Referee comments (questions) are in blue

Author comments (replies) are in black

Response to the editor

Dear Dr. Titus,

Thank you for your thorough revision of your manuscript. The reviewers are satisfied with the current version, safe for one small issue about figure 4a. If you could check that you did the correct linear regression, I am happy to accept your manuscript for publication. Thank you for choosing ACP!

AC : We thank referee #1 for their feedback, referee #2 for their feedback and final remarks, and the editor for their supervision of the entire process. Figure 4 was updated with the corrected linear regression. No changes were made to the text of the manuscript. Please see the detailed response below.

Specific comment from anonymous reviewer #2 :

Could the authors double-check the best linear regression in Fig. 4a ?

The vast majority of the data lies within +-20m/s, where Rayleigh winds end up being +-1m/s stronger than Mie.

I'd expect that the overall slope is dominated by the region with most data, which should be slightly larger than 1. The actual slope is 0.9 instead. It might be that the fit is done with the datasets switched in the equation: X actually being Rayleigh winds instead of Mie in the code?

Correct, the fit was performed with the datasets switched in the equation. In the updated Fig. 4 (see below) the fit is performed with X being Mie winds and Y being Rayleigh winds. The slope increases from 0.90 in the previous version to 0.99.

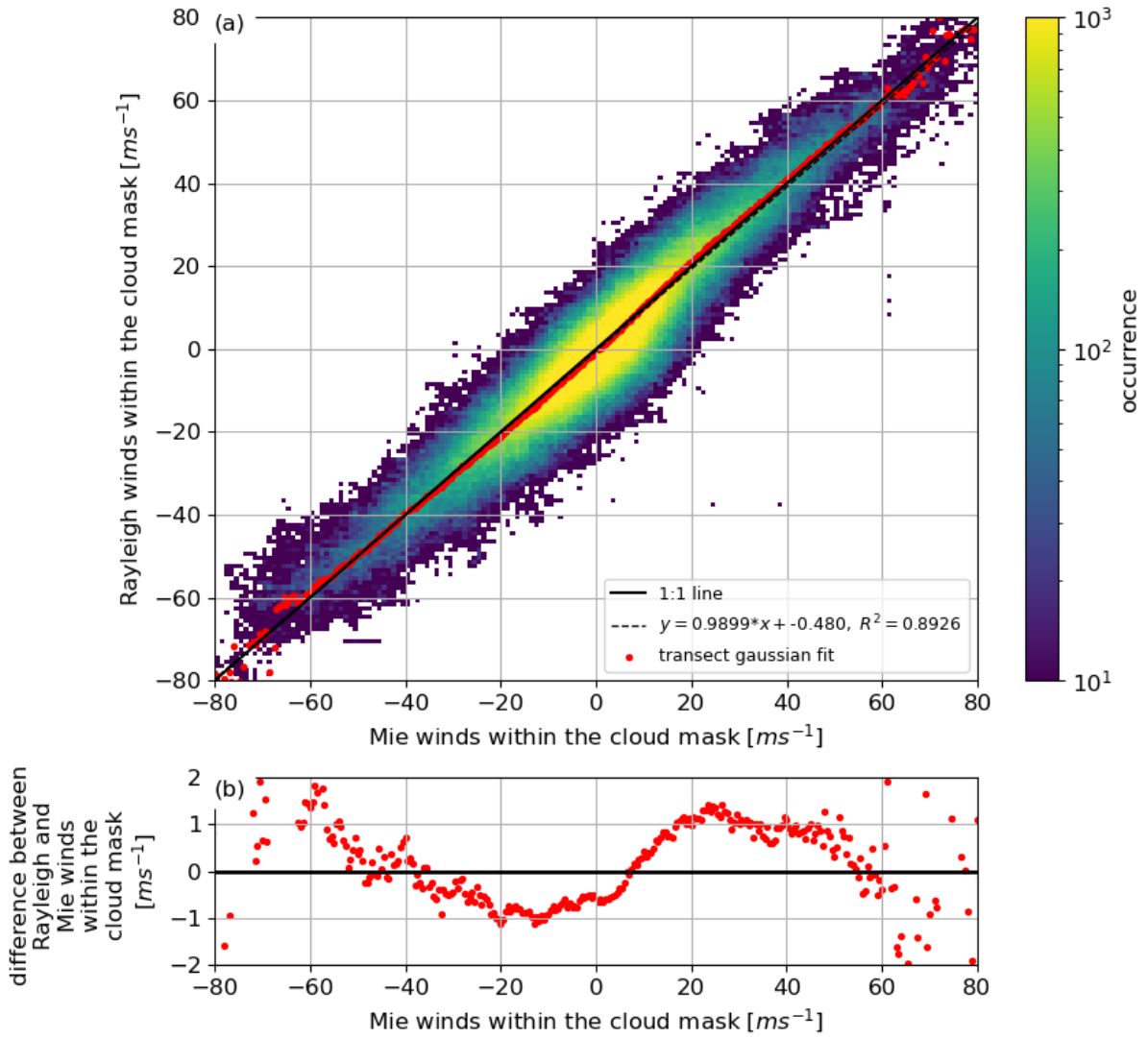

Figure 4: (a) 2D-PDF of pairs of colocated Mie winds and the Rayleigh winds when they both coexist within the cloud mask. The black dotted line represents the best linear regression. The 1:1 line is represented as a solid black line. For each point along this 1:1 line, a Gaussian was fitted to all data points lying along a perpendicular transect. Where the data spread and statistics allow a satisfactory fit, the maximum of the Gaussian is plotted as a red filled circle each 0.5 ms^{-1}. (b) Maximum of the Gaussian of the differences between Rayleigh and Mie winds within the cloud mask as a function of the Mie winds within the cloud mask. A sample of 50 orbit files of the year 2020 are analysed with a total of 10^6 bins of 3 km x 480 m where both Rayleigh and Mie winds coexist within the cloud mask.