あらせ衛星を用いた内部磁気圏Pc3-5の統計解析

寺本 万里子 [1]; 松岡 彩子 [2]; 野村 麗子 [3]; 笠原 禎也 [4]; 笠羽 康正 [5]; 松田 昇也 [6]; 堀 智昭 [7]; 小路 真史 [7]; 津川 靖基 [7]; 能勢 正仁 [8]; 藤本 晶子 [9]; 田中 良昌 [10]; 篠原 学 [11]; 篠原 育 [12]; 三好 由純 [7]
[1] 名大・宇地研; [2] JAXA 宇宙研; [3] JAXA; [4] 金沢大; [5] 東北大・理; [6] ISAS/JAXA; [7] 名大 ISEE; [8] 名大・宇地研; [9] 九工大; [10] 国立極地研究所/総研大; [11] 鹿児島高専; [12] 宇宙研／宇宙機構

Statistical analysis of Pc3-5 pulsations observed in the inner magnetosphere by the Arase satellite

Mariko Teramoto[1]; Ayako Matsuoka[2]; Reiko Nomura[3]; Yoshiya Kasahara[4]; Yasumasa Kasaba[5]; Shoya Matsuda[6]; Tomoaki Hori[7]; Masafumi Shoji[7]; Yasunori Tsugawa[7]; Masahito Nose[8]; Akiko Fujimoto[9]; Yoshimasa Tanaka[10]; Manabu Shinohara[11]; Iku Shinohara[12]; Yoshizumi Miyoshi[7]
[1] ISEE, Nagoya University; [2] ISAS/JAXA; [3] JAXA; [4] Kanazawa Univ.; [5] Tohoku Univ.; [6] ISAS/JAXA; [7] ISEE, Nagoya Univ.; [8] ISEE, Nagoya Univ.; [9] Kyutech; [10] NIPR/SOKENDAI; [11] Kagoshima National College of Technology; [12] ISAS/JAXA

To investigate latitudinal structure of Pc3-5 waves, we have performed statistical analysis on the magnetic field data observed by the the Magnetic Field Experiment (MGF) on the Arase (ERG) satellite from March 21, 2017 to April 30, 2018. We identified 202 Pc3, 3037 Pc4, and 346 Pc5 events using a method for automatically detecting ULF waves. The compressional component is dominant for the identified Pc3-5. We investigate the spatial occurrence rate distribution. There are distinct differences of the occurrence rate between Pc3 pulsations and Pc4-5 pulsations. The occurrence rate of Pc3 pulsations is high in the day side at L $<$6 near the magnetic equator while the occurrence rate of Pc4-5 waves is high in the flunk side at L $>$6 off the magnetic equator. We also found that the Pc4-5 waves frequently appear at |Mlat|$>$30 degrees at L $>$6, which might indicate that Arase can observe a fundamental odd mode resonance far from the magnetic equator.

In this study, we will also report the spatial distributions of ULF waves in the electric field, using the Electric Field Detector (EFD) of Plasma Wave Experiment (PWE) aboard the Arase satellite.