

## ***Interactive comment on “Characterization of gravity waves in the lower ionosphere using VLF observations at Comandante Ferraz Brazilian Antarctic Station” by Emilia Correia et al.***

### **Anonymous Referee #1**

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The present work demonstrates usefulness of VLF technique to observe GW activity in the lower ionosphere ( $\sim 70$  km ?), using VLF receiver located at EACF, Antarctica. For validation they compared the results with airglow image data from the MLT region ( $\sim 90$  km). They could get a large amount of periodic oscillation events in 2007, and could investigate seasonal variation of GW events. The VLF technique itself is not new, but it is a new aspect to use it for monitoring GW activity. The authors successfully could do it. The figure 6 (seasonal variation of GW occurrence) is worth to discuss as a new result. I think the present manuscript is worth to publish in Journal. However some minor revisions would be necessary before to be accepted, as listed below:

C1

Page 2, line 14, higher than: longer than ? Page 4, Line 21-22: The authors mention that simultaneous measurement of VLF over NAA-EACF and NPM-EACF gives opportunity to identify propagation direction of GW. However they did not use it in this work. Why ? Page 6, Figure 2: I think it is better to show only the lower panel (geographically coordinated images), with the latitude and longitude scales, so that readers can understand in the horizontal coverage of the images. Page 10, Figure 6, the authors presented GW occurrence rate using only nighttime VLF amplitude oscillation. They did not mention about how was the occurrence during the day time. Discussion of the data including the daytime occurrence would be worth. Page 11, line 23-25: The simultaneous analysis of VLF<sub>,,,:</sub>: The authors did not show any analysis in the manuscript. (END of Review)

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C2