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Atmospheric Measurement Techniques Discussions

Interactive comment on "Retrieval of intrinsic mesospheric gravity wave parameters using lidar and airglow temperature and meteor radar wind data" *by* Robert Reichert et al.

Anonymous Referee #1

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This is a nice study presenting lidar and IR temperature measurements, and meteor radar wind measurements in the mesosphere. The authors presenting a method to combine the data to provide physically useful insight in the gravity wave structures. The authors do a nice job describing their method, which, as they say, combines spectral filtering using wavelet analysis with a phase line identification algorithm. The clear physical descriptions of exactly what each instrument is actually measuring help to ensure the reader that the authors understand not only the analysis, but also the measurements. I have only a few minor suggestions for improvements to the manuscript.

Page 2 line 9-10: "Limitations . . ." This is an awkward sentence and I'm not quite sure

what point is being made.

Page 3 line 1 – Several abbreviations are given here, but they are not fully spelled out until page 4.

Page 3 line 7 – should say "deriving" and "studying"

Page 20 line 31 – The use of e.g. in this way is a bit awkward. Perhaps it would be better to place the phrase "e.g. due to vertical wind shear" inside parentheses.

Figure 9, and discussion in 5.1 and 5.2 – In both 5.1 and 5.2 there is the statement that 9b and 9d "are in good agreement". Please provide some quantification of what is meant by this. Given the different scales and the fact that 9b has positive and negative wavelengths it is difficult to visually determine the level of agreement from the figure.

Page 22 line 17 – "comprised" is not the right word here.

Page 22 line 27 - I asked 4 fellow native English speakers what "adumbrates" and no one knew. Still, it seems appropriate, so it is okay to keep it here if you like.

Page 22 last line – "angular frequency" is certainly not the right phrase here.

Page 23 line 17 – "looking to the left of" should be replaced with an appropriate date/time range.

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