



Supplement of

Varying chiral ratio of pinic acid enantiomers above the Amazon rainforest

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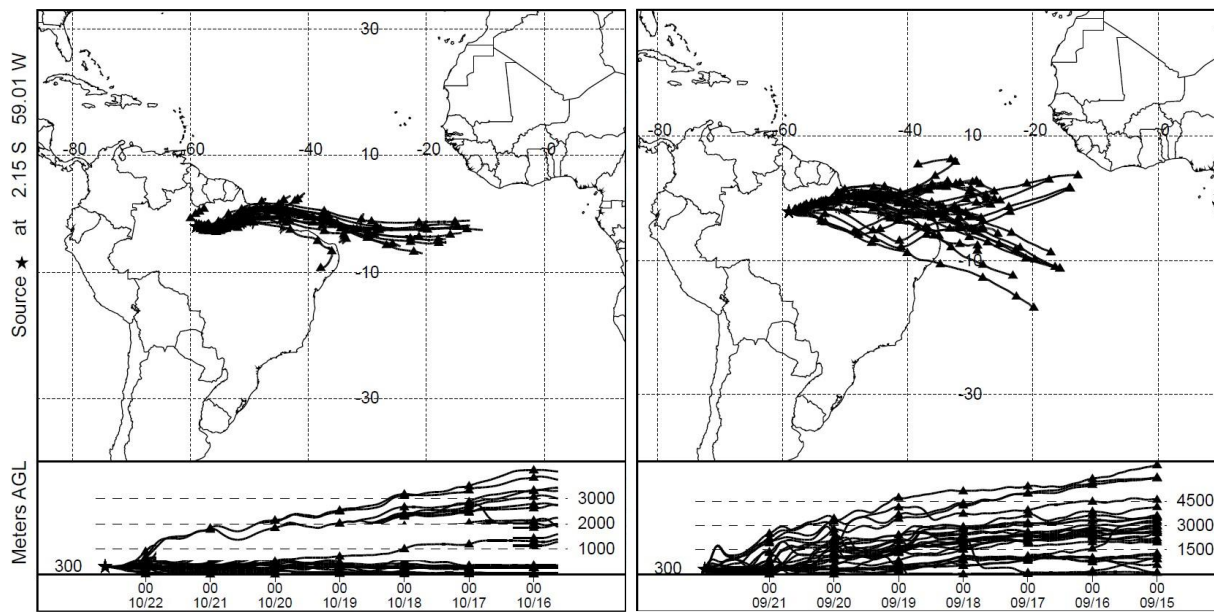
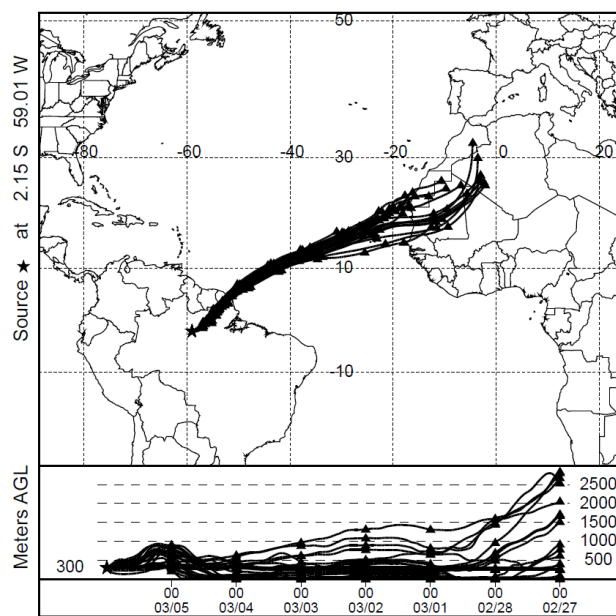


Figure S1: The 7 d HYSPLIT (Stein et al., 2015) backward trajectories starting at 300 m above ground level for the dry season 2018 campaign (left) and 2019 campaign (right).



5 Figure S2: The 7 d HYSPLIT backward trajectories starting at 300 m above ground level for the wet seasons 2019 campaign.

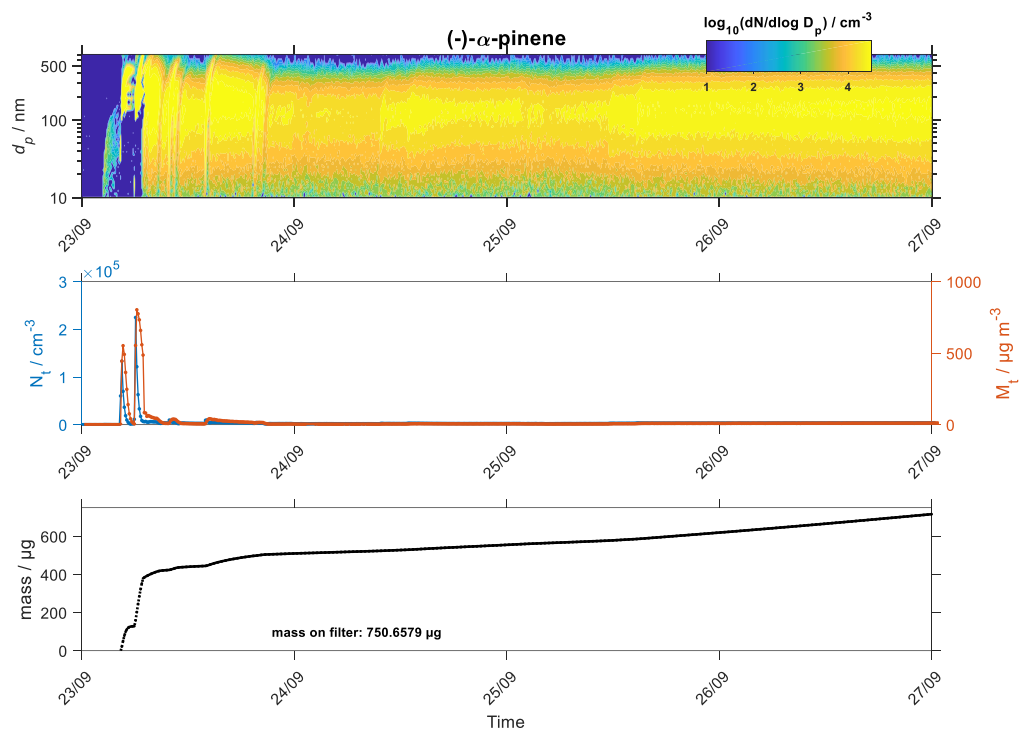
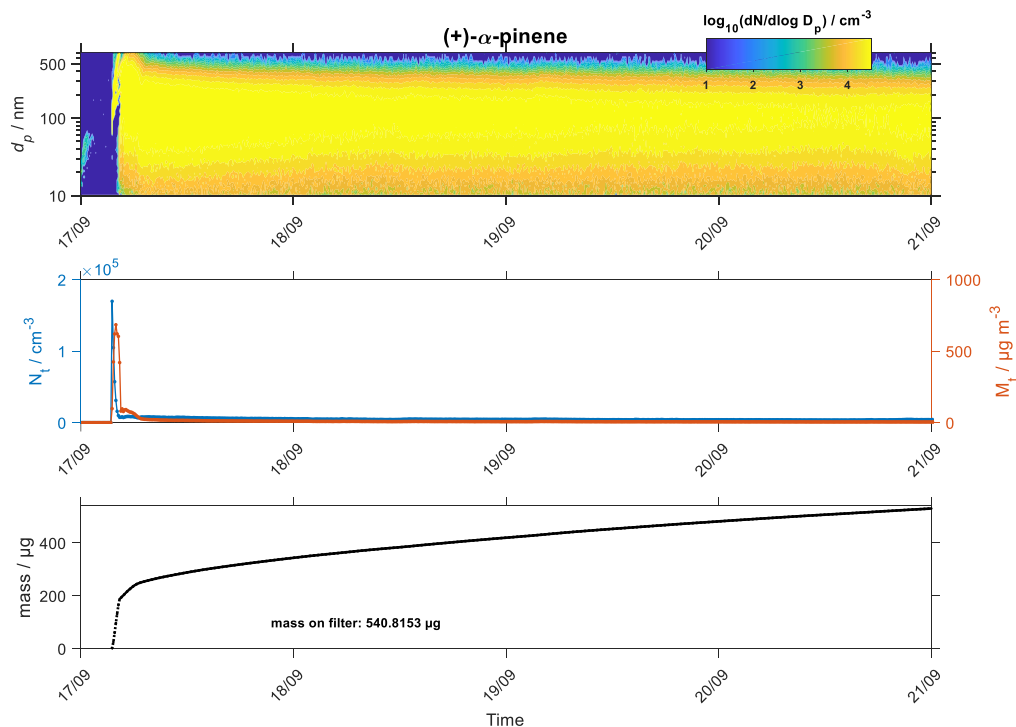


Figure S3: SMPS data of the chamber experiment of (-)- α -pinene and ozone. Additionally, the total particle number (N_t) and total particle mass (M_t) are displayed as well as the collected aerosol mass on the filter.



10 **Figure S4:** SMPS data of the chamber experiment of (+)- α -pinene and ozone. Additionally, the total particle number (N_t) and total particle mass (M_t) are displayed as well as the collected aerosol mass on the filter.

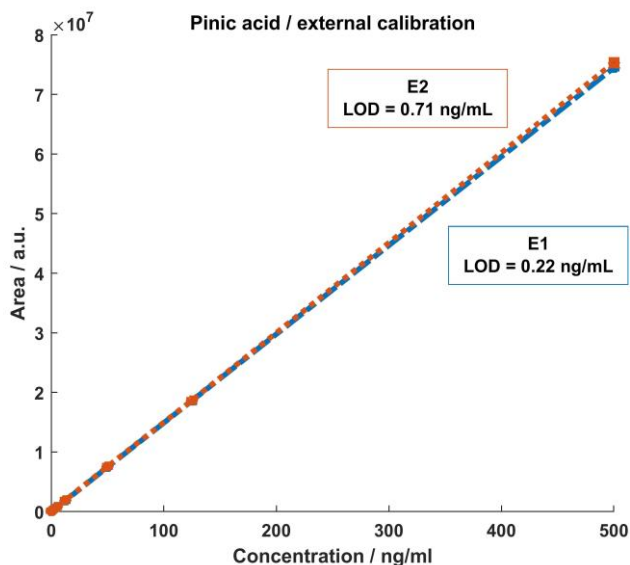


Figure S5: External calibration for the pinic acid enantiomers. Both structures show similar signal areas for increasing standard concentrations. The calculated limit of detection is below 1 ng/ml for both stereoisomers.

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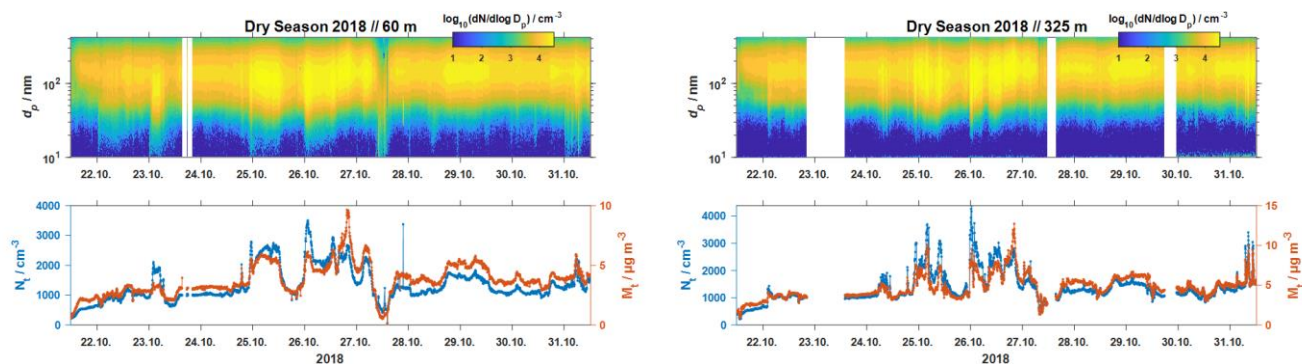


Figure S6: SMPS data for the dry season 2018 at 60 m and 325 m altitude. The calculated total particle numbers and total particle masses are illustrated in the lower panels. The instruments did not work during the 23., 27., and 30.10.2018.

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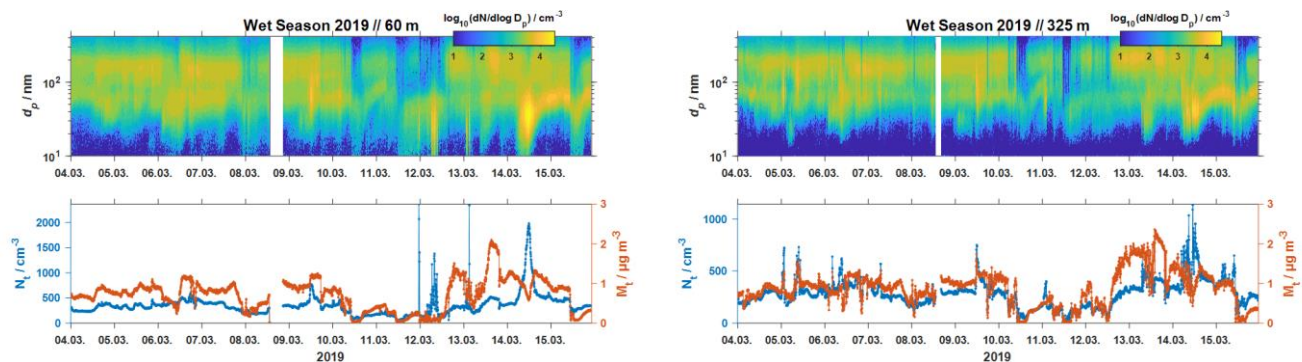


Figure S7: SMPS data for the wet season 2019 at 60 m and 325 m altitude. The calculated total particle numbers and total particle masses are illustrated in the lower panels. The instruments did not work during the 08. and 12.03.2019.

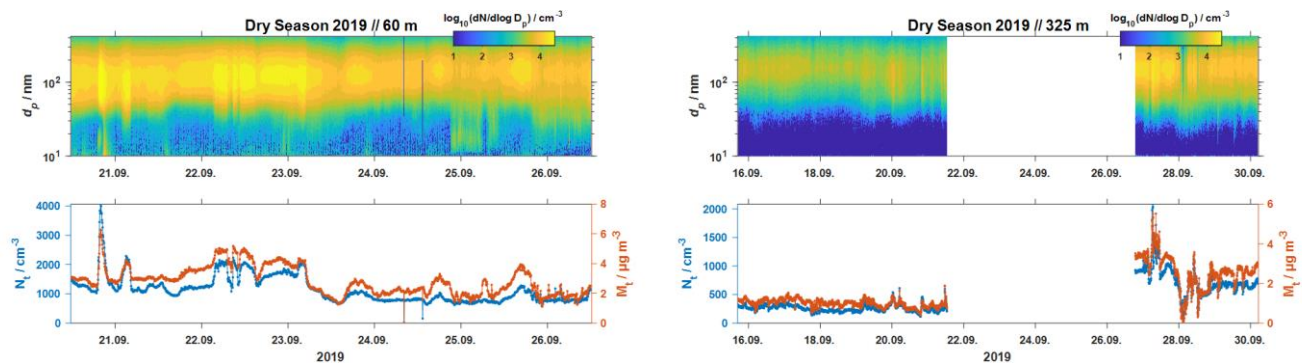
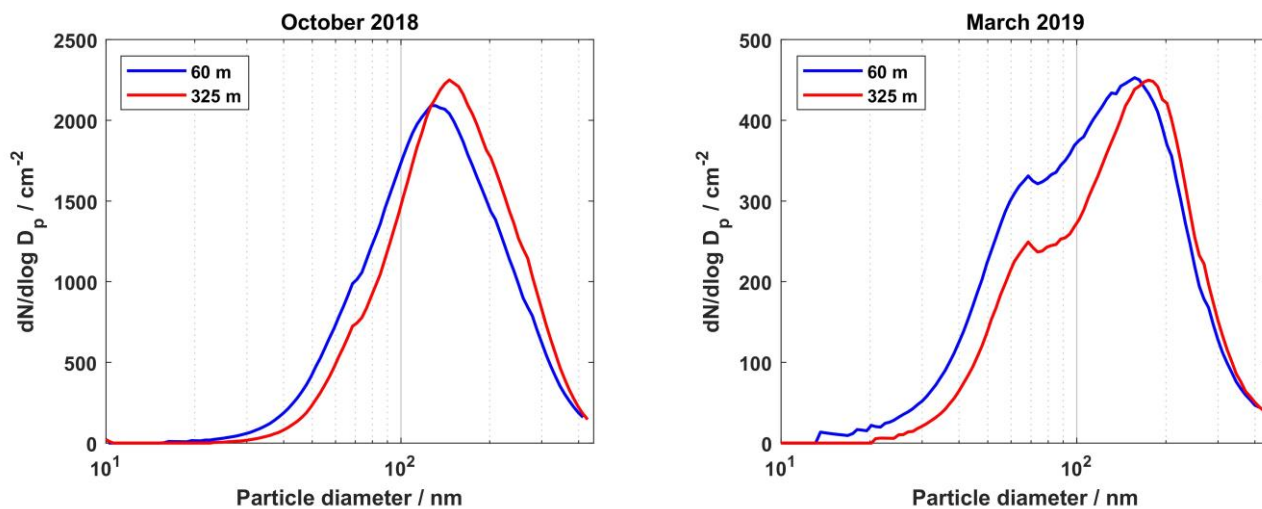


Figure S8: SMPS data for the dry season 2019 at 60 m and 325 m altitude. The calculated total particle numbers and total particle masses are illustrated in the lower panels. The instrument at 325m did not work between the 21.09. and 27.09.2019. Thus, a longer period is displayed.



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Figure S9: Typical median particle number size distributions for the dry season (left) and wet season (right). The wet season is characterized by a bimodal distribution with two maxima at roughly 70 nm and 150 nm particle diameter.

References

- Stein, A. F., Draxler, R. R., Rolph, G. D., Stunder, B. J. B., Cohen, M. D., and Ngan, F.: NOAA's HYSPLIT Atmospheric
 30 Transport and Dispersion Modeling System, *Bulletin of the American Meteorological Society*, 96, 2059–2077,
<https://doi.org/10.1175/BAMS-D-14-00110.1>, 2015.