

Dear Dr. Balasis,

We present the revised version of the MS angeo-2020-16 “Even moderate geomagnetic pulsations can cause fluctuations of foF2 frequency of the auroral ionosphere”. All the referee’s remarks are taken into account. The point-by-point answers are given below in blue. We have tried to improve readability of the manuscript throughout the text. All the changes are indicated in the marked version of the MS. The corrected phrases are highlighted. Besides, the fragments of section 2.3 are underlined to show that it was re-structured.

There are still several issues, including the following:

In lines 2 and 3, the frequency range of geomagnetic pulsations examined in this study is first mentioned. Specifically, it should read “...with frequencies close to those of geomagnetic pulsations in the Pc5-6/Pi3 frequency band (1 – 5 mHz).” Later, in line 6, it should read “... As a rule, the Pc5-6/Pi3 frequency band ...”. The same notation should be maintained throughout the manuscript.

We have checked the notation throughout the MS and we have changed it in the discussion of statistics. However, at the points where FLR effects for Pc5s were discussed, the pulsations’ frequencies definitely show that they are Pc5 waves and the notation Pc5 is used. In citations we followed the authors.

In line 32, it would more correctly read “ ... devoted to Pc5 wave signatures in total ...”.

done

In lines 55 to 57, it should read “...six years of Van Allen Probes measurements confirmed the influence of ULF waves in Pc4 and Pc5 frequency ranges on electrons with energies up to the order of 10^2 eV with maximum occurrence around L from 5.5 to 7 (Ren et al., 2019).”

done

In lines 133 and 134, what is written in the previous lines 131 and 132 is essentially repeated.

The second phrase is excluded

In lines 135 to 137, the two indices, AE and Dst, as well as parameters of the solar wind considered in the present analysis are repeated. They were first introduced in Section 2.1.

The phrase about indices is excluded, and the one about IMF/SW parameters is re-formulated and moved to section 2.1.

In line 138, it should read “ ...analysis, all intervals were classified ...”.

corrected

In line 141, it should read either “...spectra of geomagnetic pulsations ...” or “...spectra of geomagnetic field variations ...”. The terms “geomagnetic field variations” and geomagnetic pulsations should be adopted in the place of “geomagnetic variations” which it is not clear to me - and perhaps the reader - to what it refers. However, it is often used in this version of the manuscript.

corrected

In line 142, should it read “...intervals, for which spectra of foF2 variations can be calculated (Δ foF2 intervals ...”?

And later, in line 144, should it read “...coherent Δ foF2-bx intervals, ...” even though the explanation of Δ foF2 and bx are not provided earlier than the next Section 3.1? It is the coherence between

filtered time series of the foF2 frequency and the meridional component of the geomagnetic field B that has been calculated, if I have not confused the notations.

The notation is corrected

Furthermore, the organisation of Section 2.3 could be improved if the first introductory paragraphs (in the current version of the manuscript, it is not clear whether there are two, three or more paragraphs from the beginning until line 137) were followed by details of the data analysis carried out which are presented in lines 152 to 170. The classification of intervals examined that is currently found between lines 138 and 145 should be placed before the statistics for these intervals presented in lines 160 to 162.

The subsection is re-organized, the paragraph structure is revised.

In line 174, it would more correctly read "foF2 frequency and geomagnetic field variations"

done

and later, in line 177, "A high pass filter with cut-off frequency at 0.8 mHzThe time series in Figures 3 and 6 are filtered ...".

done

In line 263, it should read "Statistics on Δ foF2 and bx fluctuations related to different levels of geomagnetic activity are presented in Figure 13. Left panels (13a, c) present the occurrence distribution for all, Δ foF2 and coherent Δ foF2-bx intervals (groups 1, 3 and 4)..."

done

In Figure 13, would it be possible to add labels to tick marks other than 100 and 1000 which are currently visible in plots 13c and 13d so that it is easier to follow the description of the statistics in Section ?

done

This list of issues identified is far from inclusive but hopefully indicative of the manuscript's poor readability.

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