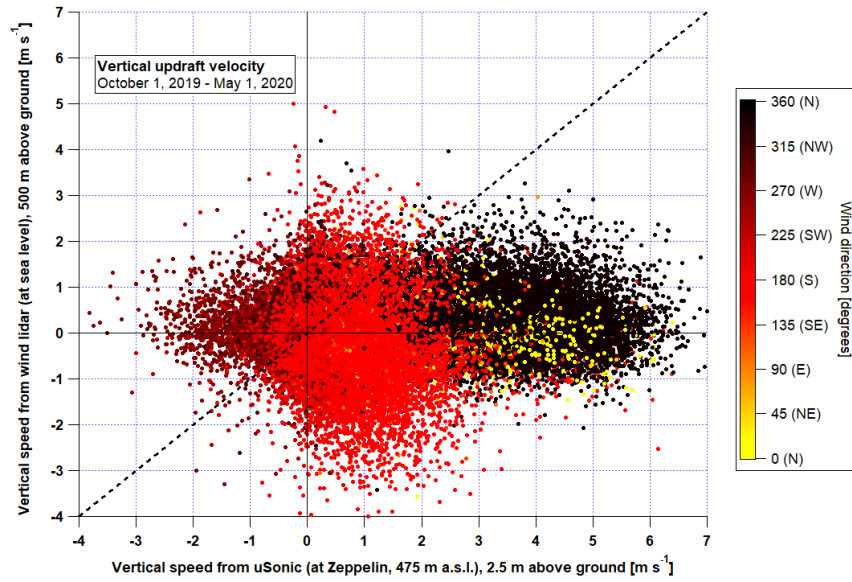
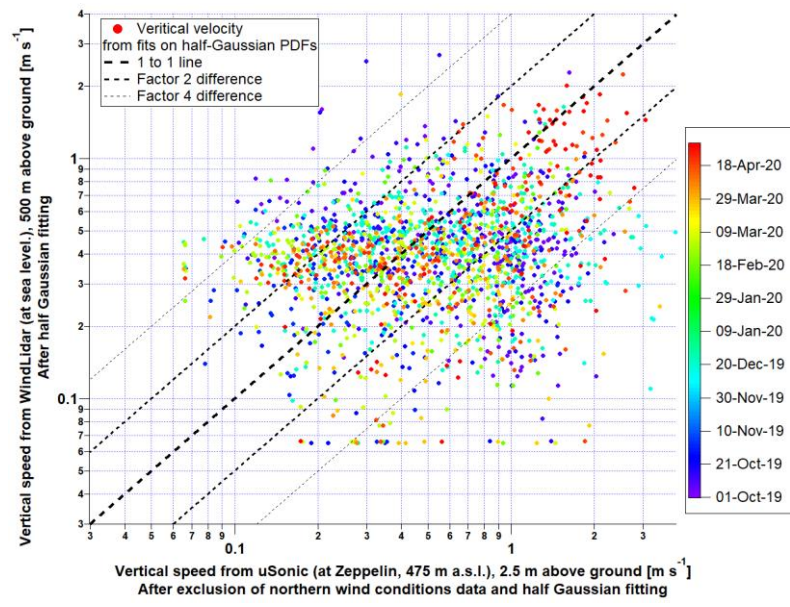


# 1 Supplement

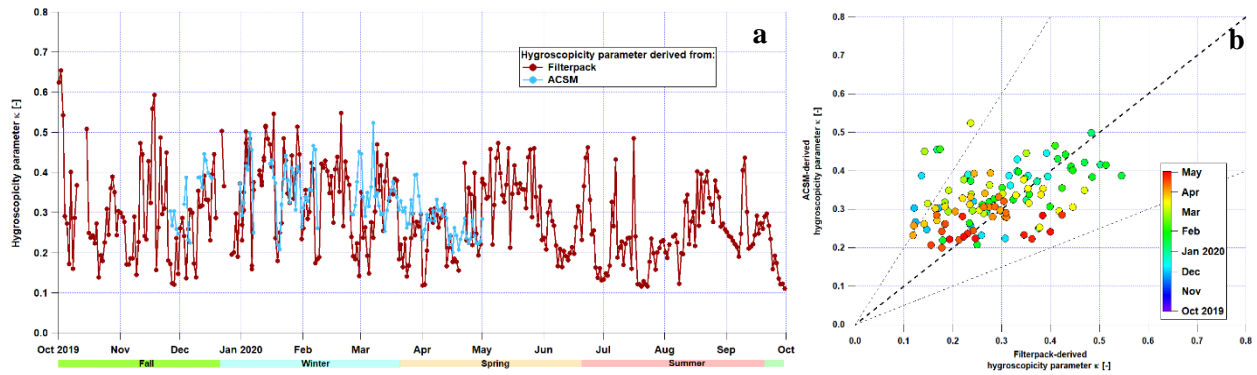


2  
3 **Figure S1. Comparison of updraft velocity measured over the whole campaign by the wind LiDAR and the uSonic. The**  
4 **location of the two instruments is separated by a horizontal distance of approximately two kilometers, and a vertical distance**  
5 **close to 475 m. To account for the vertical difference, 500 m-altitude wind LiDAR data are selected.**

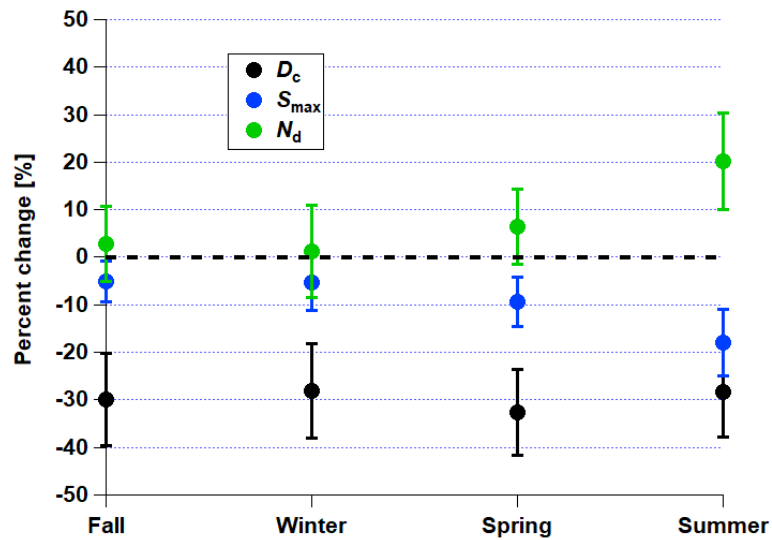


6  
7

Figure S2. Comparison between wind LiDAR and uSonic 1-hour grouped data over all simultaneous measurement periods.



9  
 10 **Figure S3. a):** Time series of daily-averaged hygroscopicity parameter  $\kappa$  as derived from filterpack, high-volume sampler  
 11 and aethalometer data (in dark red) and from ACSM (PM<sub>1</sub>) and aethalometer data (in blue). b): Scatterplot of daily-  
 12 averaged ACSM-derived versus filterpack-derived particle hygroscopicity value  $\kappa$  over the whole campaign, coloured by  
 13 date.



14  
 15 Figure S4. Sensitivity analysis showing the mean seasonal percent change of predicted potential maximum cloud  
 16 supersaturation  $S_{max}$ , cloud droplet number concentration  $N_d$  and particle activation diameter  $D_{act}$  assuming that half of the  
 17 aerosol mass consists of sea salt. Error bars represent the standard deviation around the seasonal mean.