

## Corrigendum

We would like to thank both reviewers for the constructive feedback to our study, which helped to improve the paper. In particular, while preparing the replies to the reviewers, we noticed two bugs in the data presented in the AMTD paper:

1. As suggested by reviewer #1, we have checked the correlations of O4 VCDs based on GRUAN and interpolated ECMWF profiles. This comparison revealed that the time axis was flipped in the ECMWF data (while the intention was to flip the altitude axis only). I.e. the standard deviations for ECMWF listed in table 3 were too high, while the mean values were almost unaffected. We have corrected this in the revised manuscript. In addition, we now also correct for differences between surface altitudes from GRUAN vs. ECMWF, which has a large effect for mountain sites. The numbers for  $\delta_{\text{ECMWF}}$  have thus changed (generally improved) considerably.

2. As proposed by reviewer #2, we have added information on the time coverage of the analysed GRUAN sonde launches. By comparison with Table E1, we then noticed that the number of sonde launches did not match. Actually, Table E1 listed the number of *all* GRUAN profiles rather than just those for  $\text{SZA} < 85^\circ$ . We have corrected this in the revised manuscript.

In addition, we noticed a further necessary modification:

3. As the regular latitude-longitude grid of the global ECMWF data over-represents high latitudes, we now only consider the fraction of pixels corresponding to  $\cos(\text{lat})$  for each latitude for the calculation of histograms, means and standard deviations. This also affects the determination of fit parameters  $a$  and  $b$ , which have slightly changed. Consequently, all derived numbers that are based on  $a$  and  $b$  had to be updated accordingly. However, changes are in the permil range, and the general findings and conclusions of this study did not change.