

Interactive comment on “Intercomparison of FY-3 and AIRS Gravity Wave Parameter Extraction Based on Three Methods” by Shujie Chang et al.

Anonymous Referee #1

Received and published: 6 October 2019

General comments:

This work investigates the advantage and disadvantage of three types of temperature profile data for gravity wave parameter extraction based on three extraction methods, and some results which have potential in application are obtained. The logical structure of this manuscript is good. This work does not involve complex scientific issues (such as physical mechanisms), but mainly focuses on the application of technology. Therefore, the authors should concentrate on describing the results accurately. There are some grammatical and typographical errors in the manuscript. Besides, many sentences are not very clear and professional. These should be corrected before the manuscript to be published. I only list small part of errors as below, hope the authors will examine the article carefully.

C1

1. AIRS as a nadir sounder can only observe gravity waves with long vertical wavelengths. Hoffmann and Alexander (2009) found that the minimum vertical wavelength of their high-resolution AIRS retrieval is about 10-15 km in the stratosphere. The authors need to further indicate that AIRS Level 2 product can be used to extract gravity wave.
2. Many proper nouns are abbreviated when they first appear. Please check.
3. L53: prediction mode-> prediction model
4. L98: which showed-> which showed. An extra blank.
5. L122: "...between 1100 and .016 mb" What's the meaning of ".016 mb"? Please make it clear.
6. L211-L213: "In fact, some planetary scale disturbances, such as Kelvin waves, have vertical wavelengths of the same scale as gravity waves, so using these filtering methods means that the gravity wave disturbances obtained actually include a contribution from these other waves." "in fact" and "actually" are completely repetitive.
7. L296-L297: From 20 km to 35 km, the difference is gradually becomes larger. -> From 20 to 35 km, the difference gradually becomes larger.
8. L362: with vertical wavelength less than 2 km ->with a vertical wavelength less than 2 km.
9. Note that the figures of GW properties would be compared with the previous literatures.

Interactive comment on Ann. Geophys. Discuss., <https://doi.org/10.5194/angeo-2019-130>, 2019.

C2