Supplement of

Contrasting ambient fine particles hygroscopicity derived by HTDMA and HR-AMS measurements between summer and winter in urban Beijing

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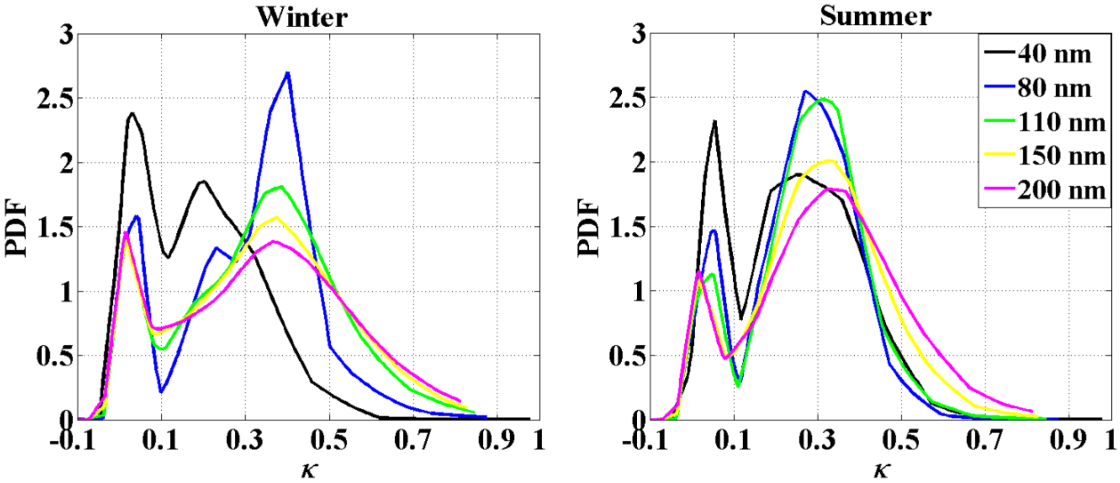


Figure S1. Mean probability density functions of hygroscopicity parameter derived from hygroscopic growth factor for 40, 80, 110, 150, 200 nm in winter and summer period respectively.

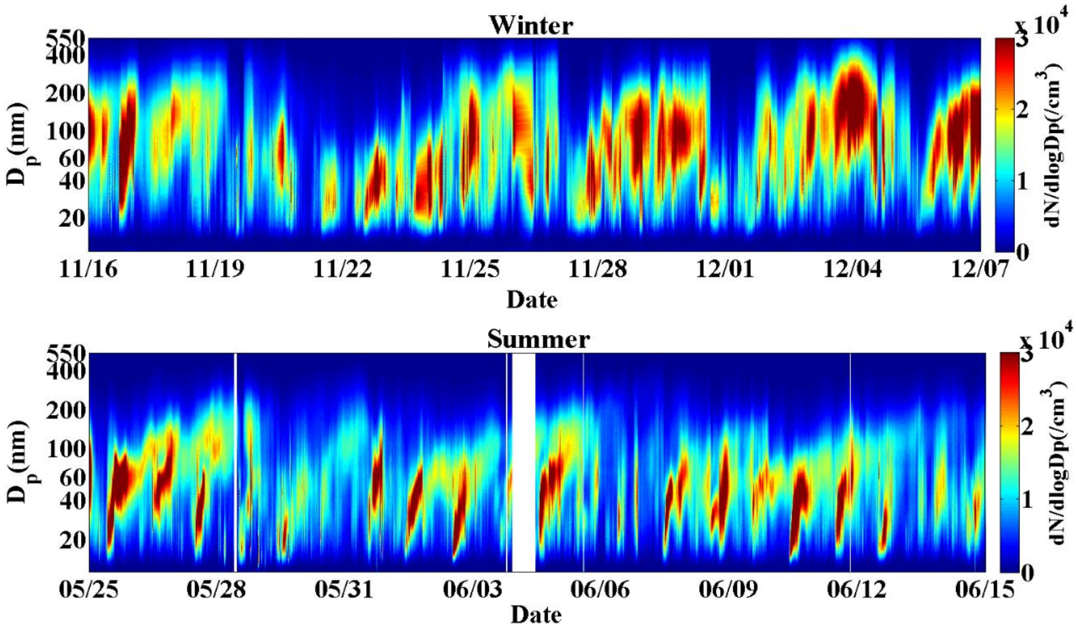


Figure S2. Time series of particle number size distribution in winter and summer period.

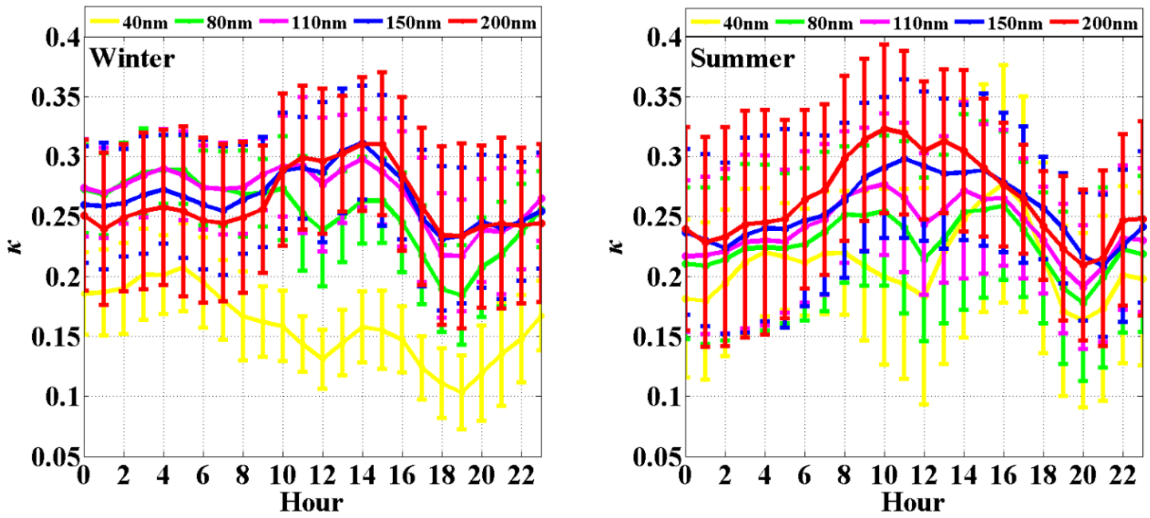


Figure S3. Diurnal variations in the hygroscopicity parameter derived from hygroscopic growth factor for 40, 80, 110, 150, 200 nm in winter and summer period respectively.

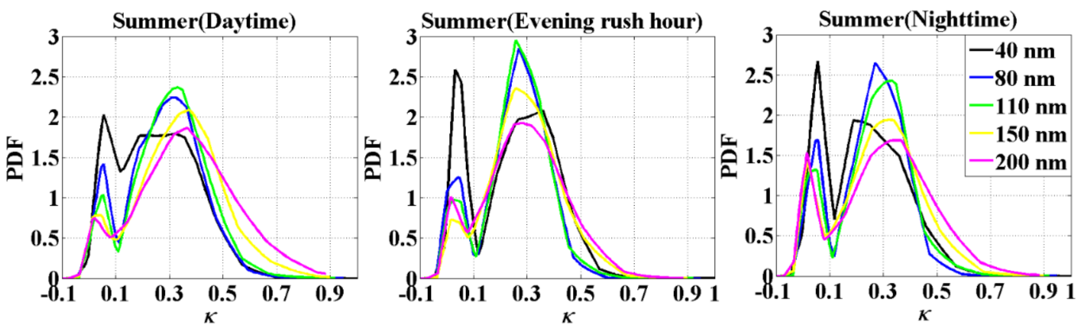


Figure S4. Mean probability density functions of hygroscopicity parameter derived from hygroscopic growth factor for 40, 80, 110, 150, 200 nm during daytime (14:00-19:00 LT), evening rush hour(16:00-20:00 LT), and nighttime (00:00-06:00 LT) under clean and polluted conditions in summer period.

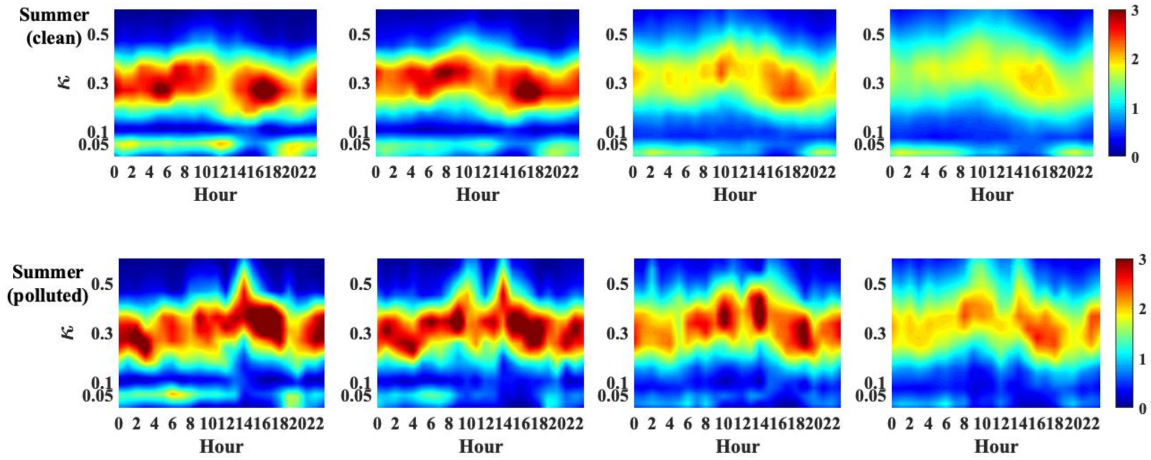
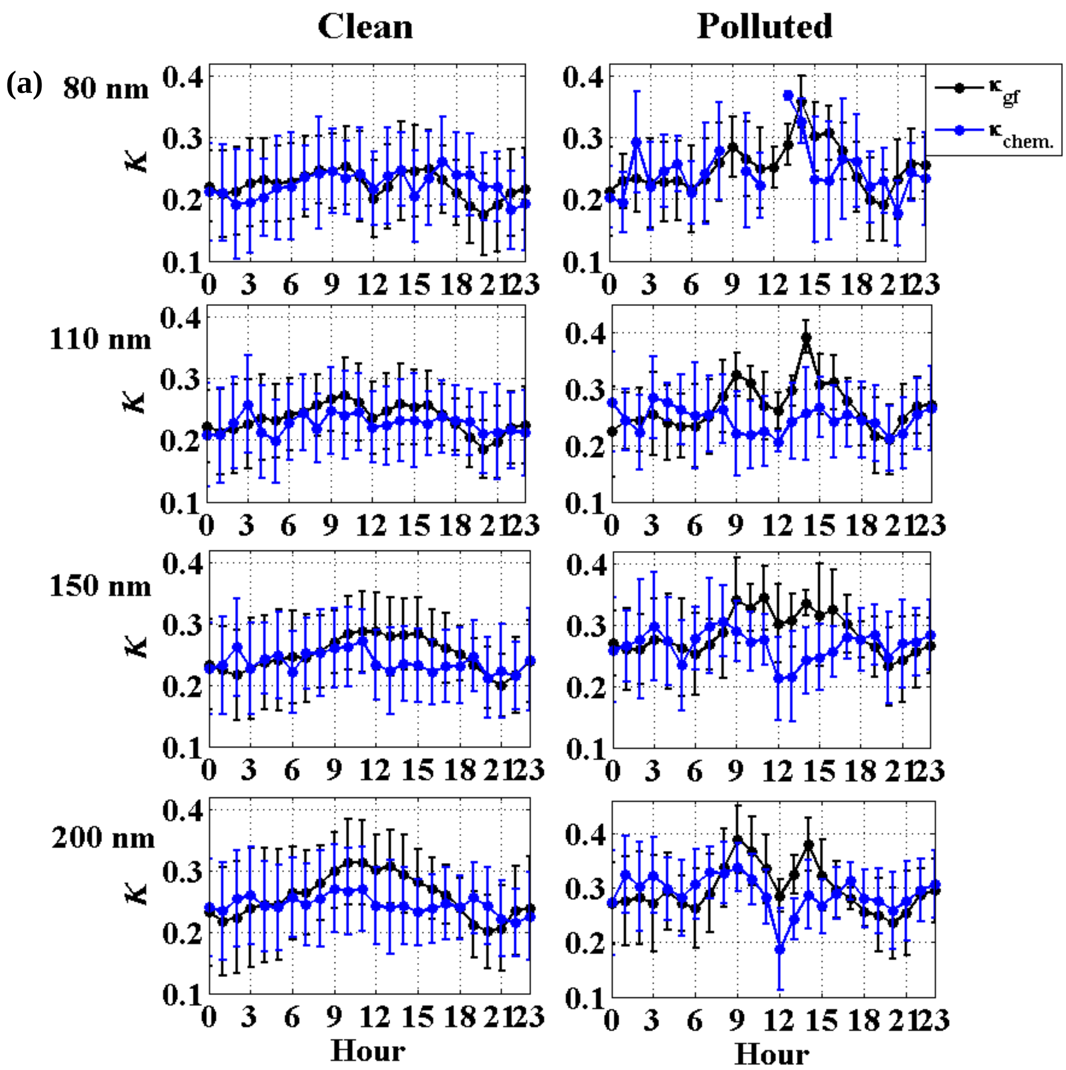


Figure S5. Diurnal cycles of κ_{gf} -PDF for 80, 110, 150 and 200 nm particles under clean and polluted conditions in summer period.



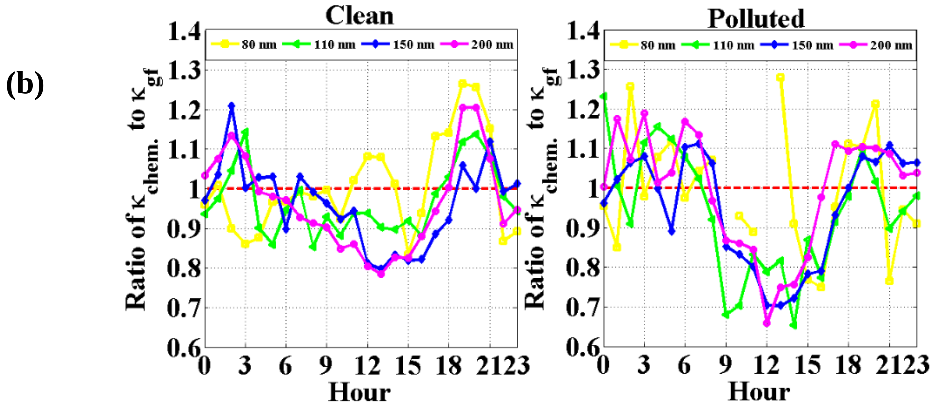


Figure S6. Diurnal variations in (a) κ_{chem} using size-resolved chemical composition data and κ_{gf} in summer period; and (b) ratio of κ_{chem} to κ_{gf} under clean and polluted conditions in summer period.

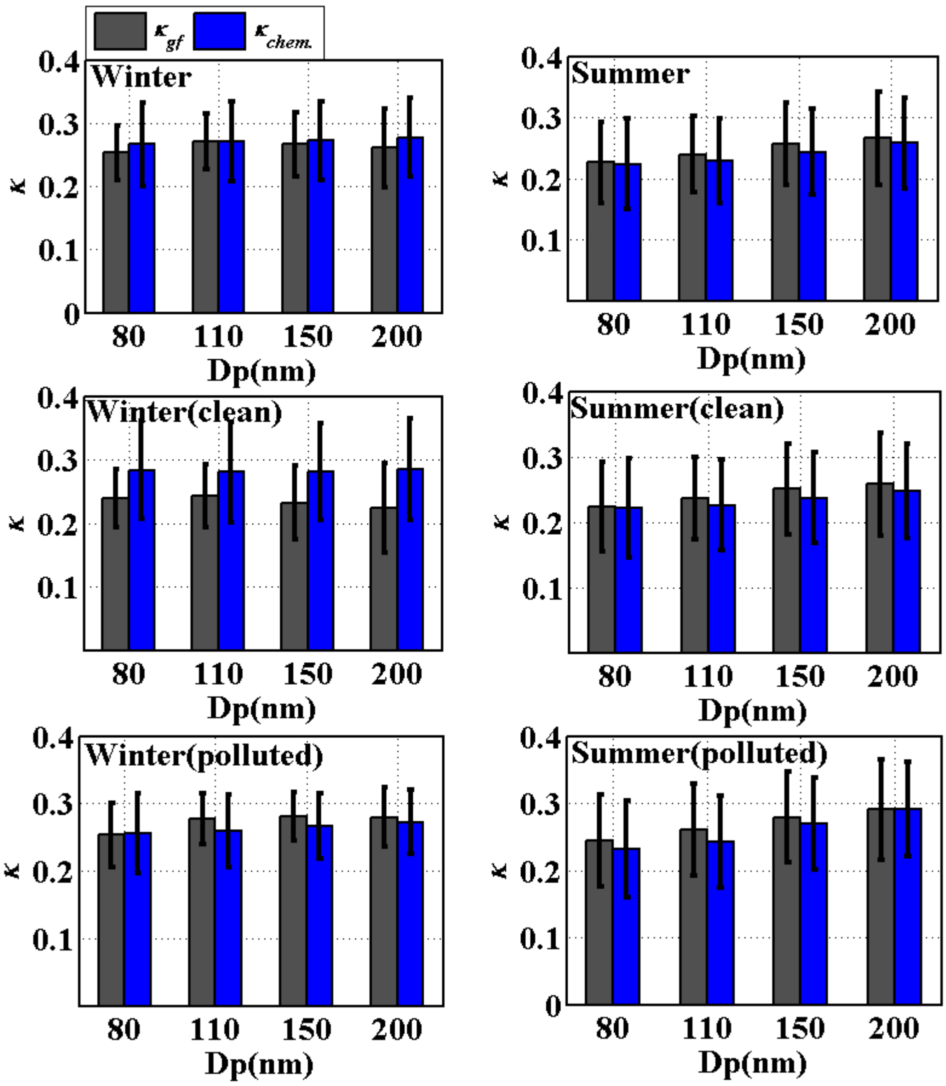


Figure S7. Mean κ_{chem} using size-resolved chemical composition data and κ_{gf} in winter and summer period respectively.

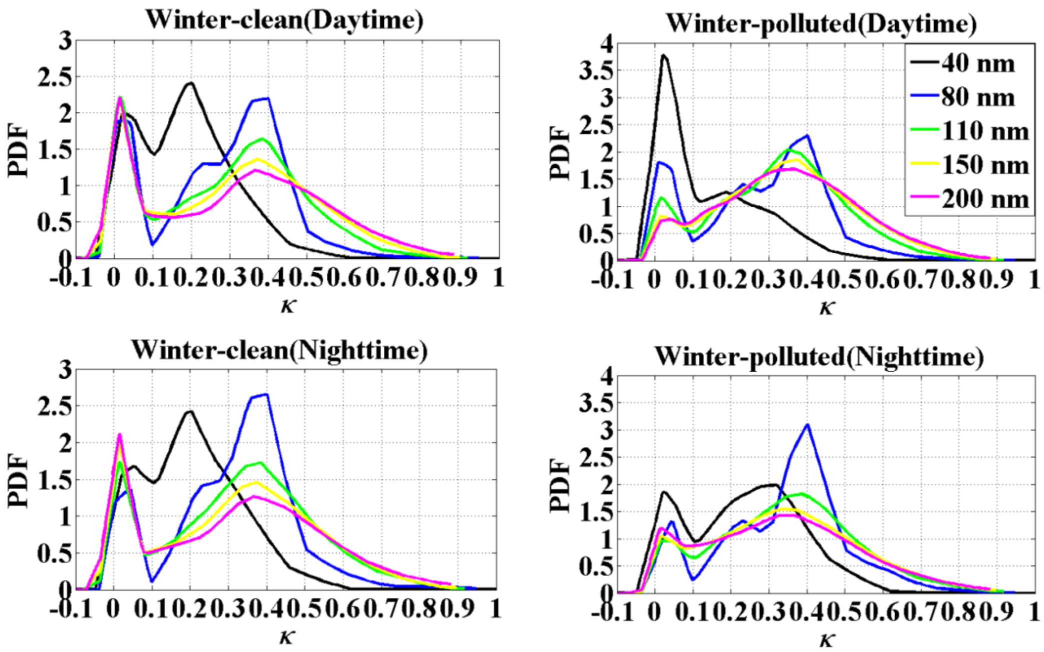


Figure S8. Mean probability density functions of hygroscopicity parameter derived from hygroscopic growth factor for 40, 80, 110, 150, 200 nm during daytime（14：00-19：00 LT）and nighttime (00:00-06:00 LT) under clean and polluted conditions in winter period.

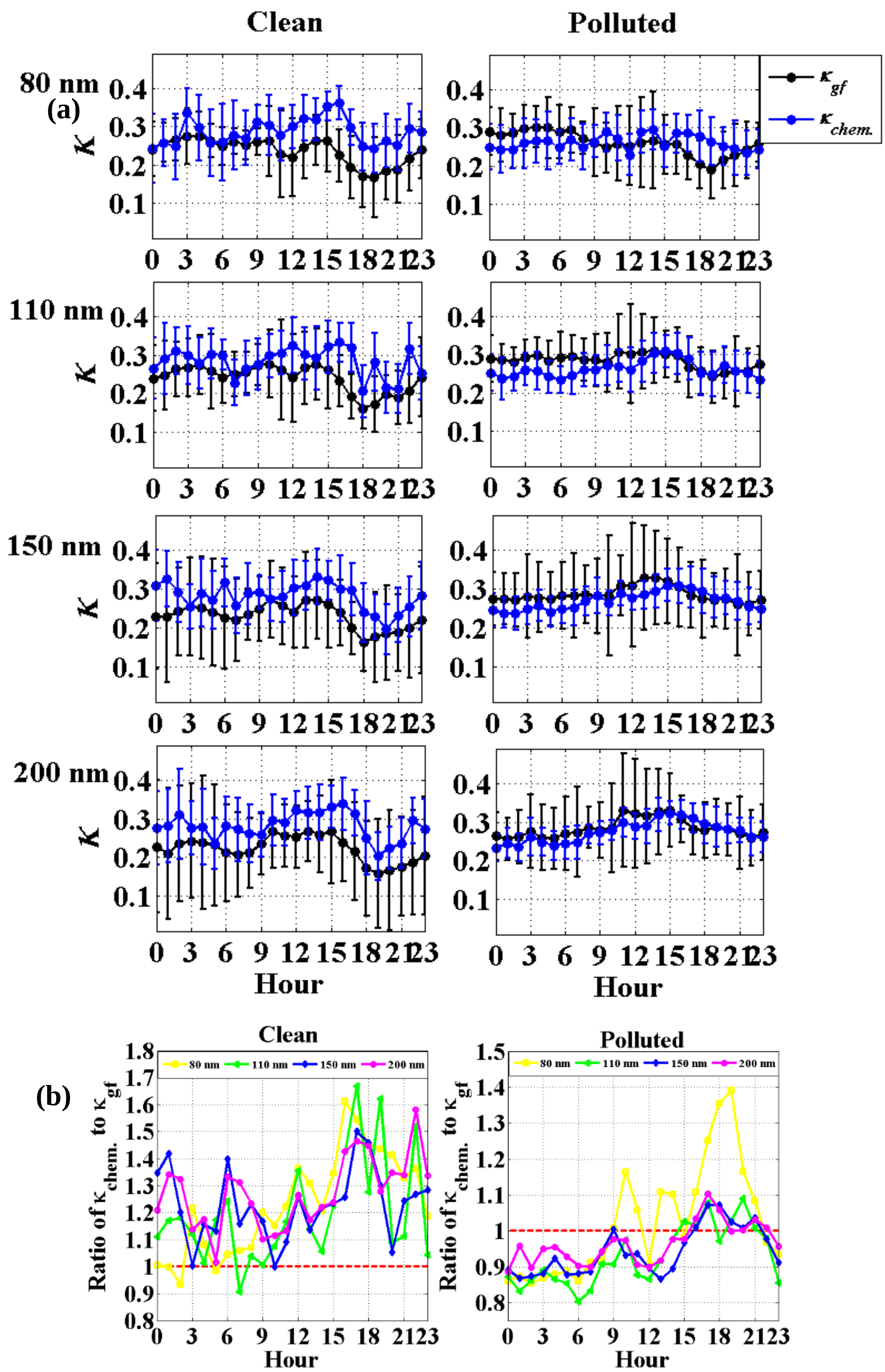


Figure S9. Diurnal variations in (a) κ_{chem} using size-resolved chemical composition data and κ_{gf} in winter period; and (b) ratio of κ_{chem} to κ_{gf} under clean and polluted conditions in winter period.

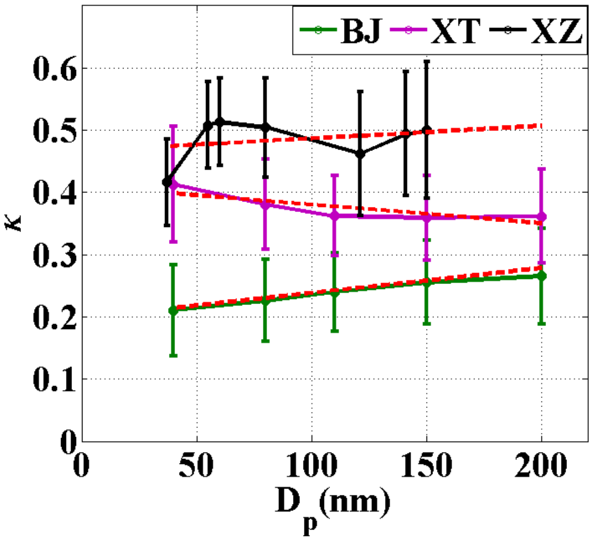


Figure S10. The dependence of κ on D_p in summer period at BJ, XT, XZ, respectively. The κ at BJ and XT is retrieved from growth factor measured by HTDMA. The κ at XZ is retrieved from critical supersaturation measured by CCNc.