

Interactive comment on “Comparison of gravity wave propagation direction observed by mesospheric airglow imaging at three different latitudes by using M-transform” by Septi Perwitasari et al.

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The authors would like to thank the Anonymous Referee #1 for his/her time and the valuable comments that help to improve the manuscript.

Referee's comment: The English in the paper could be improved with some proofreading by native English speakers.

Response: We have sent our manuscript to professional English editing service to improve the quality of writing.

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Referee's comment: (Abstract-line 24) MERRA-2 is less accurate at polar regions because less data going into it.

Response: The MERRA-2 reanalysis is a replacement for MERRA and includes many updates over MERRA (Bosilovich et al., 2015). MERRA-2 assimilates several kinds of satellite data in the polar stratosphere and mesosphere such as GPS-RO, AIRS, Aura/MLS, etc (Fujiwara et al., 2017). Especially, the Aura/MLS temperature data above 5 hPa after 2004 are assimilated to only MERRA-2, which contributes to the significant improvement of its stratospheric and mesospheric representation. In addition, only MERRA and MERRA-2 provide pressure level data above 1 hPa. Our analysis requires wind data at higher levels, therefore we think that the choice of MERRA-2 data in our analysis is suitable.

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