

Interactive comment on “Mesospheric gravity wave activity estimated via airglow imagery, multistatic meteor radar, and SABER data taken during the SIMONe–2018 campaign” by Fabio Vargas et al.

Fabio Vargas et al.

fvargas@illinois.edu

Received and published: 3 December 2020

I have updated replies to two referee #1 comments. The ones presented in the "Full reply to referees" documents were not consistent with what was done in the paper.

line 293-294: The last sentence is enigmatic. If these larger amplitude waves are only seen in the O₂ emission but not below (OH, Na) or above (OI), it is quite puzzling. The fact that large amplitude waves are seeing in the O₂ layer is surprising given the layers overlapping structures. This must be investigated separately. At this point, we

[Printer-friendly version](#)

[Discussion paper](#)



don't have a good explanation. However, the O₂ has the narrower estimated FWHM for the campaign, and that would allow shorter vertical scale waves to be seen in the O₂ images, and consequently larger momentum flux waves would be measured there (see lines 311 -313). We have added to the text the following statement:

"We have added the following to that sentence: "It is not clear why the enhanced waves are seen most in the O₂ emission once the layer's peaks nearly overlap, but this could be related to the fact that the O₂ VER has the smallest FWHM (see Table 2). These shorter λ_z waves would be seen in images of the O₂ emission primarily, and their momentum flux would be larger for it increases as λ_z decreases (see Fig. 5i)".

Figure 7: Can you add a detection threshold? → We have fixed that. We have added a horizontal line as a reference for the horizontal threshold.

Interactive comment on *Atmos. Chem. Phys. Discuss.*, <https://doi.org/10.5194/acp-2020-896>, 2020.

[Printer-friendly version](#)

[Discussion paper](#)



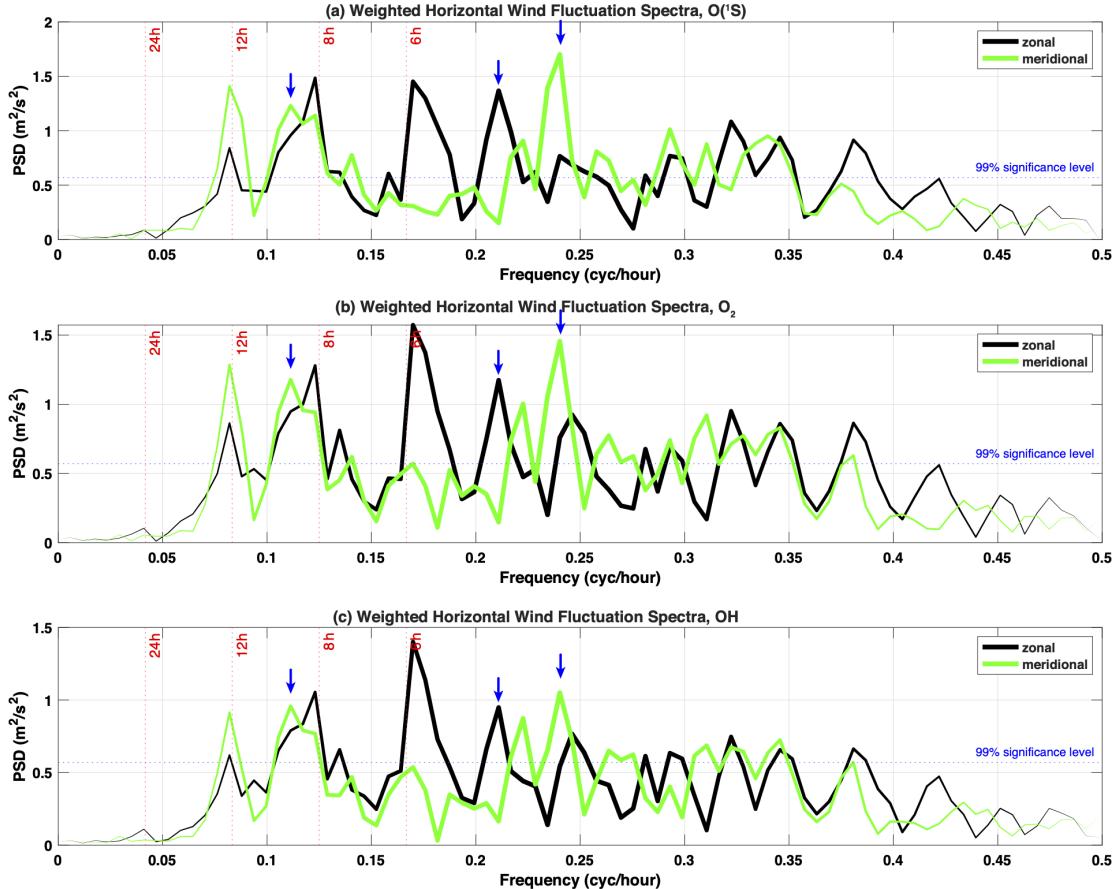


Fig. 1.