

**Program of the 16th Symposium on Coordinated Observations  
of the Ionosphere and the Magnetosphere in the Polar Regions  
held at the National Institute of Polar Research, Tokyo,  
December 15–16, 1992**

- I. HF waves
  1. Influence of density irregularity on high-frequency wave propagation. H. UEDA, H. MATSUMOTO, Y. OMURA and T. OKUZAWA.
  2. The analysis of electrostatic bursts observed by the Akebono satellite in the polar cap region. E. MATSUMOTO and H. OYA.
  3. Mode conversion processes of terrestrial hectometric radiation observed by Akebono (EXOS-D) satellite. M. IZIMA and H. OYA.
- II. VLF waves
  4. The observation system of large scale disturbance of the lower ionosphere by the use of atmospherics. Y. HONGO, S. SHIMAKURA and M. HAYAKAWA.
  5. Estimation of wave distribution function of magnetospheric VLF waves: solution independent of wave polarisation. S. SHIMAKURA, A. J. SMITH, K. NARA and M. HAYAKAWA.
  6. Time variation of amplitude and phase of VLF waves observed by Akebono satellite. Y. KASAHARA, T. OHMAE, P.A. ROSEN, M. HATA, I. NAGANO, Y. OHMORI and I. KIMURA.
  7. Determination of the sense of k-vector for VLF waves observed by Akebono. K. YOSHIDA, H. KENMOCHI, Y. KASAHARA and I. KIMURA.
  8. Observation of nonlinear wave-wave interactions in the subauroral ionosphere. S. OHNAMI, M. HAYAKAWA, T. ONDOH and T.F. BELL.
  9. VLF waves observed in the tethered rocket experiment (CHARGE-2B). M. USUI, T. ABE, S. SASAKI, K. KOYAMA, N. KAWASHIMA and W. J. RAITT.
- III. ULF waves
  10. Does the Pi2 cavity really exist? T. KITAMURA and M. SHINOHARA.
  11. An excitation of global Pc5 pulsation by dynamic pressure change in the solar wind. O. SAKA and T. IJIMA.
  12. Properties of global Pc5. S. FUJITANI, T. ARAKI, K. YUMOTO, K. SHIOKAWA, L. CHANG-FA, H. LUHR, D. ORR and D.K.R. RAO.
  13. Cavity-mode MHD oscillations with energy flow across the outermost L-shell. S. FUJITA and K.-H. GLASSMEIER.
  14. Midday activity enhancement of polar cusp ULF waves and magnetic field variations observed at Godhavn, and its relation to dayside auroral activity. T. SAKURAI, K. MAKITA, K. KATOH and H. YAMAGISHI.
- IV. Substorm and Related Phenomena
  15. Relationship between IMF By and geomagnetic activity in the southern polar cap. S. SAROSO.
  16. IMF By dependence of "polar shower" and transpolar arc. I. SHINOHARA, T. YAMAMOTO, E. KANEDA, T. MUKAI and S. KOKUBUN.
  17. Dependence of the size of the polar cap on the substorm phase: Viking and DE-1 Observations. K. ITOH, Y. KAMIDE, T. OGUTI, T. OGINO, N. NISHITANI, J.S. MURPHREE, J.D. CRAVEN and L.A. FRANK.
  18. Variations of auroral oval during magnetic quiet conditions. T. HIRASAWA.
  19. The substorm-associated evolution of plasma regime and Birkeland currents in the dayside high latitudes. M. WATANABE and T. IJIMA.
  20. Plasmapheric disturbances synchronized with the magnetospheric substorm. A. MORIOKA and H. OYA.
- V. Magnetosphere-Ionosphere Coupling

21. The relative importance of the electric field and the Hall conductivity in the auroral electrojets. M. SATO AND Y. KAMIDE, S. NOZAWA AND A. BREKKE.
  22. Comparison between the ground-based observations of the auroral luminosity and the ionospheric conductivity deduced from DE-2 observations. M. ISHII, T. IYEMORI, M. SUGIURA AND J.A. SLAVIN.
  23. Are Birkeland current flow directions consistent with divE? R. FUJII.
  24. Spatial structures of the cusp field-aligned current system observed by the Akebono satellite. H. FUKUNISHI, T. MUKAI, H. HAYAKAWA AND K. TSURUDA.
  25. Magnetosphere-ionosphere coupling process in the Poleward boundary region of the nightside auroral oval. T. NAGATSUMA, H. HUKUNISHI, T. MUKAI, H. HAYAKAWA AND A. MATSUOKA.
  26. Field-aligned potential drop structure observed by the Akebono satellite. T. SAKANOI, H. FUKUNISHI AND T. MUKAI.
  27. Ion temperature in the polar ionosphere observed by Akebono/SMS. E. SAGAWA AND S. WATANABE.
- VI. Heliosphere, Magnetosphere Boundary
28. Structure of the polar region of the outer heliosphere. H. WASHIMI.
  29. Magnetic structure change in the solar coronal region and its effect on substorm. T. SAITO, T. TAKAHASHI, S. TSUNETA, Y. KOZUKA AND T. WATANABE.
  30. Observation of dayside magnetopause made by GEOTAIL. K. TSURUTA, S. KOKUBUN, T. YAMAMOTO, H. HAYAKAWA, M. NAKAMURA, A. MATSUOKA, K. HAYASHI, T. OKADA AND F. MOZER.
  31. Stratospheric and tropospheric changes associated with solar proton events. T. WATANABE AND E. FUJITA.
- VII. Geomagnetic Storms
32. Statistics on geomagnetic storms. K. MARUBASHI, K. OHTAKA AND H. MIYAOKA.
  33. D-region observations of polar cap absorption events in 1981-1989. H. RANTA.
  34. Dynamical response of the thermosphere to a major geomagnetic storm—relative importance of general circulation and atmospheric gravity waves—. S. MAEDA AND H. FUJIWARA.
  35. OI630.0 nm airglow emission enhancements associated with TID events during the February 27, 1992 storm. M. KUBOTA, I. OHKUBO, S. OKANO AND H. FUKUNISHI.
  36. EXOS-D observations of enhanced electric fields during the giant magnetic storm in March 1989. T. OKADA, H. HAYAKAWA, K. TSURUDA, A. NISHIDA AND A. MATSUOKA.
  37. Characteristics of magnetic variations caused by low-latitude aurorae observed around 210° magnetic meridian. T. ENDO, K. YUMOTO, K. SHIOKAWA, Y. TANAKA AND T. OGUCHI.
  38. DMSP satellite and ground-based photometric observations of the low-latitude aurora. H. MIYAOKA, T. HIRASAWA, K. YUMOTO AND Y. TANAKA.
- VIII. Aurora and Related Phenomena
39. On the method of tomography analysis for the aurora stereo observation (IV). T. ASO, T. YABU, T. HASHIMOTO, M. ABE, M. EJIRI, H. MIYAOKA, T. ONO AND H. YAMAGISHI.
  40. Characteristics of the auroral particles measured by using a photometric observation technique. T. ONO, K. MORISHIMA, S. KOKUBUN AND T. HIRASAWA.
  41. Relations between energy parameters and number flux of precipitating auroral electrons derived from intensity ratio of auroral emissions. K. MORISIMA, T. ONO, S. KOKUBUN AND T. HIRASAWA.
  42. Analysis on auroral conjugacy using TV data of multi-stations. H. MINATOYA, T. ONO, N. SATO, H. YAMAGISHI, R. FUJII, K. MAKITA AND T. YOSHINO.
  43. Double speed spectrum of the 50 MHz radar echo associated with auroral arc. K. IGARASHI AND T. OGAWA.
  44. HF doppler observation near the cusp. K. NOZAKI AND T. KIKUCHI.
- IX. Polar Patrol Balloon Observations
45. Some comments to stratospheric balloon experiments in polar regions. M. KODAMA.
  46. Polar patrol balloon project in Japan. M. EJIRI, N. YAJIMA AND PPB WG team.
  47. Measurement system for geomagnetic field planned by the JARE-34 in the polar patrol balloon (PPB) experiments. F. TOHYAMA, T. TONEGAWA, N. SATO, A. KADOKURA, M. EJIRI, M. NAMIKI, N. YAJIMA AND PPB W.G.

48. Ionospheric electric field observation by using the polar patrol balloon of JARE-34 (plan). A. KADOKUKRA, M. EJIRI, E.A. BERING, J.R. BENBROOK, R. FUJII, Y. TONEGAWA and PPB Group.
- X. Future Plan
49. Observation plan of stratospheric chemical species in Antarctica with millimeter / sub-millimeter wave telescope. S. OCHIAI, H. MASUKO, K. MARUBASHI, T. HASEGAWA, M. HAYASHI and M. EJIRI.
50. Feasibility study on sub-millimeter radio astronomy in Antarctica. H. HASEGAWA, M. HAYASHI, K. OCHIAI, H. MASUKO, K. MARUBASHI and M. EJIRI.
51. Ionospheric tomography by using NNSS beacon waves. M. KUNITAKE, K. OHTAKA, T. TANAKA, T. OGAWA, T. KONDO, M. IMAE, H. ISHIBASHI, T. KIKUCHI, K. IGARASHI, K. MARUBASHI, T. ONO, A. MORITA and H. OYA.
- P. Poster Session
- P1. Conjugacy of auroral absorption images observed by a geomagnetic conjugate pair of imaging riometers. H. YAMAGISHI, I. YAMAZAKI, M. NISHINO, T. KIKUCHI and N. SATO.
- P2. Characteristics of dayside CNA images obtained by imaging riometer at Ny-Alesund (L=16). M. NISHINO, Y. TANAKA, T. OGUCHI, H. YAMAGISHI, J.A. HOLTET and P. STAUNING.
- P3. An analysis for total intensity of the geomagnetic field obtained by the polar patrol balloon (PPB) -1 and -2. N. MATSUHASHI, N. TAKAMURA, F. TOHYAMA, T. SAKURAI, Y. TONEGAWA, R. FUJII and M. EJIRI.
- P4. Pc1 waves observed by DE-1. A. OKA, T. IYEMORI, M. SUGIURA and J.A. SLAVIN.
- P5. Characteristics of ULF waves in the magnetosphere observed by the EXOS-D satellite. H. MACHIYA, TONEGAWA and T. SAKURAI.
- P6. Studies of CNA pulsations observed by an imaging riometer and Pc5 geomagnetic pulsations observed by multi-stations. K. KATO, H. YAMAGISHI, Y. TONEGAWA, N. SATO and O. SAKA.
- P7. Occurrence of equatorial ULF pulsations correlated with plasma sheet particle injections. O. WATANABE and O. SAKA.
- P8. A new direction finding technique for whistlers and atmospherics. N. SHIMA, Y. WATANABE, S. SHIMAKURA and M. HAYAKAWA.
- P9. Comparison between frequency analysis and phase analysis on direction finding of non-stationary VLF waves. H. OHYA, Y. HONGO, H. UEDA and S. SHIMAKURA.
- P10. Direction finding of magnetospheric VLF/ELF waves based on wave distribution function method. M. YAMAGUCHI, K. HATTORI, N. IWAMA and M. HAYAKAWA.
- P11. A discussion on propagation characteristics of nose whistlers observed by Akebono satellite in the magnetosphere. T. SOUDA, Y. KASAHARA, T. MATSUO and I. KIMURA.
- P12. Theoretical consideration of hiss-triggered chorus emission. K. HATTORI, M. HAYAKAWA, D. LAGOUTTE, M. PARROT and F. LEFEUVRE.
- P13. Conjugate measurements of whistler-mode waves of LF Decca signal in Australia. Y. TANAKA, H. TAKAHASHI, M. NISHINO and Y. KATO.
- P14. Features of trans-polar arcs. E. KANEDA and I. SHINOHARA.
- P15. On-line data monitoring system for geomagnetic variation. T. TAKAHASHI, T. TAMURA and T. SAITO.
- P16. Water vapor measurement of the polar middle atmosphere (plan) -new frostpoint zonde- Y. IWASAKA, M. HAYASHI, T. SHIBATA and K. MATSUNAGA.
- P17. Observation of atmospheric waves related to the historical observations of Infrasonic waves. S. MINAMI and Y. SUZUKI.
- P18. Time comparison experiment between antarctic Syowa station and Japan via GPS. N. KOTAKE, M. AIDA, M. SHIBUKI and T. SATO.
- P19. On the sources of interference signals of riometer observations. A. YUKIMATSU, M. EJIRI, K. KADOKURA and T. ARAKI.