Supplementary Information:

Fig. S1: Relationship of the sum of nitrate and ammonium nitrogen measured by ion chromatography to the total aerosol nitrogen measured by EA.

\[
y = 0.85x - 0.12 \\
\text{r} = 0.99
\]
Fig. S2: Comparison of TC from EA-IRMS and TC from the EC/OC analyzer measured in parallel to filter sampling (both PM1 aerosols).
Fig. S3: Relationships of $\delta^{15}$N in TN vs. the natural logarithm of NO$_3^-$ concentrations. The larger circles indicate higher NH$_4^+$ concentrations. The color scale reflects the time of sample collection.
Fig. S4: Wind directions in different seasons during the measurement campaign.
Fig. S5: Relationships of $\delta^{15}$N in TN vs. SO$_4^{2-}$ concentrations. The larger circles indicate higher NH$_4^+$ concentrations. The color scale reflects the time of sample collection.