

Signature of gravity wave propagations from the Troposphere to Ionosphere, by Takahashi et al.

Reply to Reviewer #2

(Comments): The revised manuscript has improved significantly. However, the dTEC part is not convincing because it is hard to see any concentric wave structure in the dTEC as well as in the keograms. Thus, concentric waves in the dTEC figures should be shown convincingly or dropped from the manuscript. I believe without that portion also the manuscript has significant results.

Reply: It is pity that the reviewer did not accept our interpretation of the observed dTEC wave structure (Figure 4 in the 2nd version). On the other hand, we understand in the doubt pointed out by the reviewer (not clear wave fronts in the figure). This is due to the low spatial resolution of the dTEC map. Therefore, we accept the reviewer's argument, and the results and discussion related to the dTEC map (Figures 4, 5, 7) were deleted in the text.

Please note that the conclusion of the present work had no change by this modification.

(Comment): In the introduction section, studies using the airglow imager from the Asian sector are missing (e.g. Japan and India sectors, there are few papers published with the same objectives).

Reply: Yes, we agree with the Reviewer's comment. Three references were included in the "Introduction", (line 37):

Dynamical processes in the mesosphere to thermosphere were studied by OH and oxygen 630.0 nm airglow imaging by Kubota et al. (2000), Taori et al. (2013) and most recent by Ramkumar et al. (2021).

We thank for reviewer's critical discussion and constructive suggestion of the Editor,

Hisao Takahashi (corresponding author)