口頭発表 | セッション記号 P （宇宙惑星科学） | P-EM　太陽地球系科学・宇宙電磁気学・宇宙環境

[P-EM28_29PM1]磁気圏-電離圏結合

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2014年4月29日(火) 14:15 〜 16:00 413 (4F)

磁気圏と電離圏の相互作用の結果生じる様々な現象を理解するために、オーロラ、沿磁力線電流、サブストーム、磁気圏・電離圏対流、電離圏イオンの流出入過程、プラズマ波動、中性大気と電磁圏プラズマとの相互作用等に関する議論を行う。特に、電磁圏結合プロセスを非一様かつ非定常な複合系としてとらえ、電磁圏における多重スケール間結合や、高緯度から中低緯度にかけての領域間結合の理解、素過程物理から見た結合の実体の解明を目指す。それらを実現するための革新的観測技術やデータ解析手法、シミュレーション、理論の提案等も歓迎する。

14:15 〜 14:30

[PEM28-P07_PG]CIR通過に伴う Pc 5 波動特性の時間変動

ポスター講演3分口頭発表枠

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キーワード：放射線帯, ULF波動

In this study, we analyzed the magnetic data observed at the high-latitude magnetic stations in Antarctica, H057 (-66.42, L=6.25), and Skallen (-66.42) to compare with the >2Mev electron flux observed by GOES 10 satellite. The pair of stations is located at the same latitude and within 1.7 degrees in longitude, which are quite suitable to estimate the azimuthal wave number.

We statistically analyzed the wave characteristics of the Pc5 pulsations by the superposed epoch (SPE) analysis for 14 magnetic storm events caused by the passage of CIRs (Corotating Interaction Region). The epoch time is defined as days from the passage of the stream interface (SI) of the CIR. The Pc5 power suddenly increases at 3-6 MLT sector from 0 day which is much stronger than that at dusk sectors. During 1-2 days, which is correspond to the recovery phase of the storms, the Pc5 power at the afternoon sectors (12-21 MLT) increases with the peak frequency of 2.5-3 mHz, whereas the Pc5 power at the morning sector does not become stronger.

On the other hand, the phase delay between the Pc5s at H057 and SKAL also shows the local time dependence especially during the epoch time of 1-2 day. At the noon and afternoon sectors, the Pc5 shows the eastward propagation and the phase lags between H057 and SKAL are less than 5 seconds. In contrast, at the morning sector, the Pc5 shows westward propagation with small azimuthal wave numbers.

These features indicate that the sources and generation mechanisms of Pc5 in the two periods (0-1 day and 1-2 day) are quite different. The premiere intensification of the Pc5 corresponds to the main phase of the moderate magnetic storm and can thought to be the forced oscillation caused by the strong disturbance of the solarwind dynamic pressure. In this case, the local time dependence of the phase structure does not show the obvious regularities. In the latter intensification of the Pc5 corresponds to the recovery phase of the storm (1-2 days). The westward (eastward) propagation at the morning (afternoon) sector and local time distribution of the Pc5 power could well correspond with the previous perception which could explain the Pc5 pulsations caused by the KH instability on the magnetopause.

The present result implies that the difference of the wave characteristics of Pc5s closely related the drift bounce resonance with the relativistic electrons. The drift bounce resonance might occur at the

afternoon sector during the recovery phase of the moderate magnetic storm by the KH instability due to the passage of the high speed solar wind.