

Interactive comment on “Long-term Lidar Observations of the Gravity Wave Activity near the Mesopause at Arecibo” by Xianchang Yue et al.

R. E. Hibbins (Editor)

robert.hibbins@ntnu.no

Received and published: 28 September 2018

Before preparing and submitting a revised manuscript would the authors please provide a response to referee #1's specific comments relating to figures 2a and 4a, and referee #2's first general comment. For clarity, these comments are reproduced below:

Referee #1

Figure 2a – can you plot the MIL you refer to on the text on the figure

Figure 4a – it might be easier to compare with other sites/lidar gw studies if you plot the lognormal of the GW PE.

Referee #2

C1

The authors describe in the Discussion a relation between the wind field as published by Garcia et al. (1997) and Smith (2012) and the observed variation of GWPED. While there is indeed a pronounced altitudinal and temporal correlation, the paper lacks a description of the mechanism that relates the GW activity and zonal wind velocity. All statements are true, but remain vague and unspecific. The interpretation seems to imply pure zonal propagation of the waves, but the lidar data contain waves of all directions. Is the westerly wind between 60 and 70 km taken into account that may filter a lot of the eastward propagating GW?

Interactive comment on Atmos. Chem. Phys. Discuss., <https://doi.org/10.5194/acp-2018-731>, 2018.

C2