

Sensitivity of NO₂ photolysis frequency to aerosol optical properties

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Text S1

Figure S1 to Figure S4

Text S1 Supporting figures and datasets

This supplementary material provides the observational aerosol optical-property time series and the additional sensitivity diagnostics used to support the main manuscript. The observational figures include absorption coefficients, scattering coefficients from the Peking University Changping campus. The sensitivity figures summarize the pairwise interaction analysis in Chapter 3 and the fixed-factor CP analysis in Chapter 4.

For the observational time series, open circles indicate the original measurements and solid curves indicate 1 h mean values. These figures are used to show the temporal representativeness and variability of the input optical parameters. For the sensitivity diagnostics, the interaction figure shows which factor pairs contribute most strongly to OAT-CP differences, while the conditional CP figure shows whether the ranking of factor sensitivity changes under different fixed physical states.

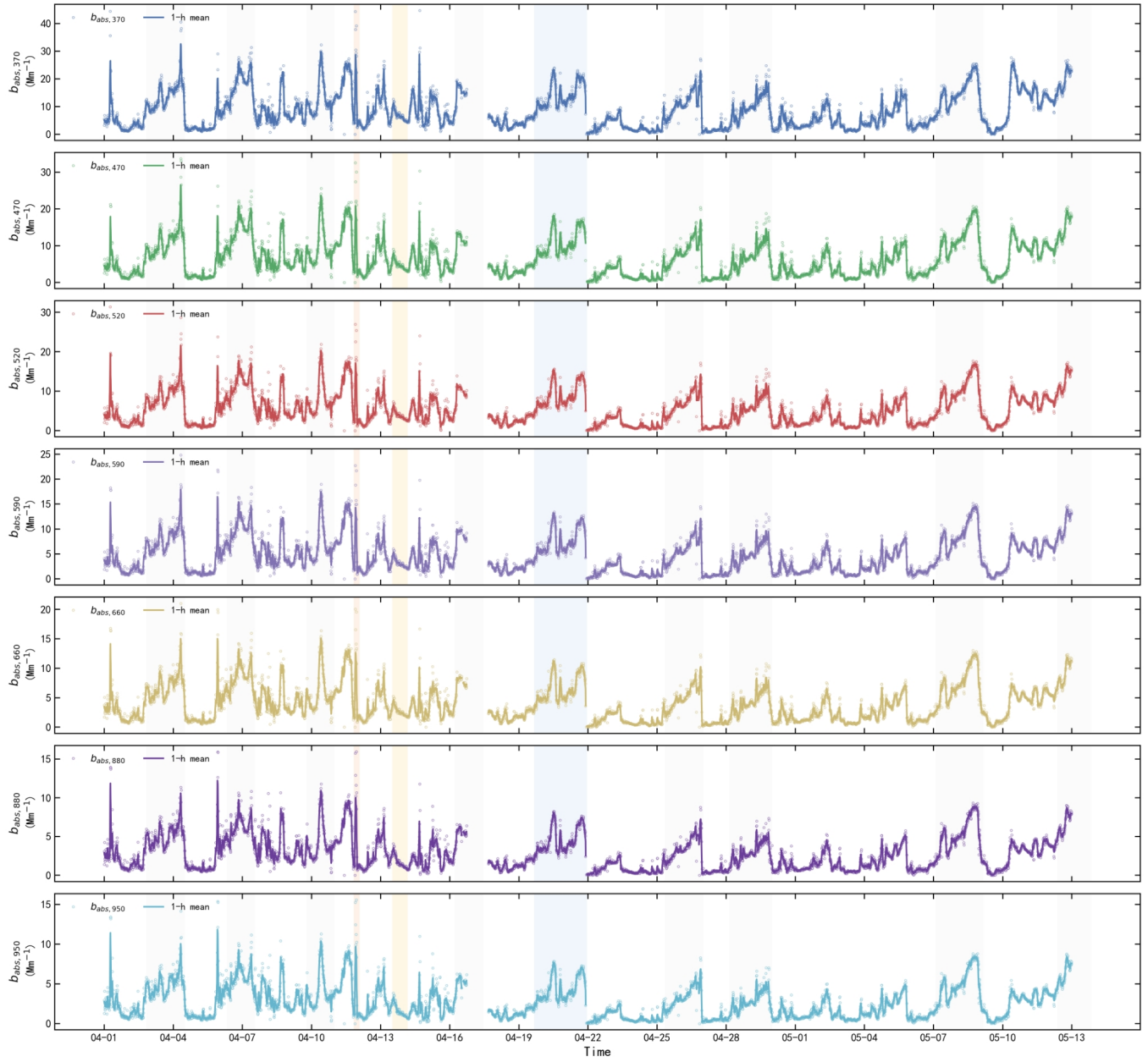


Figure S1: Time series of aerosol absorption coefficients (b_{abs}) at 370, 470, 520, 590, 660, 880, and 950 nm measured at the Peking University Changping campus. Dots represent original observations, and solid lines represent 1 h mean values.

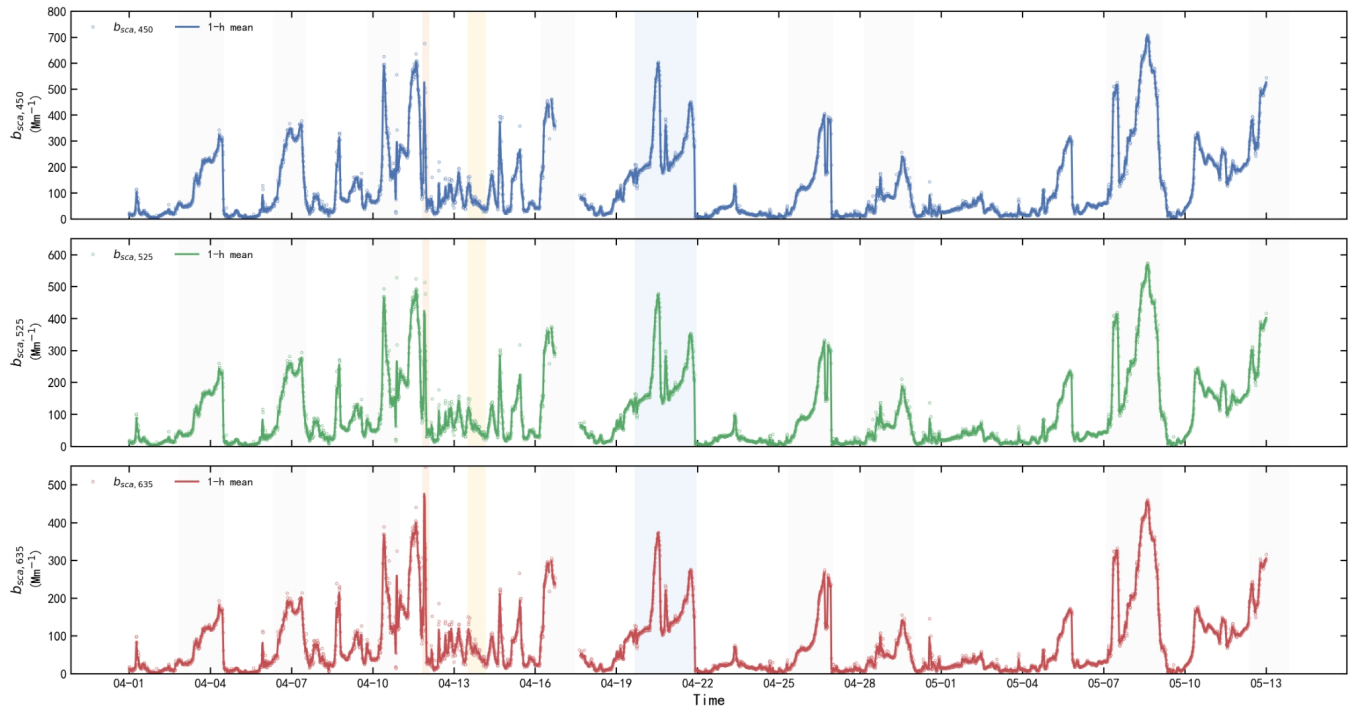


Figure S2: Time series of aerosol scattering coefficients (b_{sca}) at 450, 525, and 635 nm measured at the Peking University Changping campus. Dots represent original observations, and solid lines represent 1 h mean values.

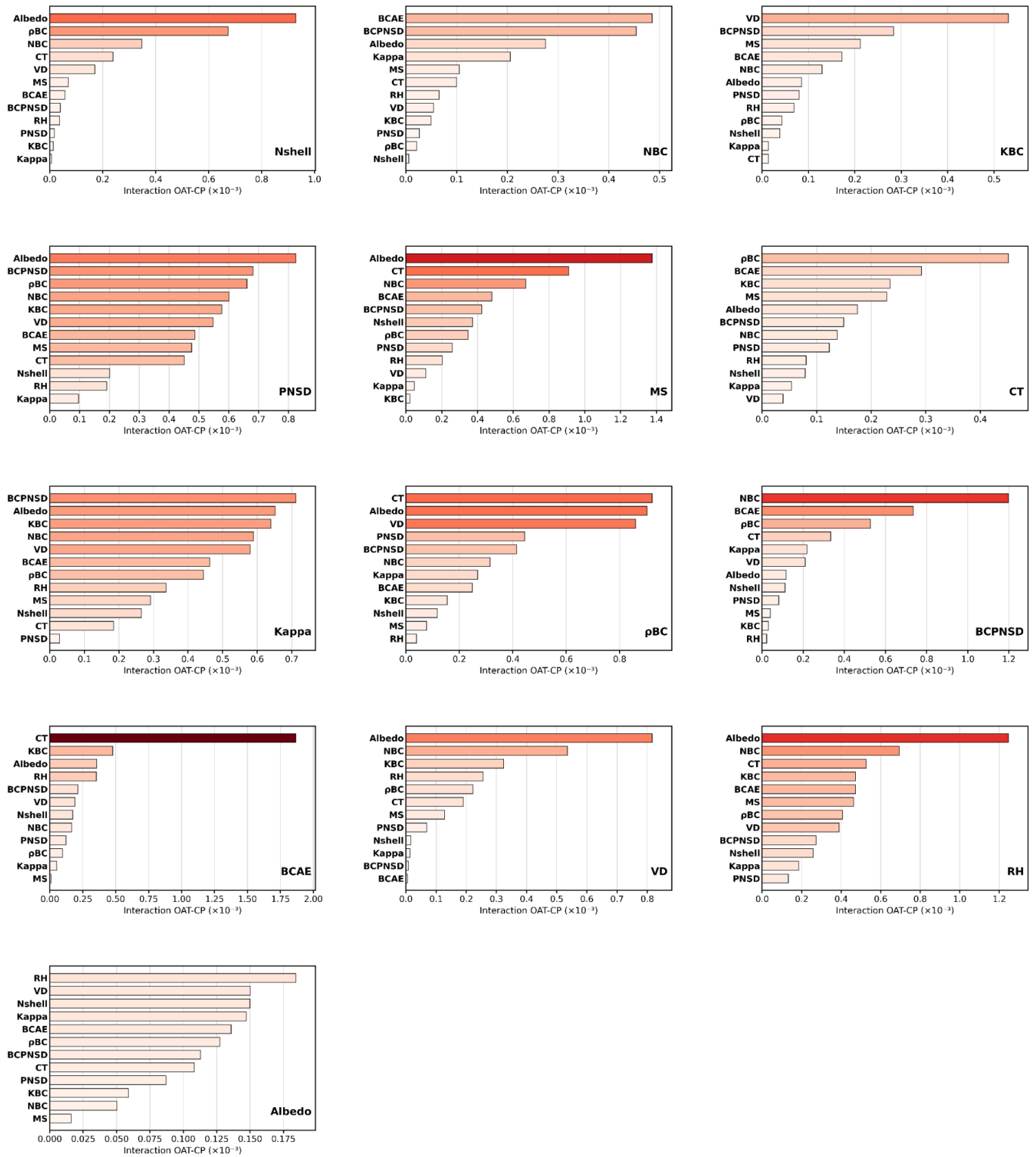


Figure S3: Pairwise factor interaction analysis used in Chapter 3. Each panel shows the ranked interaction contribution when the factor indicated in the lower right of the panel is used as the reference factor. Darker bars highlight the dominant interaction partners.

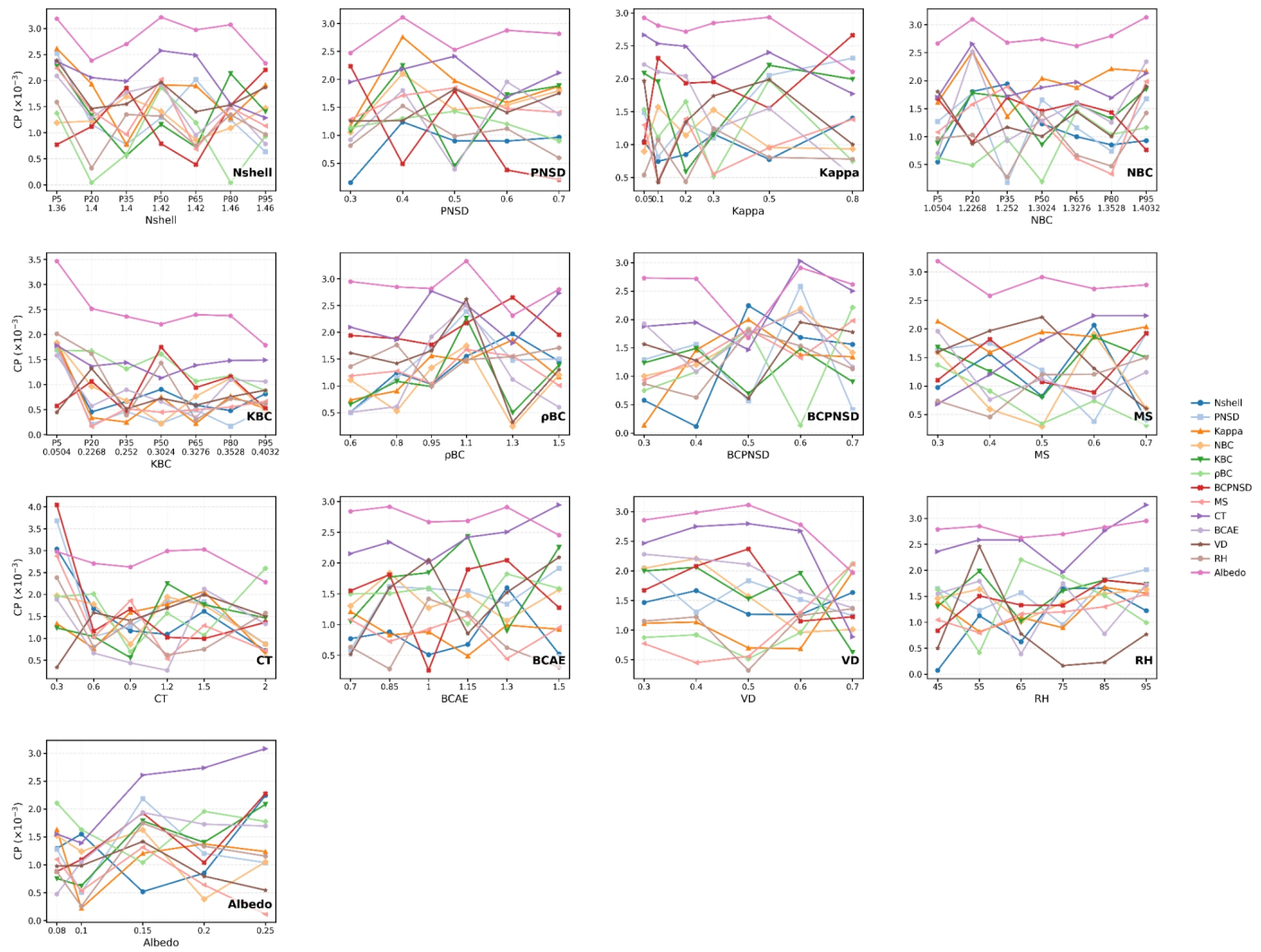


Figure S4: CP sensitivity changes used in Chapter 4. Each panel shows how the CP sensitivity changes when one factor is fixed at different values, while the colored lines represent the responses of the remaining factors. This figure is used to evaluate the stability of factor sensitivity rankings under different physical states.