



Supplement of

Measurement report: Hygroscopicity and mixing state of submicron aerosols in the lower free troposphere over central China: local, regional and long-range transport influences

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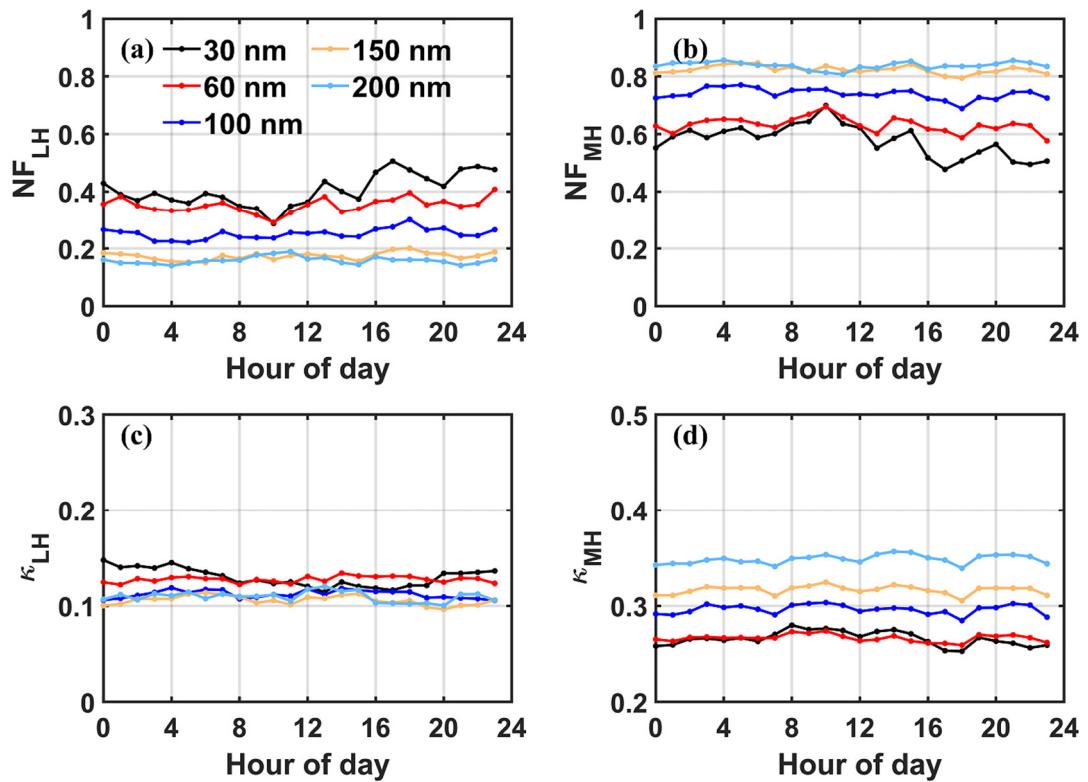


Figure S1. Diurnal variation of the number fractions and individual κ of LH and MH mode particles under the entire campaign.

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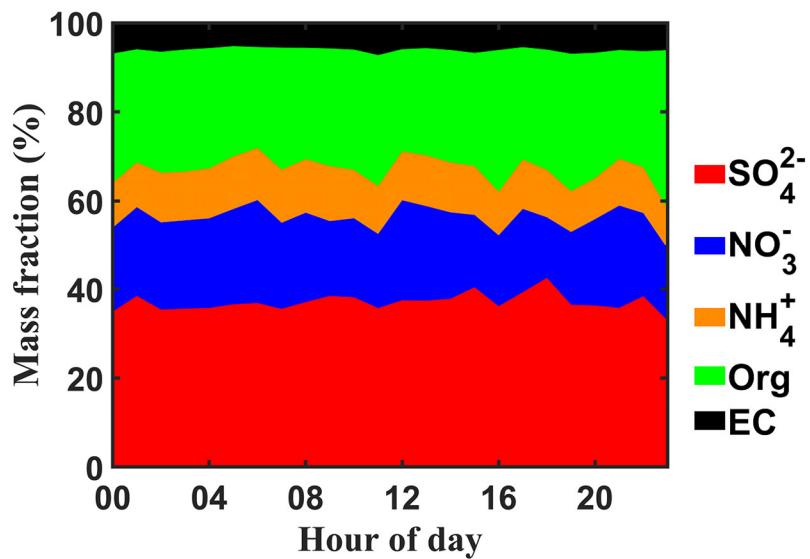
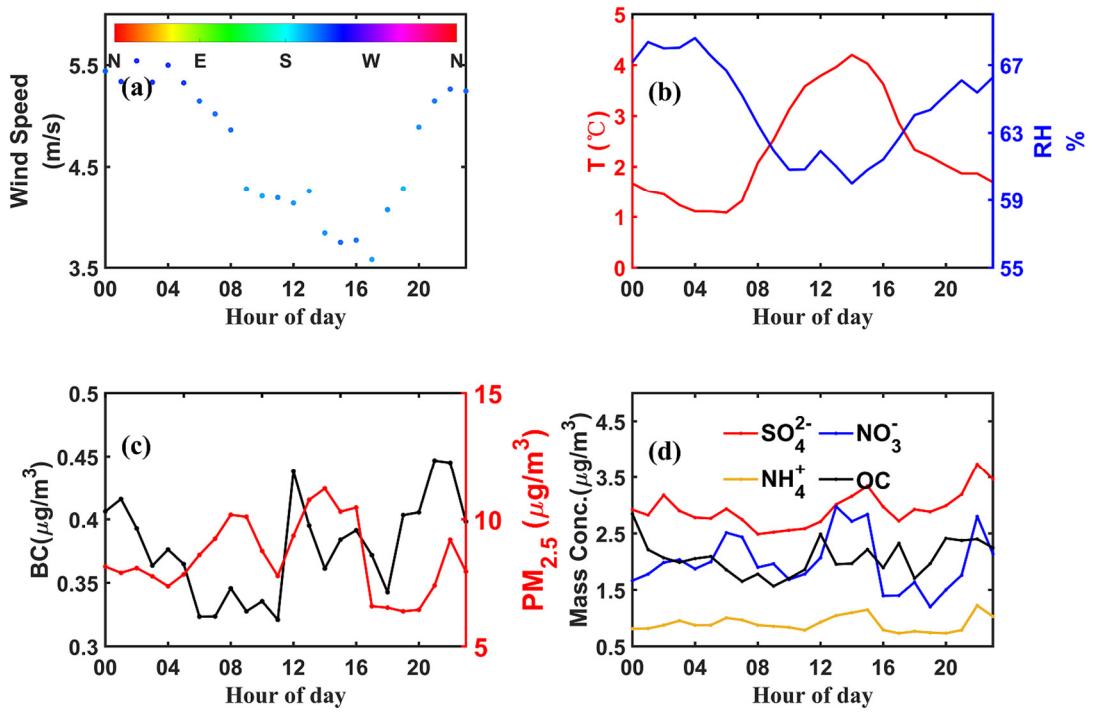
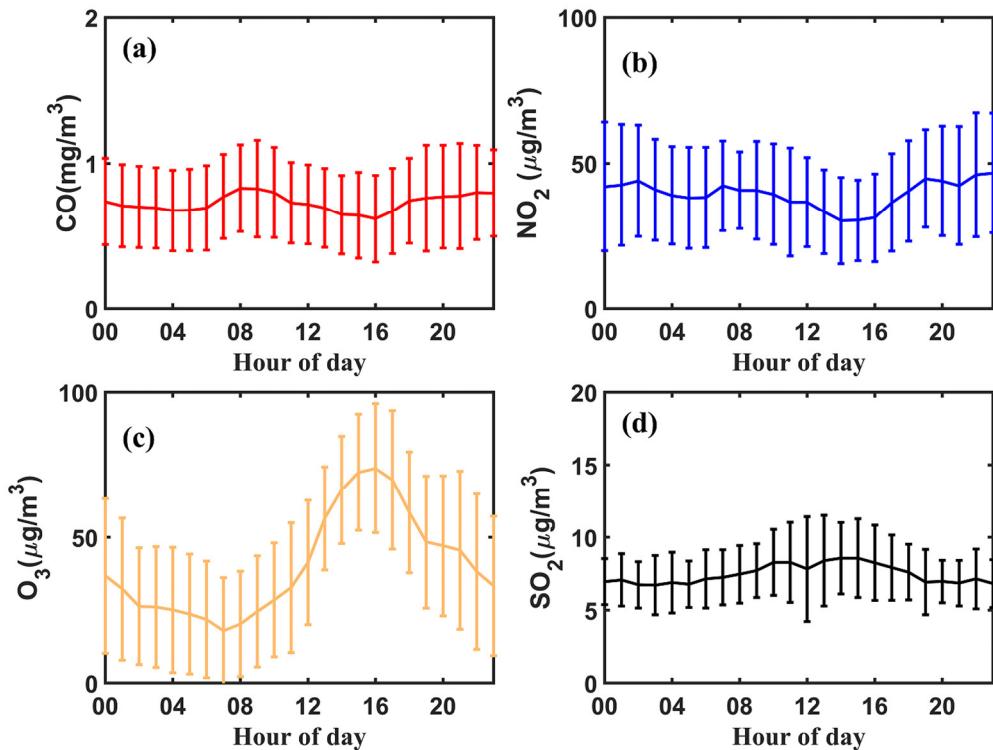


Figure S2. Diurnal variation of average proportions of different chemical components.

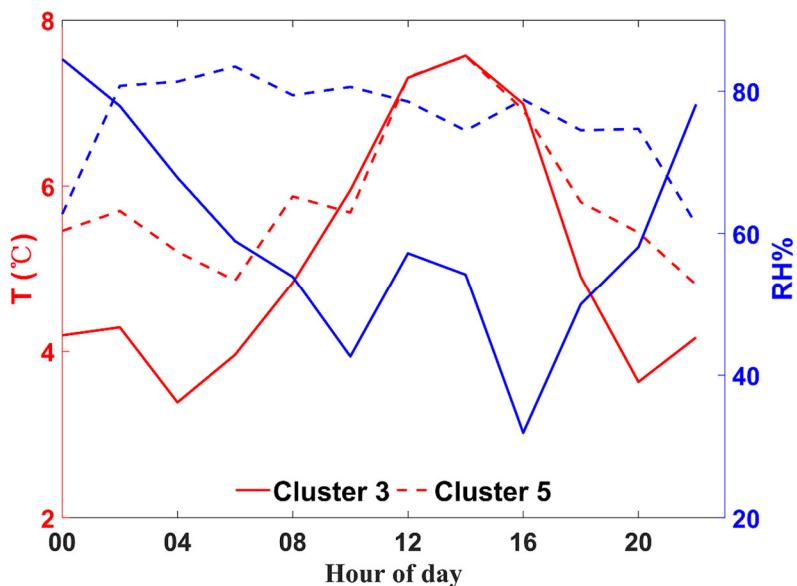


45 Figure S3. Diurnal variation of (a) wind speed and direction, (b) relative humidity and ambient temperature, (c) BC and PM_{2.5} mass concentrations, (d) and the mass concentrations of chemical components (online measurements) during this study.



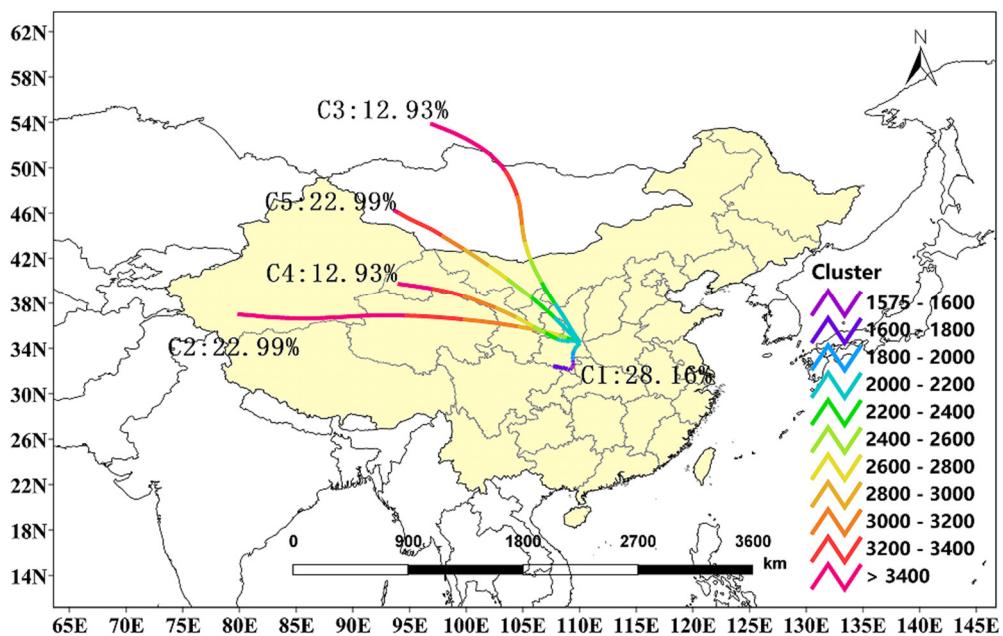
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Figure S4. Diurnal variations in the concentrations of atmospheric trace gases: (a) CO, (b) NO₂, (c) O₃, and (d) SO₂.



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Figure S5. The diurnal variations in temperature and humidity for Cluster 3 and Cluster 5 during the observation period.



60 Figure S6. 72 h backward trajectory clusters at 2060 m above ground level. Different colors represent trajectory altitudes in distinct ranges. Percentages indicate the proportion of each cluster.

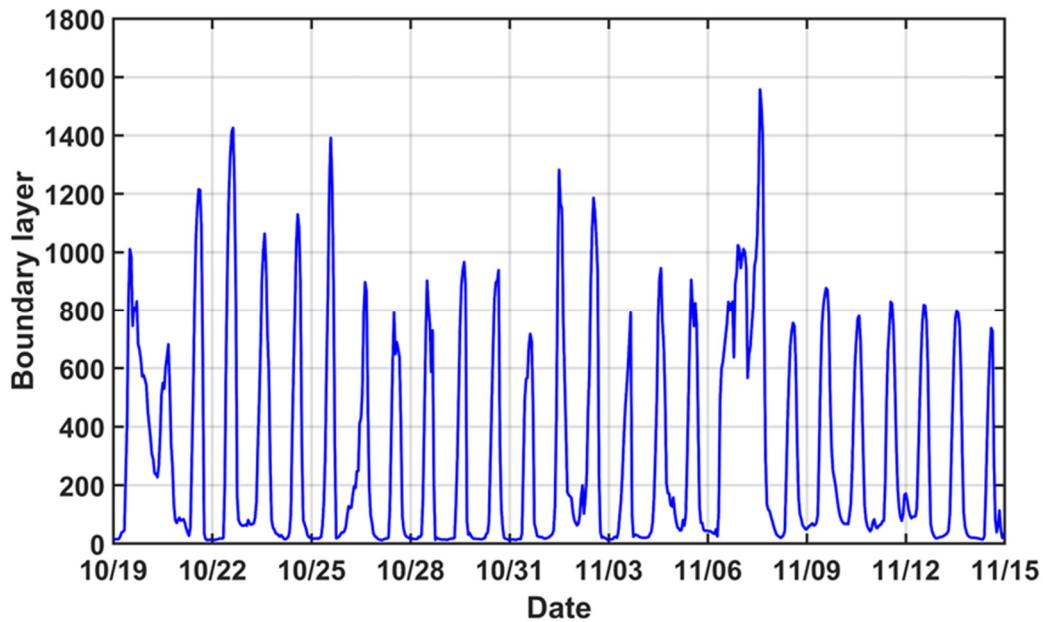


Figure S7. Time series of boundary layer height variations during the observation period.

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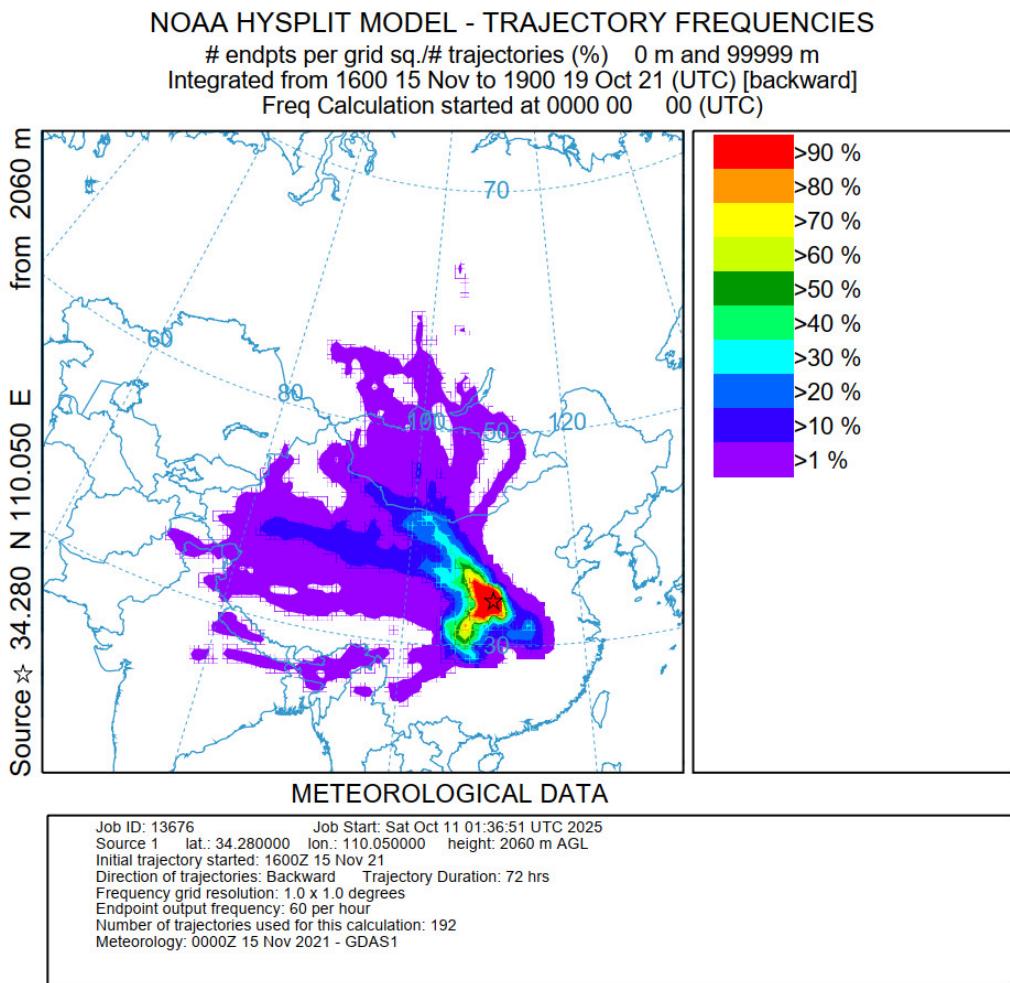


Figure S8. Backward air mass trajectories with frequency analysis.