Kozubek et al. investigate so-called streamer events, which are occasions of outbreaks of low-latitude air masses into higher latitudes, most likely caused by planetary wave activity or wave breaking. These events can affect the circulation at higher latitudes. Therefore, the authors present an interesting approach for finding indicators of streamer events in infrasound and Doppler sounder observations. However, the authors have not found convincing signatures or encouraging results in either the infrasound or the Doppler sounding data. This is not necessarily a reason for rejection as long as the method itself is convincing; but the manuscript partly lacks detailed information about the methodology, which poses the question of whether a more detailed analysis might provide better insights towards the aims of the study. As is, it is hard for the reader to follow the approach since the interpretation of figures, tables and results is partly left to the reader. The authors do provide an outlook or recommendations of additional steps and methods for getting a more comprehensive picture; if they incorporate just one or two of these recommendations (which should not be out of the scope of this study), this might result in a more comprehensive analysis of potential indicators, also enabling more solid conclusions (even if no indicator would be found).

Therefore, I recommend a major revision of this manuscript and encourage the authors to consider the following remarks before resubmitting their manuscript.

General comments:

1. The data and methods section needs to be substantially revised, especially concerning the description of the methodology.

   The data and methods section has been significantly changed.

2. Choice of figure and methods, e.g. L259-263: I get the point here, but it is not very convincing to compare three values of two parameters (Table 2) with each other. And in contrast to this sentence, you actually do refer to single streamer events in the text afterwards. The only essential difference is obvious, however, in the total number of detections; this goes with the mentioned limitation that you consider much more calm periods (>150 days) than streamer events (>30 days). That said, the left-hand panels of Figs. 4 and 5 look like a portion of the respective right-hand panels. So how is this comparable at all? How about the number of detections per day? Have you considered looking at consecutive days before and after the streamer events, and how detection patterns change with the onset of a streamer event and afterwards?

   The analysis of infrasound observations was entirely reworked. The statistical study summarizing the available dataset was cancelled and replaced by two case studies. The time periods for the case studies were selected so that there are adjacent streamers and calm periods. We believe that this can facilitate comparison of observations during streamers and observations during calm periods. And consequently, it can help to identify possible effects of the streamers.

3. Why is it out of the scope of this study (e.g. L278) to quantify propagation effects and thus a more qualified assessment of whether there is a relation between the streamer events and infrasound detections? Modelling the propagation conditions

or looking at these for, at least, one streamer event can be expected by the reader. The same holds for the source if you already indicate that modifications “shall be considered on 3rd – 7th November 2020” (indeed you refer to the WAVEWATCHIII model).

The investigation of infrasound propagation conditions and of the infrasound source was done using publicly available tools and data.
Infrasound propagation through a range dependent atmosphere was modelled using the InfraGA raytracing tools. The model was run on 6 November 2020; this is a day influenced by the streamer event. As a reference, infrasound propagation was modelled on the calm day of 12 November 2020. Infrasound propagation was modelled also on 10 March 2021, day influenced by a streamer event.
Possible changes of intensity of the microbarom source were qualitatively evaluated based on publicly available meteorological and ocean data.

4. Some phrases are a bit vague, leaving the reader alone with finding e.g. the exact numbers to get a quantifying sense for terms like “strong/small” (L51-52), “large spatial size” (L126), “high intensity (low TO3 concentration)” (L126) – please be more precise and add values to help the reader interpreting the results or understanding the criteria for manual selection. See also specific comments for additional instances.

   The reviewer raises a very good point here. Indeed, the formulations are a bit vague. We further defined the streamers and introduced quantitative thresholds.

5. This study is all about streamer events. However, for someone who is not familiar with the phenomenon, the context is seemingly missing when “streamer events” are introduced the first time in L44 (there is a context with the sentence before, but this might not be clear here). At the end of the paragraph (L55), it is not fully clear how a streamer event is characterized (the typical pattern/structure described by Eyring et al. (2022) is worth to be mentioned, as it is recognizable in Fig. 1).

   Thank you for the suggestion of Eyring et al. (2003). We agree, that the definition is not yet very precise and enough in this context. We updated the definition of streamer events and included more literature

6. The quality of the figures (except from Figs. 1&2) needs to be improved, at least based on the current PDF file (level of detail, perceptibility, size, resolution). Instead of the Table 1, could the streamer events be visualized e.g. by a time series (for instance, similar as in Fig. 6a) or as a series of well-resolved screenshots/maps (e.g. one figure per event like Fig. 1, for example showing the maximum extension of each considered streamer event)?

   Some of the figures have been redone and we have tried to input figures in the better quality. On the other hand, in PDF the quality could be worse than for publication.

7. It is not clear whether only three of the seven streamer events have been analysed in more detail and if considering more events (e.g. a longer time period than 16 months) could reveal more hints on potential indicators in infrasound and Doppler sounding data. Such an extended analysis using more data or examining different aspects (see comments #2 and #3) might also enable more concise

discussions and conclusions. At the moment, the conclusion section mainly consists of a summary of the results (see specific comments).

This research has been dedicated to the AEUOLUS project from ESA. That is why the period has been limited to the 16 months, where sufficient and reliable data from AEOLUS are provided. We understand that longer period can bring some improvement but we have tried to change infrasound part to improve our results.

Specific comments:

L44-48: Here, additional references would be appropriate

The term "streamer" lacks a precise definition, as noted by Krüger et al. (2005). They discuss various aspects of streamers, including their impact on mixing and the divergent definitions associated with them. Offermann et al. (1999) describe streamers as large-scale tongue-like structures formed by the meridional deflection of air masses. Streamers are characterized by irreversible mixing of air masses between equatorial and polar regions which is why the might be linked to planetary wave breaking (Waugh, 1993). Eyring et al. (2003) give a climatology of the seasonal and geographical distribution of streamer events. They show, that streamers often occur over the Northern Atlantic and can be identified by either high NO_2 or low ozone concentration, which is why we select streamers by total ozone column measurements. They show that streamer events occur most often during winter and least during July and August in the Northern Hemisphere. Therefore, we focus on the winter season from September until March.

L51-52: “During a streamer event the wind field changes rather strong over a comparatively small distance” – please quantify distance and strength; also: **are** the wind field changes strong or does the wind field change **strongly**?

The streamers studied occur mainly in the upper troposphere and lower stratosphere, the region of the jet stream. During a streamer event, the jet is deflected meridionally by planetary waves, and the flanks of the streamer represent the jet's path. In the centre of the streamer, the wind speed is close to zero, while the outer flanks can reach wind speeds of more than 70 km/h. This results in strong wind shear effects.

L89: This depends on whether the streamer-related features in infrasound detections are unique or if there are other phenomena (SSWs?) that produce similar infrasound anomalies

The sentence “If an occurrence…a quick indicator of streamers.” was removed

L92/93: please rephrase

L94-96: consider rephrasing

L108: “processor” – what do you mean?

- All three points have been changed.

L119: “another latitudinal region” – do you mean further north/south? Or do you mean over the North Pacific Ocean?

Thank you for pointing to this unclear sentence. We wrote it more precise:

Whenever another streamer event occurs somewhere other than over the Northern Atlanic region with comparable spatiotemporal extent, we do not consider this date as a streamer event.

L123: why exactly this period (16 months)? Why not, e.g., two years?

This research has been dedicated to the AEUOLUS project from ESA. That is why the period has been limited to the 16 months, where sufficient and reliable data from AEOLUS are provided. We understand that longer period can bring some improvement but we have tried to change infrasound part to improve our results.

L129: “manually, by the given criterions” – table 1 does not provide any criterion, except from “streamer events” and “calm periods” – but how are these defined? This is not clear from the text so far (quantify thresholds for the criteria of L126-129). Even (or rather especially) if the manual selection is subjective, the subjective criterions (e.g. L131) need to be mentioned.

The streamer events are selected by eye for this study (results see **Error! Reference source not found.**) considering the TO3 global maps from January 2020 and March 2021. As planetary waves are permanently disturbing the atmospheric dynamic of the higher troposphere / lower stratosphere, especially smaller scale streamers can be observed almost every day and the identification of streamer events becomes subjective.

We define a streamer as such when the ozone column concentration of the finger-like structure above the Northern Atlantic/Western Europe is lower than 300 DU and persists for at least 3 days. The longitudinal extension is of approx. 15 to 30 degrees in the mid-latitudes (between 30 to 70°N). The northernmost point of a streamer exceeds 50°N. Fig. 1 shows a streamer event above the Northern Atlantic, indicated by the blue color which represent the low ozone concentrations. The streamer shown in fig. 1 reaches latitudes beyond 70°N, which indicates a large example. At the western and eastern flanks of the streamer, the ozone concentration exceeds 350 DU, defining distinct boundaries. This is also visible in fig. 1 represented by the green colors at the eastern coast of Northern America and western Europe. So, there is a gradient of the ozone concentration of about 50 DU / 5°. Furthermore, the streamer exhibits a discernible pattern of circulation, with air masses being meridionally deflected, contributing to its formation and maintenance. These air masses, characterized by their movement from south to north at the eastern flank and from north to south at the western flank, play a significant role in the streamer's dynamics. This is the reason why equatorial low ozone concentration is transported northward. In contrast, the calm periods, representing the opposite dynamic situation to the streamer events, are characterized by only very few meridionally deflected air masses. During these periods, the ozone concentration in the mid-latitudes above the Northern Atlantic is consistently higher than 350 DU, indicating stable atmospheric conditions and minimal perturbations in the ozone distribution. An example for a calm period is shown in Fig. 2.

L132: “strong gradient from .. to ..” – how strong? (again, thresholds/values required)

Yes, we agree that the wording "strong gradient" is misleading, as it stresses the gradient. In this case we want to stress, that there is hardly any disturbance of the ozone concentrations over the latitudes. So we delete "strong". For the rest → see next comment.

L134: "almost no latitudinal variation" – after reading further and looking at Figures 1 and 2, this phrase needs to be clarified (no latitudinal variation within the streamer event like in Fig. 1 or within the entire hemisphere like in Fig. 2?)

The distribution of the ozone concentration in Fig. 2. serves as a representation for the calm events. In this case, there are hardly any occurrences of ozone-poor air masses (below 300 DU) extending northward beyond 40°N.

L145: How is this event detected (except from the ozone-poor air mass)? Automatically or by eye inspection?

The event is detected by eye inspection, see comments above.

L151: As there are additional streamer events in the Northern Hemisphere, as you pointed out in the sentences L145-147, why don't you neglect this event (L119)? (it is largest, but how large should it be, compared with another event?!)

The event (L119) is the most pronounced of the considered time interval. Therefore, it serves as a very good example. It is therefore not to neglect, but to consider, as we expect a considerable effect to the gravity wave dynamics.

L160: Do you consider the February event or not? It is not listed in Table 1.

Yes we consider this and it was added into Table 1.

L158-161: you should add that Figure 2 is an example for a calm event (as denoted in the caption only).

Yes, this is correct. See comment above.

L253: which parameters? I suggest adding a reference

We corrected this.

L308-311: Maybe recall here that streamer events also occur in the winter season only (September – March mentioned before)

Figure 6: The panels and their labels should be a bit larger. Consider revising the x-axis ticks.

L323-325: Why not analysing the frequency here? Given the results from WBCI (Table 2), 0.05-4 Hz does not seem to be too narrow for analysing the frequency variations

L325: How much higher? Please quantify, be more precise.

Whole 3.1 part has been completely redone so these points are not relevant now.

L355: What is a streamer-like event, compared to a streamer event? It was not defined before.

We have deleted this.

L387: Apart from daytime and nighttime, it is not clear (for a non-specialist, I assume) what the different frequency channels of the CDS measure (what is the difference between both channels? What are they supposed to measure?); this needs to be explained in Section 2.

The 4.65 MHz signal did not reflect from the ionosphere (escaped to the outer space) at night due to the low critical frequency of the ionosphere. On the other hand, the 3.59 MHz signal mostly reflected during the day from the ionospheric E layer and the Doppler shift was negligible, difficult to analyse.

L424: "larger signal amplitudes" – compared to what? (quantify)

This sentence is no longer in the revised manuscript. Conclusions were entirely reworked following the changes in the Results section

L425 (and before in the text): "It was not rejected" sounds not like an appropriate phrase to describe results, especially not in the conclusions. Better would be something like "Signal amplitudes are the same …" or "there is no difference between …" here.

This sentence is no longer in the revised manuscript. Conclusions were entirely reworked following the changes in the Results section

L428: "a transient decrease of the frequency …" – How do you interpret this finding? What does this mean, e.g. in terms of the propagation conditions? What do you conclude from this finding?

The frequency decrease can point to signal refraction at higher altitudes where higher frequencies are filtered out due to enhanced absorption (Sutherland and Bass, 2004, https://doi.org/10.1121/1.1631937). Indeed, InfraGA shows that thermospheric and stratospheric arrivals are possible in the discussed time window. Transient thermospheric guiding is possible on 5 – 6 November from 20 to 05 UTC.

L429: "Based on these results, infrasound measurement at a single infrasound station cannot be recommended as a reliable sole indicator of streamers." – From which results do you conclude this – and why? This needs to be discussed somewhere. The sentence comes a bit surprising after you describe the transient frequency decrease in the sentence before.

This sentence is no longer in the revised manuscript. Conclusions were entirely reworked following the changes in the Results section.

The new results in revised manuscript suggest that influences of the streamers on infrasound detections at a single station are variable. As streamer are phenomena influencing the tropopause-lower stratosphere region and not altitudes around 50 km, its effects in infrasound observations seem to depend on the exact location of the streamer event. It can therefore be difficult to identify a reliable indicator of streamers in single station observations.

L443-450: this is a summary of the results section, but what is the conclusion?

The conclusion can be seen on line 569-573

Technical corrections/suggestions:

L13: rephrase (at least the parenthesis) - dynamics in both parts of the sentence sounds strange, like “for understanding of atmospheric dynamics, it is important to know the dynamics and chemistry…”

L35: dynamic processes -> dynamical processes

corrected

L42: comma after “When planetary waves break”

corrected

L45: originate by -> originate from

L46: the -> their (assuming that you mean the characteristics of planetary waves and streamer events), They -> Streamer events

corrected

L59: tens km -> tens of kilometres (or 10 km?)

corrected

L94: follow -> follows

corrected

L110: brackets for years of the references

Corrected.

L126: “distinguished” – how is this meant? selected?

removed

L130: weather -> whether, effect -> affect

corrected

L169: the reference is misplaced

corrected

L173: Full stop missing after “tetragon”

corrected

L181: 10 or 20 Hz sampling rate?

When processing infrasound detections at WBCI, data are resampled to 10 Hz sampling rate. PVCI detections are processed from waveform data sampled at a 25 Hz rate. The text was modified accordingly.

L182: 1-min mean values [add: of the absolute pressure data]

added

L210-212: Merge three sentences into one: “All analyses will be done with respect to the streamer events and calm periods shown in Table 1.”

corrected

L216: January 2020 – April 2021

Section Infrasound observations at ground station WBCI and PVCI was reworked including the title

L232: compared to

Checked and corrected in the revised manuscript

L238: The reference does not fit to the text, maybe you mean this publication instead: https://doi.org/10.1093/gji/ggy520

corrected

L239: high particularly -> particularly high

corrected

L243: occurred on -> occurred from

corrected

L251: full stop missing

corrected

L263: are [the] same

No longer in the revised manuscript

L266: … presented in Table 2 and depicted in Figure 4.

No longer in the revised manuscript

L271: not sure if webpages are accepted as references, but at least it should be noted when these were "last accessed"

Web links moved to Data availability section, date of the last access added

L299: suggest changing "included in the study the performance of which is optimal" -> "included in the study because its performance is optimal"

The sentence was reformulated in the context of the revision

L304: suggest changing "occurred in the season of winter stratospheric westerlies" -> "occurred in the winter season when stratospheric westerlies persist"

No longer in the revised manuscript

Figure 6: I recommend using a colormap other than 'jet'/'rainbow' (see, e.g., https://doi.org/10.1038/s41467-020-19160-7)

The colormap of the observations at PVCI and WBCI (Figs.3, 4, 9, 10) was changed to parula which in our opinion meets the recommendations.

Unfortunately, InfraGA plots can at the moment be only saved with the default jet colormap. The colormap can only be adjusted in the interactive matplotlib window, however figures saved from the interactive window are of low resolution. These figures are provided in supplementary materials.

L325: "departures" -> "onsets" ?

No longer in the revised manuscript

L328: the same

No longer in the revised manuscript

Section 3.2: different date format used in the text

corrected

L347: 0.0.5 should be corrected

corrected dv/v < 0.05

L381: criterions (or more common: criteria)

corrected

L389: corresponds -> correspond

corrected

L392: “who showed” -> which showed” (the investigation)

corrected

L433: observer -> receiver

No longer in the revised manuscript

L440: “it will be to benefit of future studies” – do you mean “it will be a benefit to future studies” ?

No longer in the revised manuscript

Review of „Testing ground based observations of wave activity in the (lower 1 and upper) atmosphere as possible (complementary) indicators of streamer events" By M. Kozubek et al.

In this paper, an attempt is made to relate streamer events during 15 months of analysis, particularly in the Northern Atlantic region, with signatures seen in infrasound and gravity wave recordings from ground-based microbarometer recordings in the Czech Republic, and in local ionospheric Doppler soundings. Comparison of these recordings during streamer events and during more calm conditions without obvious streamers did not reveal a significant streamer signature in the records. The paper is motivated by a possible use of local observations for a quick identification of streamers, in addition to analyse peculiarities of GW during streamer events. The selection of streamers, however, is subjective and incomprehensible, the analysis does not following rigid and clear schemes, and the description of observations and analysis is very much lacking in detail. The authors did not find clear signals of streamers in the local observations, but because the analyses are not based on objective criteria, they can neither rule out that there could be a signal. So the conclusions to be drawn are at least vague and there is hardly any insight to be gained from the paper. I cannot recommend publishing the paper without a complete revision of the data base construction and analysis methods. There are a number of minor grammar issues. Some of them are included below, but in addition the paper would need a careful language revision. Major comments Streamer events are identified by subjective criteria. However, it is not described, what "strong", "large spatial size", or "low ozone" means, e.g. by providing the order of magnitude, threshold values of meridional and zonal gradients, etc. Actually, objective criteria have been used in the literature to define streamers (e.g. Eyring et al., 2003, Krüger et al., 2005). It is also not described, how the authors analyse the irreversible mixing mentioned in line 127. In turn, it is also not clear how calm periods were identified. E.g., during the period 9.-15.11.2020, which is defined as "calm" in Table 1, considerable longitudinal variability can be found visually (see figure below taken from https://atmos.eoc.dlr.de/tropomi). So, given that the choice of calm and streamer periods is questionable or at least not convincing, any subsequent analysis based on a comparison of differences between them is inconclusive.

The term "streamer" lacks a precise definition, as noted by Krüger et al. (2005). They discuss various aspects of streamers, including their impact on mixing and the divergent definitions associated with them. Offermann et al. (1999) describe streamers as large-scale tongue-like structures formed by the meridional deflection of air masses. Streamers are characterized by irreversible mixing of air masses between equatorial and polar regions which is why the might be linked to planetary wave breaking (Waugh, 1993). Eyring et al. (2003) give a climatology of the seasonal and geographical distribution of streamer events. They show, that streamers often occur over the Northern Atlantic and can be identified by either high NO_2 or low ozone concentration, which is why we select streamers by total ozone column measurements. They show that streamer events occur most often during winter and least during July and August in the Northern Hemisphere. Therefore, we focus on the winter season from September until March.

The streamer events are selected by eye for this study (results see **Error! Reference source not found.**) considering the TO3 global maps from January 2020 and March 2021. As planetary waves are permanently disturbing the atmospheric dynamic of the higher troposphere / lower stratosphere, especially smaller scale streamers can be observed almost every day and the identification of streamer events becomes subjective.

We define a streamer as such when the ozone column concentration of the finger-like structure above the Northern Atlantic/Western Europe is lower than 300 DU and persists for at least 3 days. The longitudinal extension is of approx. 15 to 30 degrees in the mid-latitudes (between 30 to 70°N). The northernmost point of a streamer exceeds 50°N. Fig. 1 shows a streamer event above the Northern Atlantic, indicated by the blue color which represent the low ozone concentrations. The streamer shown in fig. 1 reaches latitudes beyond 70°N, which indicates a large example. At the western and eastern flanks of the streamer, the ozone concentration exceeds 350 DU, defining distinct boundaries. This is also visible in fig. 1 represented by the green colors at the eastern coast of Northern America and western Europe. So, there is a gradient of the ozone concentration of about 50 DU / 5°. Furthermore, the streamer exhibits a discernible pattern of circulation, with air masses being meridionally deflected, contributing to its formation and maintenance. These air masses, characterized by their movement from south to north at the eastern flank and from north to south at the western flank, play a significant role in the streamer's dynamics. This is the reason why equatorial low ozone concentration is transported northward. In contrast, the calm periods, representing the opposite dynamic situation to the streamer events, are characterized by only very few meridionally deflected air masses. During these periods, the ozone concentration in the mid-latitudes above the Northern Atlantic is consistently higher than 350 DU, indicating stable atmospheric conditions and minimal perturbations in the ozone distribution. An example for a calm period is shown in Fig. 2.

On lines 189-195 it is written that configuration is set on individual basis, but how?

Relevant PMCC input parameters are given in Table 2.

It is unclear, what is meant with detection bulletins.

The arrival parameters of the detected signals are stored in the detection bulletins

It is unclear how single points in Fig.3 are obtained.

One circle or point in the plot represents one detection family.

What is meant by a detection pixel?

Elementary detection with the PMCC or the detection pixel is declared in the time-frequency window when signal correlation and consistency criteria are met (Brachet et al., 2010 in Infrasound Monitoring for Atmospheric Studies).

As microbaroms are ubiquitous, how is an infrasound record defined?

Pressure is recorded by the respective microbarographs that form a microbarograph array. An infrasound detection is declared by an infrasound detector, e.g. the PMCC when coherent signal is found in the pressure recordings of the array elements. The length of infrasound records varies depending on the source. Microbaroms are infrasound signal of long or continuous duration. Contrary, signals generated by an explosion can last only several seconds.

How is similarity of arrival parameters defined to obtain families?

Detection pixels are grouped into the detection families based on similar time, frequency, azimuth of signal arrival, and signal trace velocity (Brachet et al., 2010 in Infrasound Monitoring for Atmospheric Studies).

Similarly, how is the data base to produce the histograms in Fig. 9 obtained? Did you simply used the complete time series, and calculated hourly rms values? Similarly, more information on then ionospheric GW analysis is necessary for the reader to understand the method without having to consult Chum and Podolska, 2018. E.g., how long is a registration needed for detection of events? Provide details of the 2 frequencies, and are they operated simultaneously? Without more information it is difficult to interpret Fig. 10.

We specified that that the values for the histograms were calculated with 1-hour time resolution.

We now provide additional information on continuous Doppler sounding and data analysis in Section 2. We have also expanded the text related to Figure 10 and discuss the usability/limitation of each sounding frequency.

Minor comments Abstract, first sentence: remove, there is no information in it.

L 22: explain acronyms when first used

PVCI and WBCI are not acronyms, but the names of the infrasound stations. The reference to the Czech microbarograph network was added in the reference list.

L 23/24: insert “tropospheric” before GW, remove “in the troposphere”

corrected

L 40: remove “upper troposphere”

Done

L 44: introduce and describe streamer events before discussing them

Done.

L 46: closely linked. To what?

This part has been redone.

L 52: strong → strongly

This part has been redone.

L 54: focus will be on GW periods. You mean the analysis of variation sin the GW period range?

This part has been redone.

L 59: tens km → tens of km

Done

L 63: mesosphere → stratosphere and mesosphere

Added.

L 65: wind field → wind speed

Changed

L 67: remove “us”

removed

L 72: wind → the wind

Meant as an adjective the wind field and the temperature field or in shorter version wind and temperature fields.

L 92: Dopper → the Doppler

L 94: follow → follows

L 111: add dot after “al”

L 114: dynamic → dynamics

L 114: capitalize “Especially”

L 129: criterions → criteria

L 130: effect → affect

All notes have been corrected or removed

L 132: do you mean “large-scale spatial structures”?

Corrected

Figs. 2 and 3: Labels should be enhanced

L 170: introduce WBCI and PVCI when first mentioned Paragraph starting with line 196: please add more details on the sounder, e.g. frequencies, here.

PVCI and WBCI are the names of the stations. Details about each station are described on lines 198-219.

L 196: using → using the

corected

L 209: from → from the

Corrected.

L 210: will be → was

corrected

L 219: streamers → streamer events

L 221: visual comparison. What is analysed and compared here?

L 228: This sentence is unclear. From one set of nx, ny data you obtain one value for u. So do you use different sets of x and y and calculate u for each of them?

Fig. 3: Please modify scaling to decrease azimuth range, and extend x-axis a bit so that data points don´t fall on the axis.

Fig.3 was modified

L 251: insert full stop after “family”

Inserted

L 263: same → the same

L 266: Notice → Note

L 266: what means “results for the overall dataset”?

L 355: what is the difference between “streamer” and “streamer-like” in your analysis?

It is deleted.

L 359: Visually I cannot detect differences between calm and streamer conditions in Fig. 9. The authors should consider plotting, for each parameter, both histograms in one panel after a normalisation by the overall counts.

We now display normalized histograms as suggested and modified/expanded the text. However, we keep the histogram, separated to display the quartiles and boundaries for large values.

Fig. 9: indicate that “0” means the beginning of Nov. 1 (in UT?). And the y-axis legend should read prms.

We do not understand this comments for former Figure 9 (current Figure 14)

Fig 9: the data seems to be hourly values. Is the rms calculated on one hour of data each? Please provide the information.

Yes, hourly values, now specified.

L 377: much → a much

Done

L 380: what is the frequency range of the observed GW?

5-60 min, now specified

L 389-390: Why do the recordings at the two frequencies depend differently on the time of day? Is there different signal damping, or reflection heights?

We added: The 4.65 MHz signal did not reflect from the ionosphere (escaped to the outer space) at night due to the low critical frequency of the ionosphere. On the other hand, the 3.59 MHz signal mostly reflected during the day from the ionospheric E layer and the Doppler shift was negligible, difficult to analyse

L 400-402: Is there a paragraph missing? What are the results of the statistical analysis (based on which data) mentioned in line 401?

Now specified

L 455: remove “which”

L 465: What is the DTK-GPMCC software? It is not mentioned in the text.

DTK-GPMCC is the version of the infrasound detection software the core of which is the PMCC algorithm described in Section 2) Data and Methods.

L219, L221, L 228, L263, L 266, L,266, L267, Fig 4.

The Section 3.1. was completely reworked and so these points disappeared.