

Interactive comment on “Multi-instrument gravity-wave measurements over Tierra del Fuego and the Drake Passage – Part 1: Potential energies and vertical wavelengths from AIRS, COSMIC, HIRDLS, MLS-Aura, SAAMER, SABER and radiosondes” by C. J. Wright et al.

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[Abstract] The last sentence of the abstract has been removed, as it was perhaps a bit too obvious!

[Geller et al 2013 - MF dropoff with height] This is an important point, but due to the differences between how GWPE and GWMF are computed we intend to consider it in more detail in Part II of the study, which will study GWMF explicitly.

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[Geller et al 2013 - horizontal wavelength] The reference to *Geller et al* discussing horizontal wavelength was incorrect, and has been removed.

[Geller et al 2013 - loaded vocab] We have removed the loaded terms from the sentence, and rephrased around them accordingly.

[Geller et al 2013 - HIRDLS/SABER discussion] The implication has arisen due to poor phrasing rather than any intention to suggest it was not studied by *Geller et al*. To resolve this, we have added an explicit sentence stating that this was done by your study.

[Meteor altitudes] Your comment is correct, and the limitation is indeed the first Fresnel zone. This has been corrected.

[AIRS/SABER comparability] Since the figure is used only for explanatory purposes, it has been removed and replaced with an abstract discussion of the effect in question.

[Dissipation] Both your comments and those of Reviewer 2 have prompted closer re-examination of our results, in particular aided by the addition of a new figure 11 on the suggestion of Reviewer 2. It has become clear we have misinterpreted our results relating to dissipation. This misinterpretation mostly arose due to the use of logarithmic axes for the annual median, which made the effects of dissipation look small in the first instance but which are much more apparent in the new figure. All sections relating to dissipation have now been modified to make it clear that there is in fact significant dissipation, in particular in the UTLS in summer and in the upper stratosphere in spring.

[Wang and Geller 2003] The text has been modified to cite *Wang and Geller (2003)* and make this point clearer.

[Figure captions] Figure 5 was missing a key due to a late splitting from another figure, and one has now been added.

[Figure 8] For consistency with the rest of this study and with Part II, the data have now been density-weighted using SABER observations of density.

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[Figure 9] This apparent universal coverage is due to the horizontal wavelength axis starting at 120 km. Going by figure 8 of *Alexander et al* (QJRMS, 2010 - see paper for full reference), radiosonde coverage should extend as low as ~ 100 -400 km at the short end depending on vertical wavelength. At shorter vertical wavelengths such as those examined here, this reduces to around 100-200 km. We took the lower of these two numbers, which led to the axes extending off-scale and giving the appearance of all-wavelength coverage. We have adjusted the figure to use the larger bound, i.e. 200 km, which gives a clear notch in our figure to make this clearer.

[Wind vs Attenuation] See response to the comment on [Dissipation], above.

Interactive comment on Atmos. Meas. Tech. Discuss., 8, 6797, 2015.

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