

Review of Assessing the Ducting Phenomenon and the Impact on GNSS Radio Occultation  
Refractivity over Northeast Pacific Ocean using Radiosondes and Global Analysis

Recommendation: Accept with minor revisions.

This work is original and important. The authors compare the characteristics of PBL height and ducting phenomena along the transect from Los Angeles to Hawaii using radiosondes and ERA5 analysis. They also assess the impact of ducting on GNSS Radio Occultation Refractivity. I only have a few minor comments.

Minor comments:

1. L22-23: Delete “there is no evidence of zonal dependence”.
2. L33: What does VAMO stand for?
3. L35: What does GCSS stand for?
4. L66: Add (Fjeldbo et al. 1971) after “inversion”.
5. L76: Replace “ERA5” with “the ECMWF Reanalysis version 5 (ERA5, Hersbach et al. 2020)”.
6. L99-107: Shorten this paragraph focusing on the benefits of the data set for this study.
7. L101: Replace “(Garret, 1992)” by “(Garret, 1994)”.
8. L111-112: Replace “the ECMWF Reanalysis version 5 (ERA5, Hersbach et al. 2020)” with “ERA5”.
9. L113: Remove “(Hersbach et al. 2020)”.
10. L143: The procedures for smoothing the data by 100 m should be described.
11. L167: Explain what you mean by “the residue layer”.

12. Figure 2: When was this sounding taken? The figure caption for (a), (b), (c), (d) is out of sequence.
13. L181: Add a reference to Abel integration.
14. L189: How did you perform 50 m vertical smoothing?
15. L247: What is the meaning of “moisture lapse”?
16. L249: Cite Riehl (1979) or any other references at the end of this sentence.
17. Section 3: It might be useful to plot a typical ERA5 sounding and compare it with the observed radiosonde sounding near Hawaii as well as off the California coast.

Reference:

Riehl, H. 1979: Climate and weather in the tropics. London: Academic Press. 611 pp.