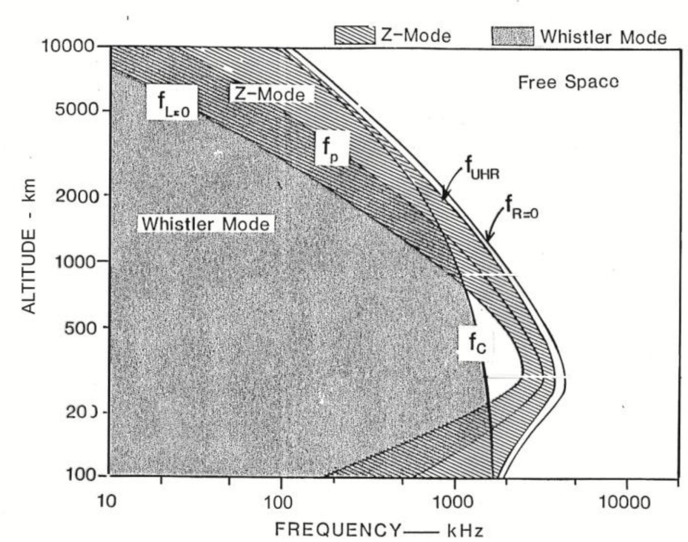
Referee Comments

This paper reports observations of LF waves which might be generated at the plasmapause and propagate to the low-altitude equatorial region. The observation results are interesting and raised some important problems of propagation characteristics of the LF waves in the plasmasphere.

I have some comments on the paper.

1. In the manuscript, the authors do not mention an important point, that is, the observed LF waves by DEMETER are "whistler mode waves".
I attached a diagram (drawn by myself) which shows the characteristic wave-mode in the frequency range of 10kHz-2MHz in the altitude range of 100-10000km. It is obvious that the ICE/DEMETER instrument can detect only the whistler mode waves within the observation frequency range up to 3.5 MHz at the altitude of DEMETER (about 700km).



Thus, the observed waves by DEMETER are not free-space mode but R-X mode of whistler waves trapped in the plasmasphere. When the authors consider the LF wave propagation from the source region near the plasmapause to the low-altitude equatorial region, they should take into account the propagation characteristic of whistler mode waves with respect to the magnetic field.

2. I recommend considering the mode conversion of original radiations, which are probably Z-mode or upper hybrid mode radiation generated around the plasmapause, to whistler mode waves. And the observed kilometric radiation at DEMETER can be whistler mode wave.
However, in this case, it becomes difficult and needs some suitable idea to interpret the "beam pattern" derived from the authors' study, because the whistler mode wave tends to propagate along the magnetic field. This is the interesting point that authors raised.

3. In the text, the authors say that the type1 is trapped component and the type2 is escaping component. What is the reason?
Usually, the term of trapping/escaping is used in the case of free-space mode propagation in the magnetosphere.

4. The authors distinguished two varieties of emission:
"Type 1 appears as a narrow continuum with an instantaneous bandwidth of about 2 kHz at frequencies less than 50 kHz, and displays negative and positive frequency drifts when the satellite is approaching or leaving the equatorial plane, respectively. Its frequency drift rate is weak and in the order of 0.2 kHz/s. Type 2 is composed of parallel narrow-bands in a frequency above 50 kHz and up to 800 kHz."
I agree the presence of Type1 and Type 2 radiations, but do not agree to use mixed data of Type1 and Type2 in the analysis of figures 2-6.
I suggest that they should be separately analyzed, because the different characteristics of type1 and 2 suggest the different source mechanism and/or different propagation pass.

5. The authors found structured emissions in the LF waves, and classified into two categories:
"In the northern hemisphere, five components in the frequency ranges of few kHz - 50 kHz, 70 kHz - 130 kHz, 170 kHz - 250 kHz, 280 kHz -340 kHz and 380 kHz- 420 kHz.
In the southern hemisphere, four components in the frequency bands: of 200 kHz - 320 kHz, 320 kHz - 450 kHz, 450 kHz - 570 kHz, and 570 kHz - 670 kHz."
The reader will imagine that these bands are showing the higher harmonic relation. In fact, as shown in Figure 1, an individual event shows fine harmonics. And, one can easily infer the fundamental frequency from the harmonic relation, and then can suppose the source altitude of the emission assuming the distribution of gyrofrequency and plasma frequency. I suggest to add discussion on this matter in the text.

6. minor comments

*p1, line17 seventeens should be seventies.

*p2, line 13 plasmasphere should be magnetosphere.

*Fig 6 vertical axis is wrong.

* Unpublished paper should not be included in References.