

**Program of the 17th Symposium on Coordinated Observations of the Ionosphere  
and the Magnetosphere in the Polar Regions held at the National  
Institute of Polar Research, Tokyo,  
December 14-15, 1993**

- I. Auroral Optical Observations
  1. Achievements and prospects in studies of dynamic morphology of auroras. T. OGUTI.
  2. Polar cap auroral observations in Greenland. K. MAKITA, H. YAMAGISHI, M. EJIRI, M. AYUKAWA, T. SAKURAI and T. SAKANOI.
  3. Computed auroral tomography by multi-station imaging. T. ASO, A. URASHIMA, T. YABU, T. HASHIMOTO, M. ABE, M. EJIRI, H. MIYAOKA and T. ONO.
  4. Evaluation of energy parameters of auroral electrons by using photometric observations and its application to investigate a generation mechanism. K. MORISHIMA, T. ONO and K. HAYASHI.
- II. Imaging Riometer Observations
  5. Imaging riometers -Development, application and future plan. H. YAMAGISHI, N. SATO, M. NISHINO, M. SATO, Y. KATO, T. KIKUCHI and I. YAMAZAKI.
  6. Imaging riometer developed at CRL (comment). H. MORI.
  7. Auroral absorption image of the discrete aurora observed with the imaging riometer. T. KIKUCHI, H. YAMAGISHI and M. NISHINO.
  8. On the effect of the radio star scintillation on absorption images observed by imaging riometers. Y. FUJITA, H. YAMAGISHI and T. YOSHINO.
  9. Simulation scheme for the study of physical coupling of heterogenous regions. T. TANAKA.
- III. Modeling and Computer Simulations
  10. Magnetospheric MHD oscillations generated by the Kelvin-Helmholtz instability. S. FUJITA and K.-H. GLASSMEIER.
  11. Control of field line resonances by the ionospheric hall current. A. YOSHIKAWA, M. ITONAGA and T. KITAMURA.
  12. High energy particle penetration into the inner magnetosphere. M. EJIRI, H. MIYAOKA, A. KADOKURA and T. OGUTI.
  13. An interpretation of a low latitude aurora event with a magnetospheric particle tracing. H. MIYAOKA and M. EJIRI.
  14. Simulation of particle precipitation and emission processes in electron auroras. K. ONDA and Y. ITIKAWA.
- IV. Polar Patrol Balloon Observations
  15. Summary of polar patrol balloon (PPB) project in Antarctica. M. EJIRI.
  16. Launching operation PPB in 1992. M. NAMIKI, Y. TONEGAWA, N. SATO and PPB working group.
  17. Observations of auroral X-rays with Antarctic polar patrol balloons (PPB). H. SUZUKI, Y. HIRASIMA, H. MURAKAMI, H. SHIMOBAYASHI, T. YAMAGAMI, M. NAMIKI, M. NAKAGAWA, Y. TONEGAWA, M. EJIRI, N. SATO, M. KODAMA and PPB working group.
  18. Balloon observations for vector measurement of the geomagnetic field in Antarctica. F. TOHYAMA, Y. TONEGAWA, A. KADOKURA, M. EJIRI, N. SATO, N. YAJIMA, M. NAMIKI, N. MATSUHASHI, Y. EBIHARA and PPB working group.
  19. Importance of PPB balloon observation in research of atmospheric chemistry. Y. IWASAKA, M. HAYASHI and Y. KONDO.
- V. Akebono (EXOS-D) Observations
  20. Distribution patterns of aurora in substorm. E. KANEDA.
  21. Ion precipitation structure in the polar region related to sunward convection. A. MATSUOKA,

- A. NISHIDA, K. TSURUDA, H. HAYAKAWA, T. MUKAI and EXOS-D EFD team.
22. Relation of electric field and particle precipitation in the polar cap region inferred from AKEBONO (EXOS-D) observation. T. OBARA, T. MUKAI, H. HAYAKAWA, A. MATSUOKA, K. TSURUDA and A. NISHIDA.
  23. A development of magnetic field variations in the cusp region observed by the EXOS-D satellite and its relation to the interplanetary magnetic field. T. SAKURAI and N. IWATA.
  24. Recent AKR observation by EXOS-D satellite. A. MORIOKA.
  25. Temporal and spatial variations of Te in the plasmasphere. K.-I. OYAMA, I. KUTIEV, T. ABE, Y. SAKAIDE and Y. CHOI.
  26. Hydrogen gyrotron harmonic waves observed by AKEBONO (EXOS-D) satellite in polar region. K. SAKAMOTO, Y. KASAHARA, I. KIMURA. and T. MUKAI.
- VI. Conjugate Observations in Iceland, 1993
27. A digital all-sky camera using CCD device. T. ONO.
  28. Conjugate study of ionospheric structure with GPS and NNSS satellite beacon. K. OHTAKA, M. KUNITAKE, T. MARUYAMA and T. OKUZAWA.
  29. Simultaneous observation of VLF waves at Syowa and Iceland: preliminary results. S. SHIMAKURA, N. SATO, A. J. SMITH and M. HAYAKAWA.
- VII. JARE-33~35 Observations
30. The 33rd upper atmosphere observation at Syowa Station. I. YAMAZAKI, Y. TAKAHASHI, H. MINENO and K. OGAWA.
  31. Optical observations of aurora and airglow at Syowa Station in 1992. Y. TAKAHASHI, T. ONO, S. OKANO and H. FUKUNISHI.
  32. Ionospheric observation of JARE-33. M. KAMATA.
  33. Upper atmosphere physics observation in JARE-34 until now. Y. TONEGAWA, Y. MAKITA, K. ROKUYAMA, H. MORIUTI and Y. HUI-GEN.
  34. Continuous ionospheric observation by a pulsed chirp sounder at Syowa Station, Antarctica. Y. MAKITA. and K. NOZAKI.
  35. Fabry-Perot doppler imaging observations of polar thermospheric winds: JARE-35 project. H. FUKUNISHI, M. KUBOTA and S. OKANO.
  36. The ionosphere observation of JARE-35. K. IWASAKI.
- VIII. JARE Unmanned Observations
37. Unmanned observatory powered by the thermo-electric generator. —What we have experienced. Where we are going to in the Antarctica?—. O. SAKA.
  38. Field test of a thermo-electric generator for unmanned observatory in JARE-33 (comment). I. YAMAZAKI.
- IX. HF Radar
39. HF radar at Syowa Station —Current status of the construction and prospect for international network observations—. H. YAMAGISHI and Syowa Station HF radar observation group.
  40. Comprehensive observations along the 210° magnetic meridian and HF radar experiment plan. Y. TANAKA, K. YUMOTO and M. NISHINO.
  41. Cooperative observations of polar ionosphere with HF and VHF radars (comment). T. OGAWA.
  42. Interesting problems to be solved by a HF radar (comment). O. SAKA.
- X. Future Plans
43. Future plans of upper atmosphere physics in Antarctica —Results of a questionnaire—. H. YAMAGISHI.
  44. International cooperative program at a Chinese station in Antarctica. T. ONO.
  45. Middle atmosphere radar program at Syowa Station. T. OGAWA.
  46. Development of scanning-beam VHF auroral radar system. K. IGARASHI, K. OHTAKA, M. KUNITAKE, T. TANAKA and T. OGAWA.
  47. A proposal for lidar measurements of the middle atmosphere in Antarctica. A. NOMURA.
  48. Future developments of the polar patrol balloon project. N. YAJIMA.

49. Observations of atmospheric response to solar-terrestrial phenomena at Syowa Station, Antarctica. T. WATANABE.
  50. Future developments of unmanned middle/upper atmosphere observations in Antarctica. H. FUKUNISHI.
  51. Importance of high-latitude observations in polar cap and communication networks. H. KAMEI.
  52. Svalbard IS radar project. N. MATUURA, R. FUJII, S. NOZAWA and S. KOKUBUN.
  53. Rocket observations in the cusp region. K. TSURUDA.
- P. Poster Session
- P 1. Identification of auroral conjugate points from auroral pulsations. H. MINATOYA, T. ONO, N. SATO, R. FUJII, H. YAMAGISHI, K. MAKITA and T. YOSHINO.
  - P 2. Observations of morningside sun-aligned arcs in Canadian high Arctic. K. SHIOKAWA, K. YUMOTO, S. KOKUBUN, K. HAYASHI, T. OGUTI, D. J. MCEWEN, Y. KIYAMA, A. MATSUOKA, H. HAYAKAWA and T. MUKAI.
  - P 3. Studies of CNA pulsation associated with Pc5 geomagnetic pulsation and observed by imaging riometer. K. KATO, H. YAMAGISHI, N. SATO and Y. TONEGAWA.
  - P 4. Correspondence between the location of AKR sources determined by the measurement of k-vector and auroral arcs. A. KUMAMOTO, H. OYA, A. MORIOKA and E. KANEDA.
  - P 5. Structural variation of radiation belt observed by RDM aboard AKEBONO (EXOS-D). A. YUKIMATU, S. TAKAGI, T. TERASAWA, T. KOHNO, F. MAKINO and M. EJIRI.
  - P 6. Energy dispersion of polar ions from the solar wind. S. WATANABE, E. SAGAWA, I. IWAMOTO, B. A. WHALEN, A. W. YAU, H. HAYAKAWA and A. MATSUOKA.
  - P 7. EXOS-D/SMS observations of transverse ion energization in the dayside cusp region. S. WATANABE, T. ABE, E. SAGAWA, B. A. WHALEN and A. W. YAU.
  - P 8. Thermal plasma observations in the polar wind region. T. ABE, S. WATANABE, B. A. WHALEN, A. W. YAU, E. SAGAWA and K. I. OYAMA.
  - P 9. Electron spectrum calculated from EISCAT electron density profiles. R. FUJII, N. MATUURA, S. NOZAWA, M. SATO, T. ONO, A. BREKKE and C. HALL.
  - P10. Ionospheric electric fields and currents in the premidnight sector. M. SATO, Y. KAMIDE, A. RICHMOND, A. BREKKE and S. NOZAWA.
  - P11. Relationship between the equatorward boundary of the auroral belt and the intensity of the ring current. N. YOKOYAMA, Y. KAMIDE, H. MIYAOKA and F. J. RICH.
  - P12. High- and low-latitude Pi2 magnetic pulsations observed at the 210° MM chain stations. H. OSAKI, K. YUMOTO, K. SHIOKAWA, Y. TANAKA, S. I. SOLOVYEV, G. KRYMSKIJ, E. F. VERSHININ, V. F. OSININ and 210° MM magnet observation group.
  - P13. Effect of charge exchange processes for the particle trajectory simulation in the magnetosphere. N. TAKAMURA, H. MIYAOKA and M. EJIRI.
  - P14. Prediction of the cyclic formation of polar mesospheric summer echoes. T. SUGIYAMA and Y. MURAOKA.
  - P15. Ionosphere-atmosphere couplings due to infrasonic waves. S. MINAMI, H. SUZUKI and M. NISHINO.
  - P16. Computer experiments for excitation mechanism of upshifted electromagnetic emission observed in ionospheric modification experiments. H. UEDA, S. GOODMAN, H. MATSUMOTO, Y. OMURA and T. OKUZAWA.
  - P17. Observation of spectrum broadening and sideband structure of VLF transmitter signals in the ionosphere. M. HAYAKAWA, S. OHNAMI, T. F. BELL, F. LEFEUVRE, T. ONDOH and Y. TANAKA.
  - P18. Estimation of wave energy distribution of VLF waves observed in polar region. K. NARA, S. SHIMAKURA and M. HAYAKAWA.
  - P19. Observation of the lower ionosphere in the polar regions by using atmospheric. H. OHYA and S. SHIMAKURA.