

**Program of the Twelfth Symposium on Coordinated Observations  
of the Ionosphere and the Magnetosphere in the Polar Regions  
held at the National Institute of Polar Research, Tokyo,  
January 17–18, 1989**

- I. Heliosphere-Magnetosphere-Ionosphere Coupling
  1. Field-aligned current-voltage relationship under the presence of field-aligned plasma flow. A. MIURA and H. WASHIMI.
  2. Field-aligned currents and associated particle precipitation in the polar cusp region. H. FUKUNISHI and F. J. RICH.
  3. Statistical characteristics of "FTE-like" events in the dayside magnetosphere. H. KAWANO and S. KOKUBUN.
  4. Magnitude of cosmic noise absorption (CNA) over the southern polar region at the time of SC and SC triggered substorm. T. HIRASAWA.
  5. Effects on the helio- and magneto-sphere of ununiform rotation of the sun. T. SAITO and T. OKI.
  6. Development of technical data acquisition equipment on ETS-VI. T. OUCHI, T. GOKA, K. NITTA and T. Kohno.
- II. Disturbances in the Ionosphere
  7. Type III echoes observed by VHF Doppler radar. T. TANAKA and T. OGAWA.
  8. An analysis of propagation characteristics of Omega signal measured on the "SHIRASE". H. KOHATA, I. KIMURA, T. ISHII and T. OGAWA.
  9. Seasonal variation of Aldora Omega signals observation in Iceland. T. ARAKI, N. SATO, R. FUJII and T. KIKUCHI.
  10. Latitudinal variation characteristics of total electron content in the northern and southern hemisphere deduced from NNSS satellites observation. M. KUNITAKE, T. OGAWA, K. OHTAKA, H. MAENO and K. AIKYO.
  11. Development of a dual frequency GPS receiver measuring ionospheric effects without code demodulation and its results. M. IMAE, C. MIKI, E. KAWAI, T. MORIKAWA, M. URATUKA, T. YAMAZAKI and F. TAKAHASHI.
  12. On the possibilities of ionosphere measurements using VLBI technique. T. KONDO and S. HAMA.
- III. Dynamics of Middle Atmosphere and Thermosphere
  13. Mesospheric sodium layer during auroral activities. A. NOMURA, Y. IWASAKA and T. KANO.
  14. Aurora effect on mesospheric Na layer. Y. IWASAKA and A. NOMURA.
  15. Time variations of the energy balance of the thermosphere during the auroral activity. S. MAEDA, T. J. FULLER-ROWELL and D. S. EVANS.
  16. Development of a Fabry-Perot Doppler imaging system: The first result of airglow observation. S. OKANO, H. NAKAJIMA, K. SHIOKAWA, H. FUKUNISHI, T. ONO and T. HIRASAWA.
  17. Gravity wave generated by terminator at high latitudes. S. KATO.
- IV. Future Program for Observation in the Polar Regions
  18. A plan of HF radar experiment at Syowa Station. T. OGAWA, R. FUJII, M. EJIRI and T. HIRASAWA.
  19. Current status and future plans of the HIPAS facility. A. Y. WONG, S. MINAMI, T. TANIKAWA and Y. NAKAMURA.
  20. A proposal of an Antarctic magnetometer chain along a high invariant latitude circle. M. SUGIURA, H. FUKUNISHI and L. J. LANZEROTTI.
  21. Network observation of equatorial electrojet and ULF wave. T. KITAMURA.
- V. ELF-HF Plasma Waves
  22. Mode conversion from auroral hiss to Z-mode waves in the plasma cavity. K. SHIMOMURA and K. HASHIMOTO.

23. Broad-band auroral hiss and inverted-V electron precipitation in polar ionosphere. T. ONDOH.
  24. The wave normal directions of chorus emissions in the outer magnetosphere. M. HAYAKAWA, S. SHIMAKURA and K. HATTORI.
  25. A consideration of new direction finding technique for auroral VLF hiss. S. SHIMAKURA and T. HAYAKAWA.
  26. A full wave calculation method of the VLF waves radiated from a source on the earth. I. NAGANO, Y. KITAGISHI and S. YAGITANI.
- VI. ULF Wave Phenomena
27. Studies of ULF waves with AMPTE/CCE: Update of single spacecraft observations and outlook on ground/space studies. K. TAKAHASHI and B. J. ANDERSON.
  28. Ion cyclotron waves associated with the magnetic storms or substorms. Y. KATO and Y. TONEGAWA.
  29. Evidence of magnetospheric cavity waves obtained by multiple ground-based and satellite observations. K. YUMOTO, K. TAKAHASHI, T. SAKURAI, P. R. SUTCLIFFE, S. KOKUBUN, T. SAITO, H. LUHR, M. KAWASHIMA and N. SATO.
- VII. Geomagnetically Conjugate Observations
30. Spacial distribution of X-ray pulsations observed on board Antarctic balloon and their geomagnetic conjugacy. H. SUZUKI, H. YAMAGISHI, T. KOZIMA, Y. HIRASAWA, H. MURAKAMI, T. HIRASAWA, N. SATO, T. YAMAGAMI, H. FUKUNISHI, and M. KODAMA.
  31. CNA pulsations and their source movement near the magnetic conjugate regions. S. SHIBUYA, Y. HIGUCHI, N. SATO and K. MAEZAWA.
  32. Seasonal and annual variation of ELF/VLF emission intensity at geomagnetically conjugate station and their relation to solar activity. T. SASAHARA, N. SATO and K. MAEZAWA.
  33. Statistical study on the conjugacy of geomagnetic disturbances in the auroral region. S. TSUNOMURA.
  34. Conjugate measurements of magnetospheric plasma waves at low latitudes. Y. TANAKA and M. NISHINO.
  35. Regular period pulsating auroras and their relation to magnetic pulsations. N. SATO and T. NAGATO.
  36. A giant pulsation event observed at Syowa-Iceland conjugate stations and on the AMPTE/CCE satellite. Y. TONEGAWA, K. TAKAHASHI, N. SATO and T. ONO.
- VIII. Aurora and Related Phenomena
37. Ion mass spectrometer onboard the EXOS-D satellite. T. YOSHIOKA, N. KAYA, T. MUKAI, E. SAGAWA and H. MATSUMOTO.
  38. On the image analysis of aurora stereo observation. T. ASOU, T. HASHIMOTO, M. ABE, M. EJIRI and T. ONO.
  39. Drift of auroral absorption region due to magnetospheric convection. T. KIKUCHI, H. YAMAGISHI and S. IKEDA.
  40. Conjugacy of sun-aligned polar cap arcs. T. OBARA, T. MUKAI, A. NISHIDA and N. KAYA.
  41. Auroral dynamics in the polar cap. K. MAKITA, H. YAMAGISHI, M. EJIRI and T. HIRASAWA.
  42. The dependences of altitude profiles of auroral emissions on the models of the neutral atmosphere. K. SHIOKAWA and H. FUKUNISHI.
- Poster Presentation
- P- 1. On the periodicity of geomagnetic disturbances and its correlation to the solar activity. T. OKI and T. SAITO.
  - P- 2. Laboratory simulation of the  $B_x$  effects on the magnetosphere. S. MINAMI, H. IMANAKA, T. MUTA and Y. TAKEYA.
  - P- 3. Development of 2D-image processing on CNA observations by a multi-beam riometer. M. NISHINO, M. SATO and Y. TANAKA.
  - P- 4. Spatial distribution of CNA associated with auroral structure. S. IKEDA, H. YAMAGISHI, T. KIKUCHI, N. SATO and T. YOSHINO.
  - P- 5. On high energy particle precipitation associated with Pc 5 magnetic pulsations. H. YAMAGISHI, O. SAKA and T. KIKUCHI.

- P- 6. Further study of the frequency drift of storm-associated mid-latitude VLF emissions. M. HAYAKAWA.
- P- 7. Boundary of polar type ULF and equatorial type ULF. T. KITAMURA, M. SHINOHARA and M. KUWASHIMA.
- P- 8. Seasonal variation of Pc 3–5 magnetic pulsations at conjugate stations. H. SAITO, N. SATO and T. YOSHINO.
- P- 9. 6300Å auroral arc in the low latitude boundary of auroral zone. T. ONO, and T. HIRASAWA.
- P-10. Dawntime auroral phenomena observed by using the monochromatic auroral TV cameras. K. MINATOYA, T. ONO, T. HIRASAWA and T. YOSHINO.
- P-11. Spacial distribution of field-aligned currents during substorm. R. FUJII, R. A. HOFFMAN and M. SUGIURA.
- P-12. Calculation of particle flux distribution of “nose” phenomena observed near the equatorial plane in the magnetosphere. Y. IKEBE, M. EJIRI and T. YOSHINO.
- P-13. Test flight of Polar Patrol Balloon (PPB) in the Antarctica. H. MIYAOKA, M. EJIRI, T. HIRASAWA, T. YAMAGAMI, S. OHTA, H. AKIYAMA, M. NAMIKI, M. D. YAMANAKA, M. KODAMA and J. NISHIMURA.