI.
 - 36(P). Vertical profiles of the aerosol extinction coefficient at Syowa Station. Masataka SHIOBARA.
 - 37(P). Report on the ACR observation by JARE 28. Takashi YAMANOUCI and Hiroaki TAKABE.
 - 38(P). Seasonal variation of snow cover over the Northern Hemisphere. Kooiti MASUDA, Yuki MORINAGA, Atusi NUMAGUTI and Ayako ŌUCHI.
 - 39(P). A 3-D image of the Antarctic Ice Sheet. Tokio KIKUCHI.
 - 40(P). Ice thickness, heat balance and mass balance at Anvers Island Ice Cap, Antarctic Peninsula. Gino CASASSA.

- 41(P). A new photometric method to rapidly analyze ice fabrics and crystal size of ice core. Nobuhiko AZUMA and C. C. LANGWAY, Jr.
- 42(P). Densification of polar ice after the close-off. Pierre PIMENTA and Paul DUVAL.
- 43(P). Effect of polar stratospheric clouds on geochemical cycle of stratospheric material—Stratospheric particle precipitation. Masahiko HAYASHI and Yasunobu IWASAKA.
- 44(P). Antarctic Climate Research observations by JARE 30. Tatsuo ENDOH, Hiroyuki KONISHI, Hideo KAKEGAWA and Shohei MURAYAMA.
- X. Snow and Ice Crystals (Katsuhiko KIKUCHI)
45. Analysis of snowflake shape by image processing. Ken'ichiro MURAMOTO, Toru SHIINA, Tatsuo ENDOH, Hiroyuki KONISHI and Koh'ichi KITANO.
46. On snow crystal of the combination of bullets type. Chuji TAKAHASHI.
47. Experimental study of halo. Yoshinori FURUKAWA and John HALLETT.
- XI. Sea Ice (Kou KUSUNOKI)
48. Relationships between sea ice concentration and meteorological elements. Yuki MORINAGA.
49. On the formation mechanism of the ice-ocean eddy off the Hokkaido Coast in the Sea of Okhotsk. Keigh I. OHSIMA and Masaaki WAKATSUCHI.
50. Processes of rapid-sea ice production (IV)—Brine exclusion with frazil ice production—. Shuki USHIO and Masaaki WAKATSUCHI.