

## *Supplementary Information*

### **Fine particle chemistry under a special dust transport event: impacts from unusually enhanced ozone and air mass backflows over the ocean**

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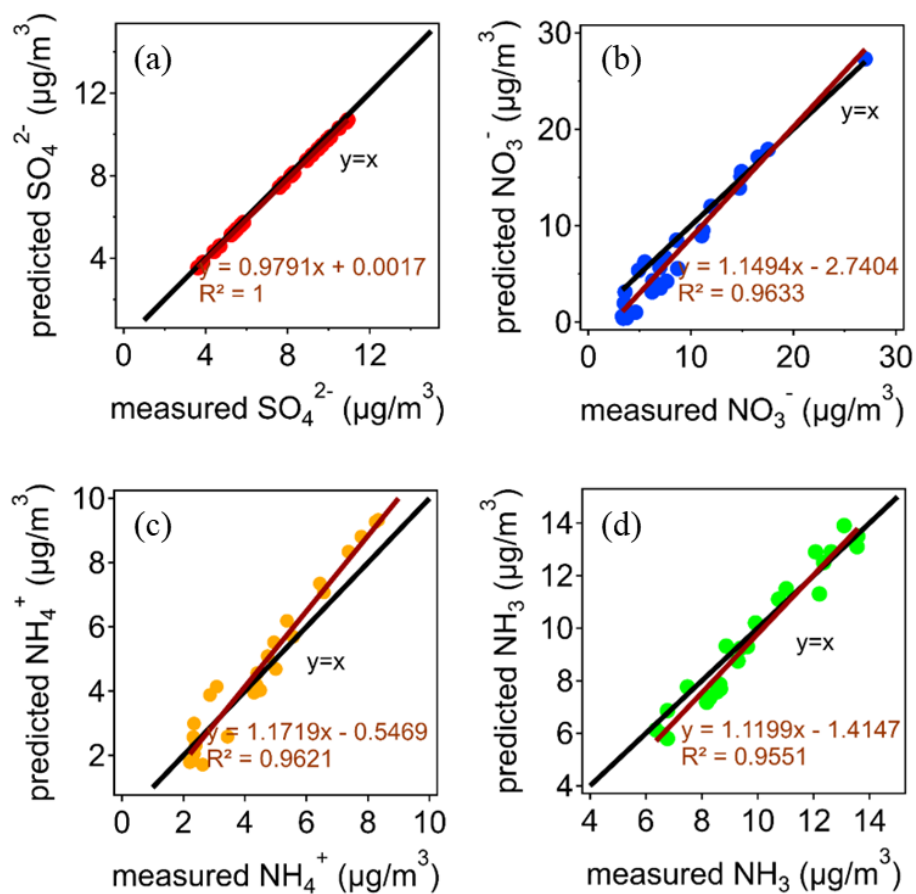


Figure S1. Correlations between the ISORROPIA - II predicted and measured species of (a)  $\text{SO}_4^{2-}$ , (b)  $\text{NO}_3^-$ , (c)  $\text{NH}_4^+$ , and (d)  $\text{NH}_3$  for the  $\text{SO}_4^{2-}$ - $\text{NO}_3^-$ - $\text{NH}_4^+$ - $\text{Cl}^-$ - $\text{NH}_3$ - $\text{HCl}$ - $\text{HNO}_3$  system during P3

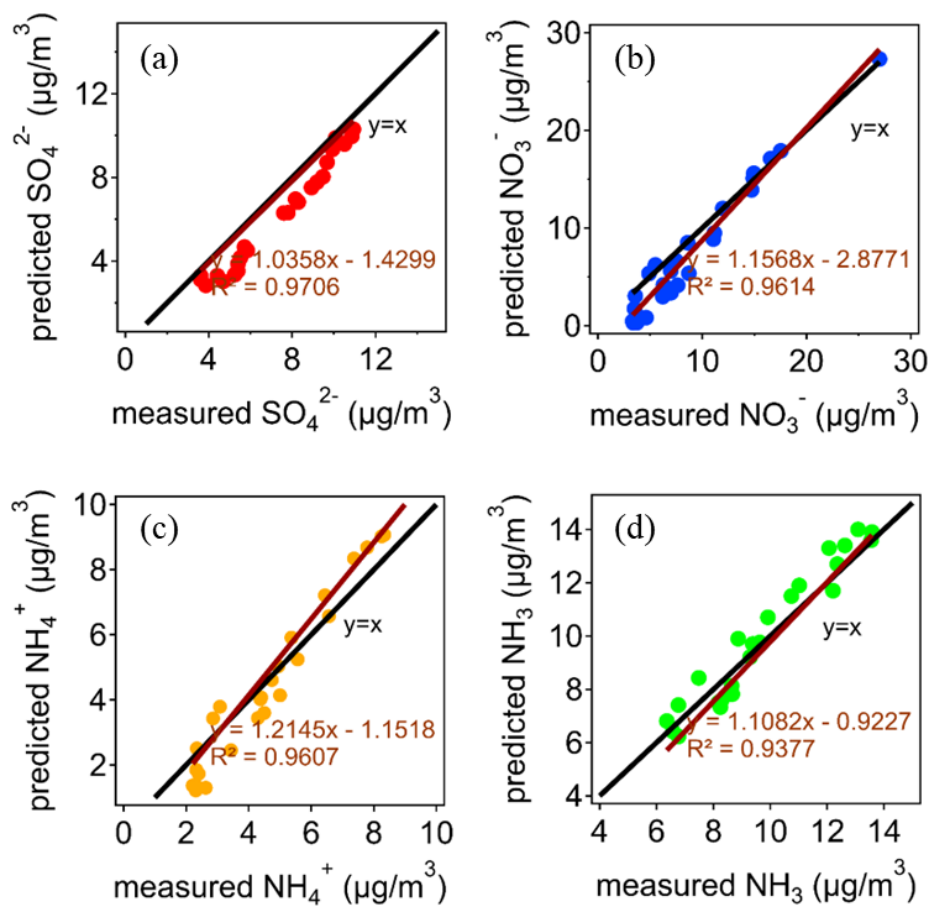


Figure S2. Correlations between the ISORROPIA-II predicted and measured species of (a)  $\text{SO}_4^{2-}$ , (b)  $\text{NO}_3^-$ , (c)  $\text{NH}_4^+$ , and (d)  $\text{NH}_3$  for the  $\text{SO}_4^{2-}$ - $\text{NO}_3^-$ - $\text{NH}_4^+$ - $\text{Cl}^-$ - $\text{Ca}^{2+}$ - $\text{NH}_3$ - $\text{HCl}$ - $\text{HNO}_3$  system during P3

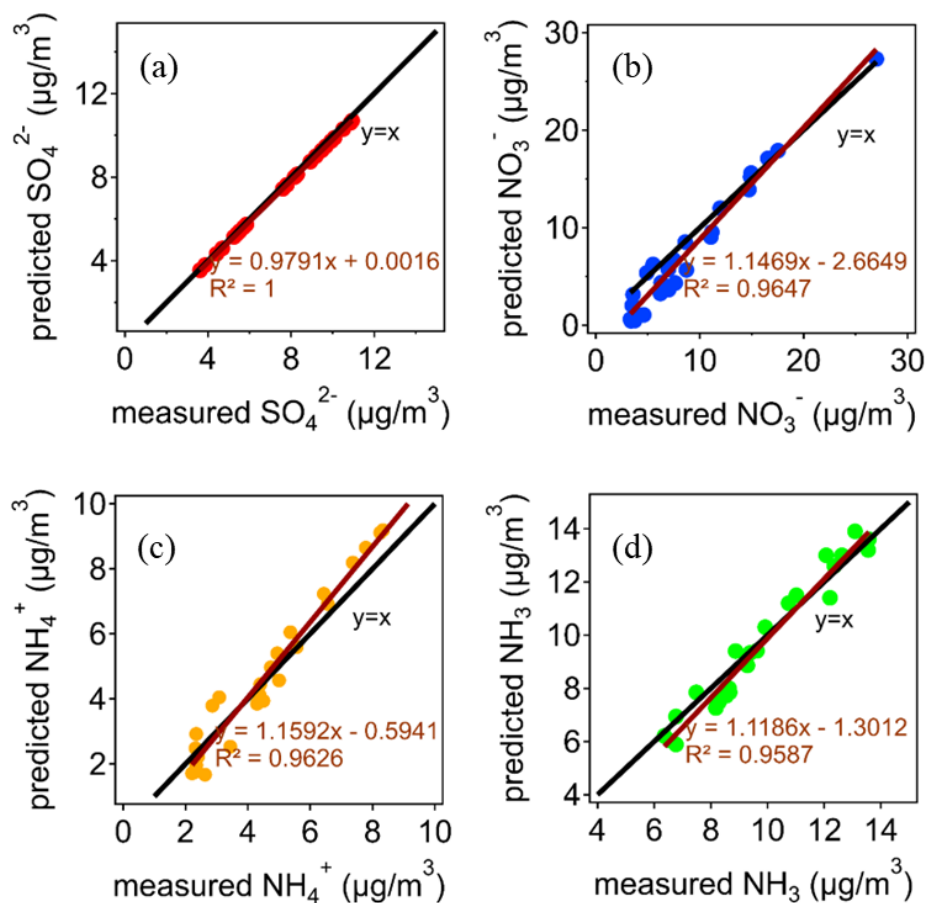


Figure S3. Correlations between the ISORROPIA-II predicted and measured species of (a)  $\text{SO}_4^{2-}$ , (b)  $\text{NO}_3^-$ , (c)  $\text{NH}_4^+$ , and (d)  $\text{NH}_3$  for the  $\text{SO}_4^{2-}$ - $\text{NO}_3^-$ - $\text{NH}_4^+$ - $\text{Cl}^-$ - $\text{Na}^+$ - $\text{NH}_3$ - $\text{HCl}$ - $\text{HNO}_3$  system during P3

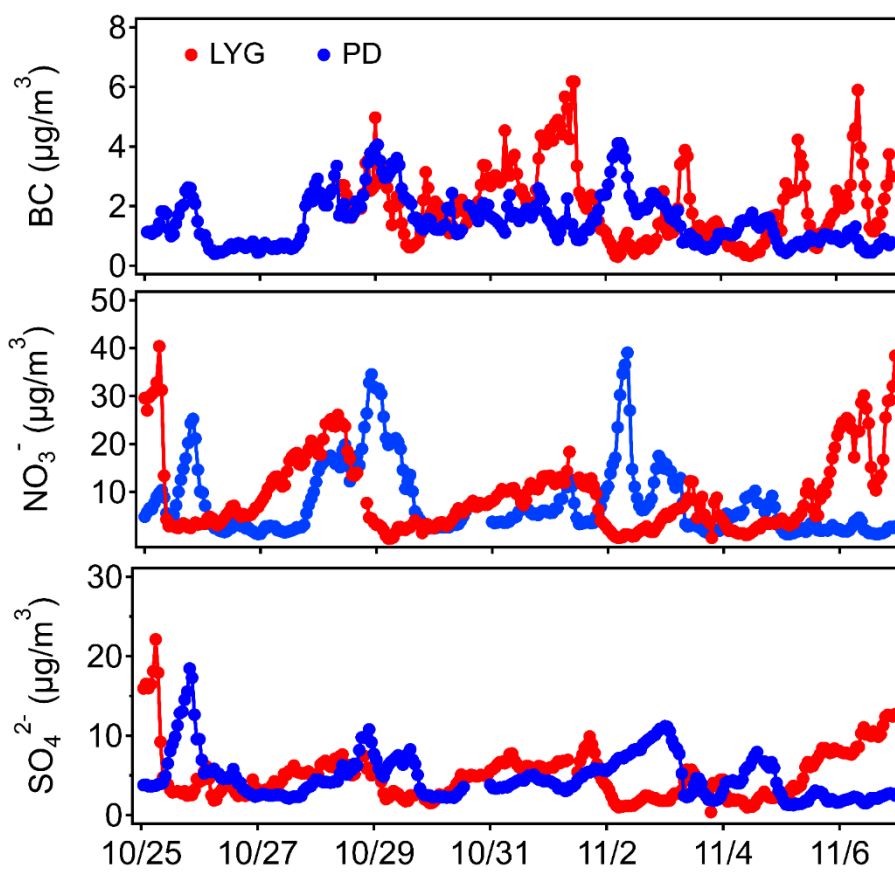


Figure S4. Time-series of BC, nitrate, and sulfate measured at LYG and PD during the study period.