

Replies to the comments from the Associate Editor:

Line 43: Replace 'IR instrument' with 'the IR instrument'.

Line 60: Replace 'in the thermodynamic profiling' with 'in thermodynamic profiling'.

Line 65: Replace 'atmosphere' with 'the atmosphere'.

Line 89: Replace 'are or will likely soon become' with 'are, or will likely soon, become'.

Lines 96-97: Replace 'height dependent' with 'height-dependent'.

Lines 122-123: Swap the order of the citations.

Lines 162, 542, 571: Although the terminology 'co-added' may be common in some parts of the lidar community, this manuscript is intended for a wider audience that is unlikely to have come across this term. I recommend either explaining this term in the first usage, or using a term such as 'photon accumulation'.

Line 178: Replace 'have' with 'has'.

Line 190: Replace 'this ceilometer is used' with 'a ceilometer used'.

Line 220: Remove 'the'.

Line 227: Replace 'a priori' with 'an a priori'.

Line 231: Replace 'satisfies' with 'satisfy'.

Line 249: Replace 'on' with 'of'.

Line 273: Replace 'the Eq 1,' with 'Eq 1,'.

Line 293: Replace 'are using' with 'use'.

Line 297: Replace 'the SGP' with 'the'.

Line 333: Replace 'like' with 'similar to'.

Line 358: Remove 'channels'.

Line 409: Replace 'the' with 'a'.

Line 456: Replace 'uses' with 'use'.

Line 459: Replace 'illustrate the' with 'illustrate that the'.

Lines 459-467 and Figs 3 and 4: You use MWRRe and MWRRe-only in the text and in the figure legends. I presume these should be MWRzo and MWRzo-only?

Line 480: Replace 'used a single elevation angle to the' with either 'included one elevation angle for' or 'included one additional elevation angle for'.

Line 481: Replace 'increase' with 'increase of'.

We agreed with every of these suggestions, and modified the text as suggested. Note that we replaced figures 3 and figure 4 with images that had “MWRzo” in the keys (instead of the “MWRRe” that was accidentally used before).