

Supplementary material for:

Formation of secondary inorganic aerosol in a frigid urban atmosphere

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This file contains 6 pages with 5 figures.

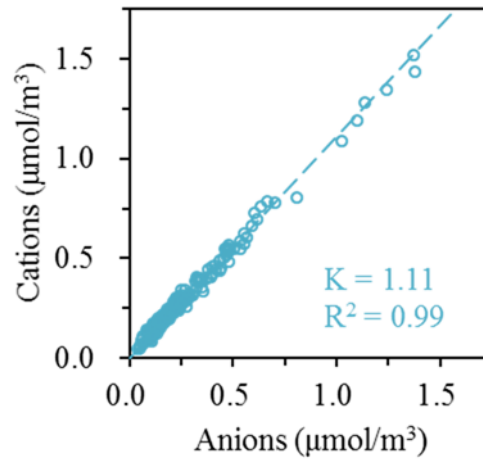


Figure S1. Comparison of cations and anions during the 2018–2019 heating season in Harbin. The dashed line indicates linear regression result with K as slope (intercept was set as zero).

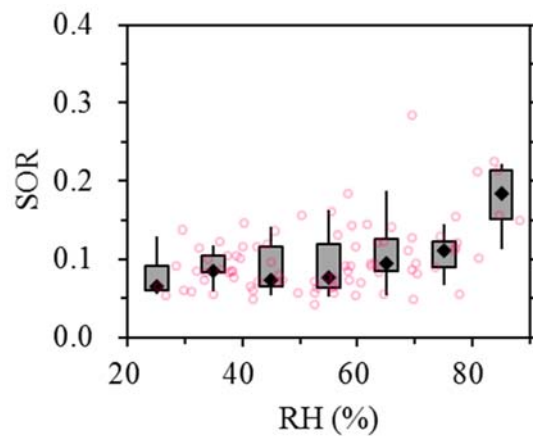


Figure S2. RH-dependent variations of SOR during fall and spring. Lower and upper box bounds indicate the 25th and 75th percentiles, the whiskers below and above the box indicate the 5th and 95th percentiles, and the diamond within the box marks the median.

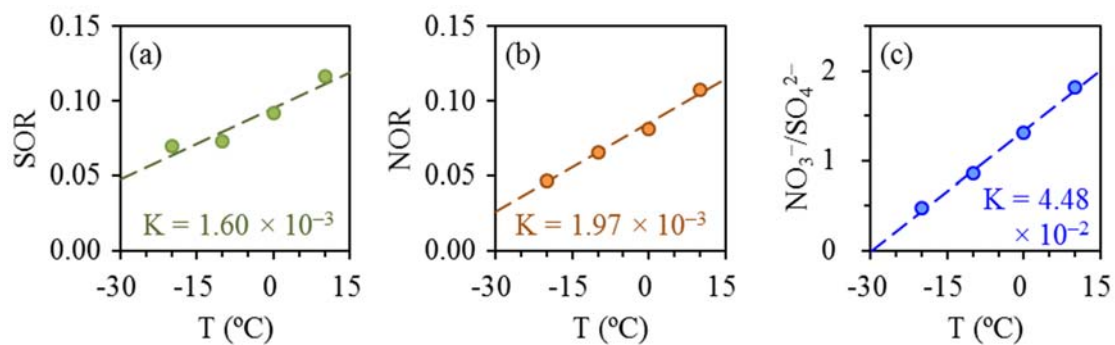


Figure S3. Dependences of (a) SOR, (b) NOR and (c) nitrate-to-sulfate ratio on temperature. As shown in Figure 2 in the main manuscript, the samples were divided into four bins with a temperature interval of -10 °C. Here the median ratios (i.e., SOR, NOR and $\text{NO}_3^-/\text{SO}_4^{2-}$) are plotted against the center of each temperature bin to illustrate the effects of temperature on the formation of sulfate and nitrate. The dashed lines indicate linear regression results with K as slope.

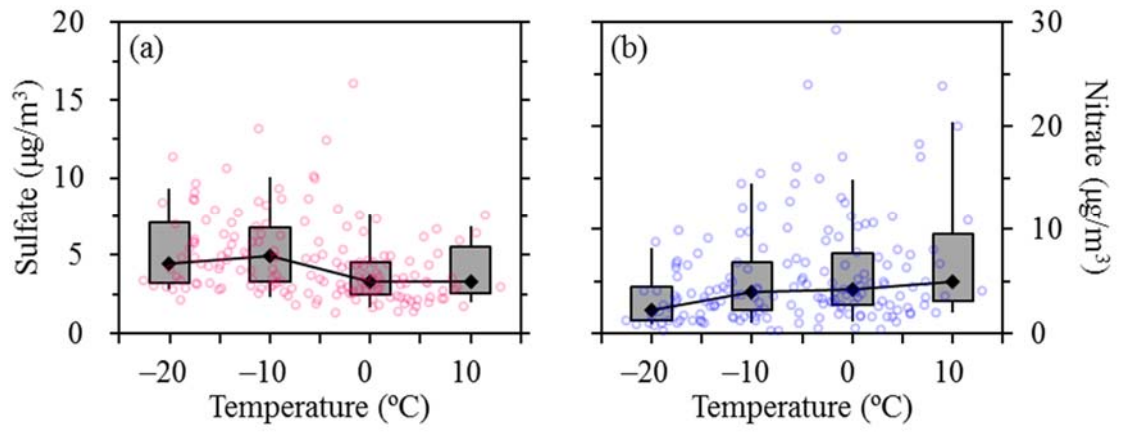


Figure S4. Temperature-dependent variations of (a) sulfate and (b) nitrate.

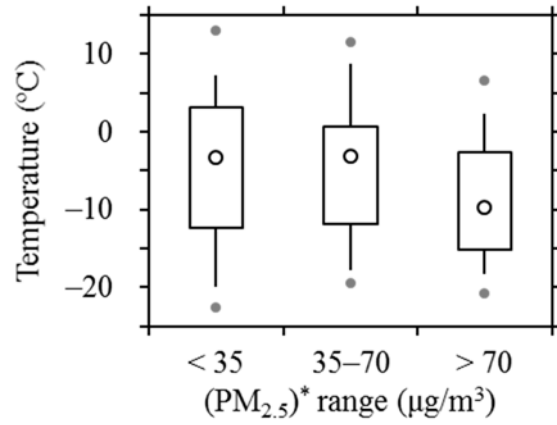


Figure S5. Comparison of temperatures across different (PM_{2.5})* ranges. The solid circles above and below the box indicate the maximum and minimum, respectively.