

Supplementary

Table S1. Ion and conductivity balance check

	R1*	R2**
Dalian	2.4%	4.3%
Dandong	1.5%	0.5%

* $R1 = [(C-A)/(C+A)] * 100\%$, C and A represent total cations and anions. Acceptable range are $\pm 8\%$ for samples having total ions $> 100 \mu\text{eq/L}$

** $R1 = [(C-M)/(C+M)] * 100\%$, C and M represent the calculated and measured conductivity. Acceptable range are $\pm 9\%$ for samples having measured conductivity $> 30 \mu\text{S}\cdot\text{cm}^{-1}$ (Technical Manual for Wet Deposition Monitoring in East Asia -2010)

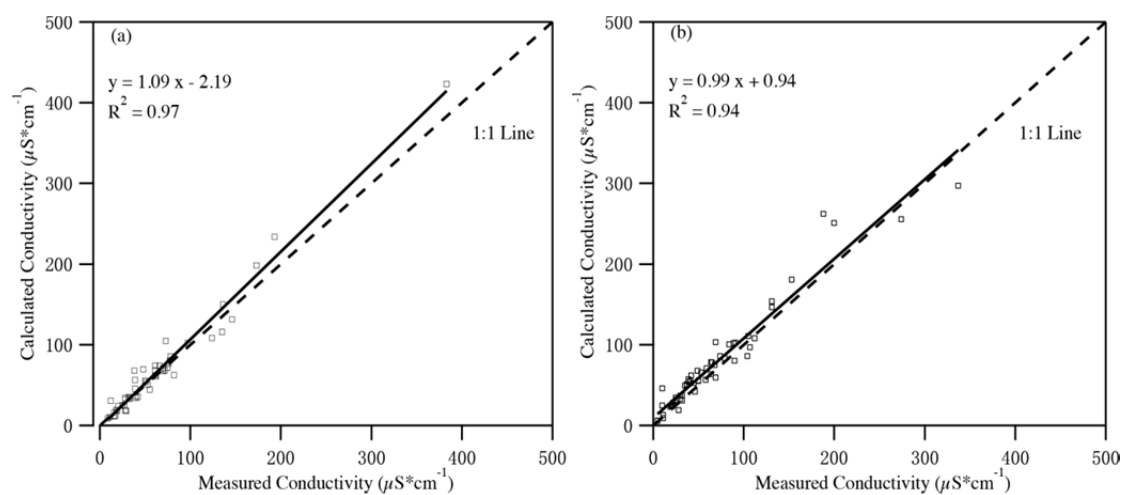


Fig. S1. The Calculated and Measured Conductivities in Dalian (a) and Dandong(b)

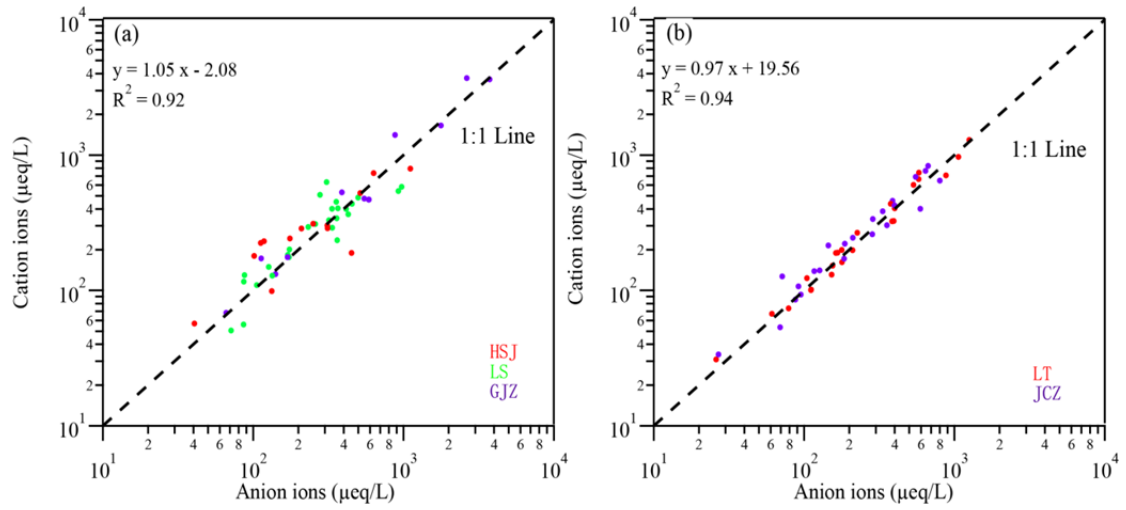


Fig. S2. The ionic balance check in Dalian (a) with red, green and purple circles standing for HSJ, LS and GJZ sites, and in Dandong (b) with red and purple circles standing for LT and JCZ sites.

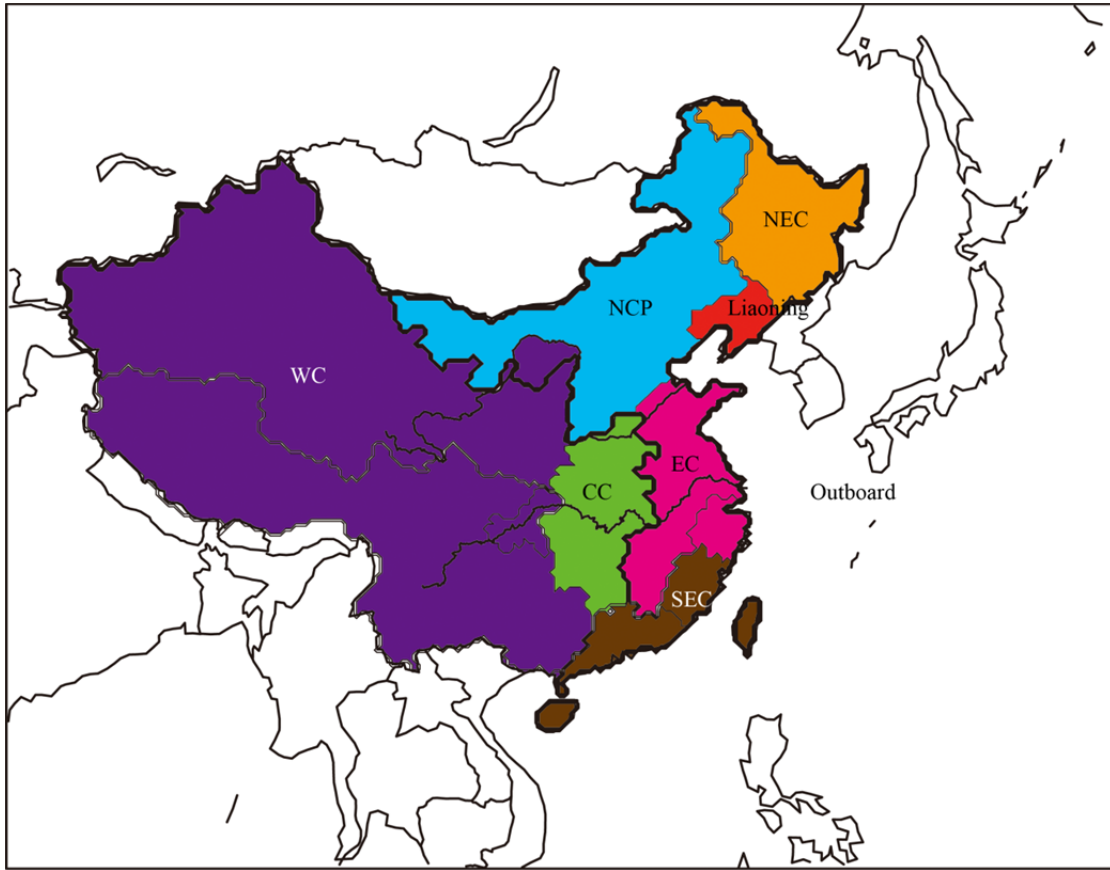


Fig. S3. NAQPMS simulated domain and the areas divided by ArcGIS.

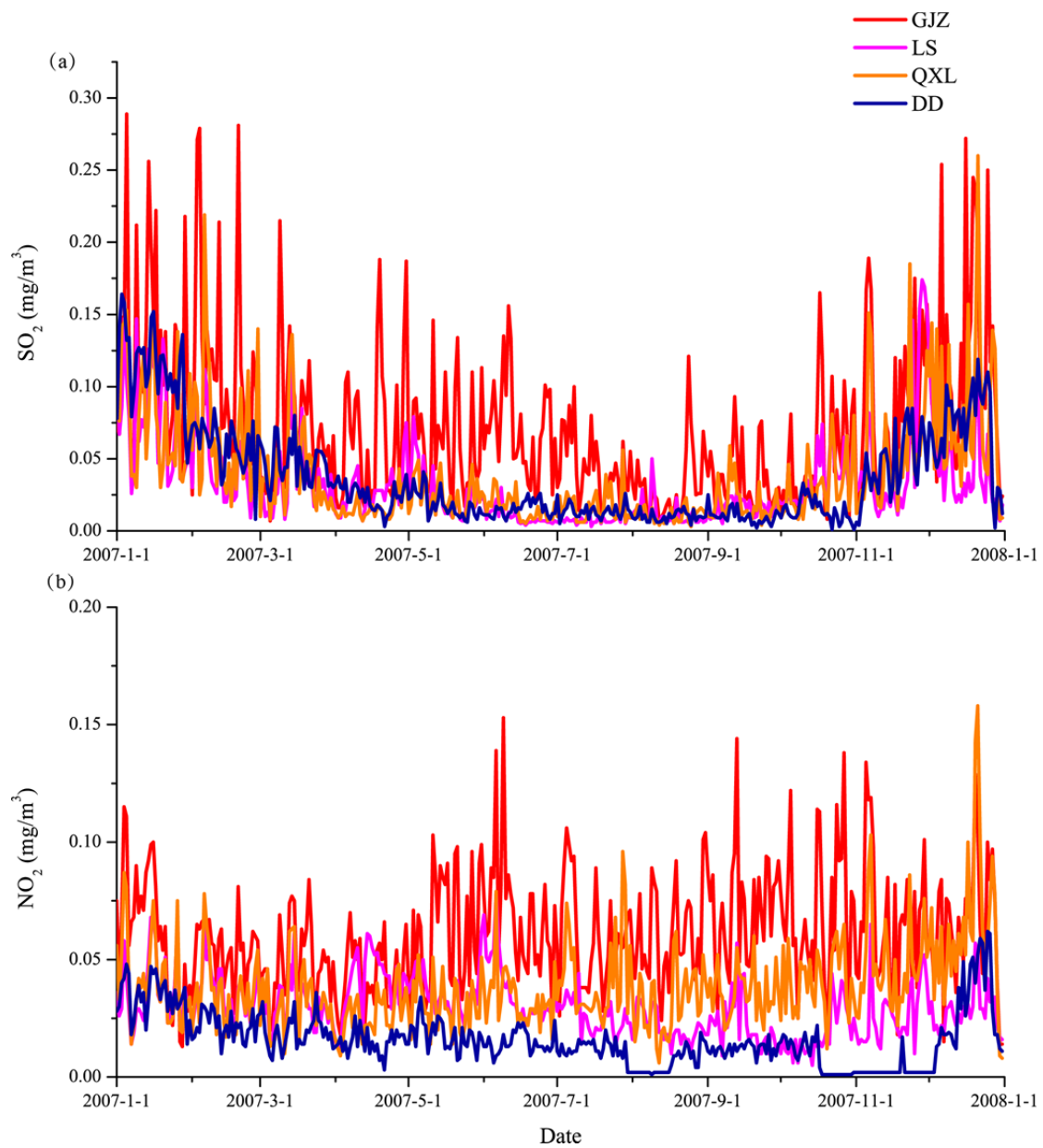


Fig. S4. Time series of daily averaged SO₂ and NO₂ concentration in Dalian (a) and Dandong (b) during 2007 with red, yellow and pink solid line for GJZ, LS and QXL which is close to HSJ in (a) and blue solid line for Dandong in (b).