Supplementary Information:
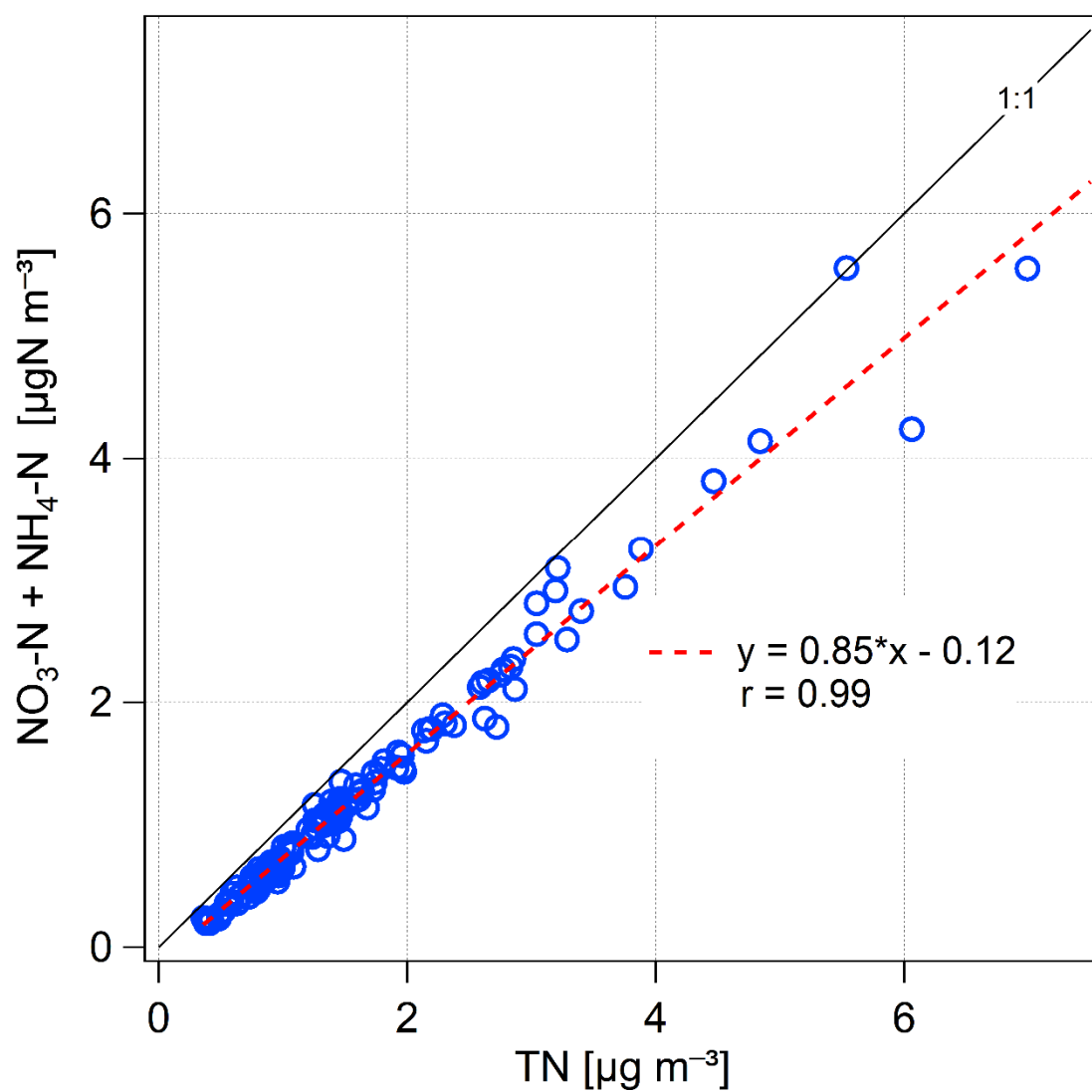
Fig. S1: Relationship of the sum of nitrate and ammonium nitrogen measured by ion chromatography to the total aerosol nitrogen measured by EA.
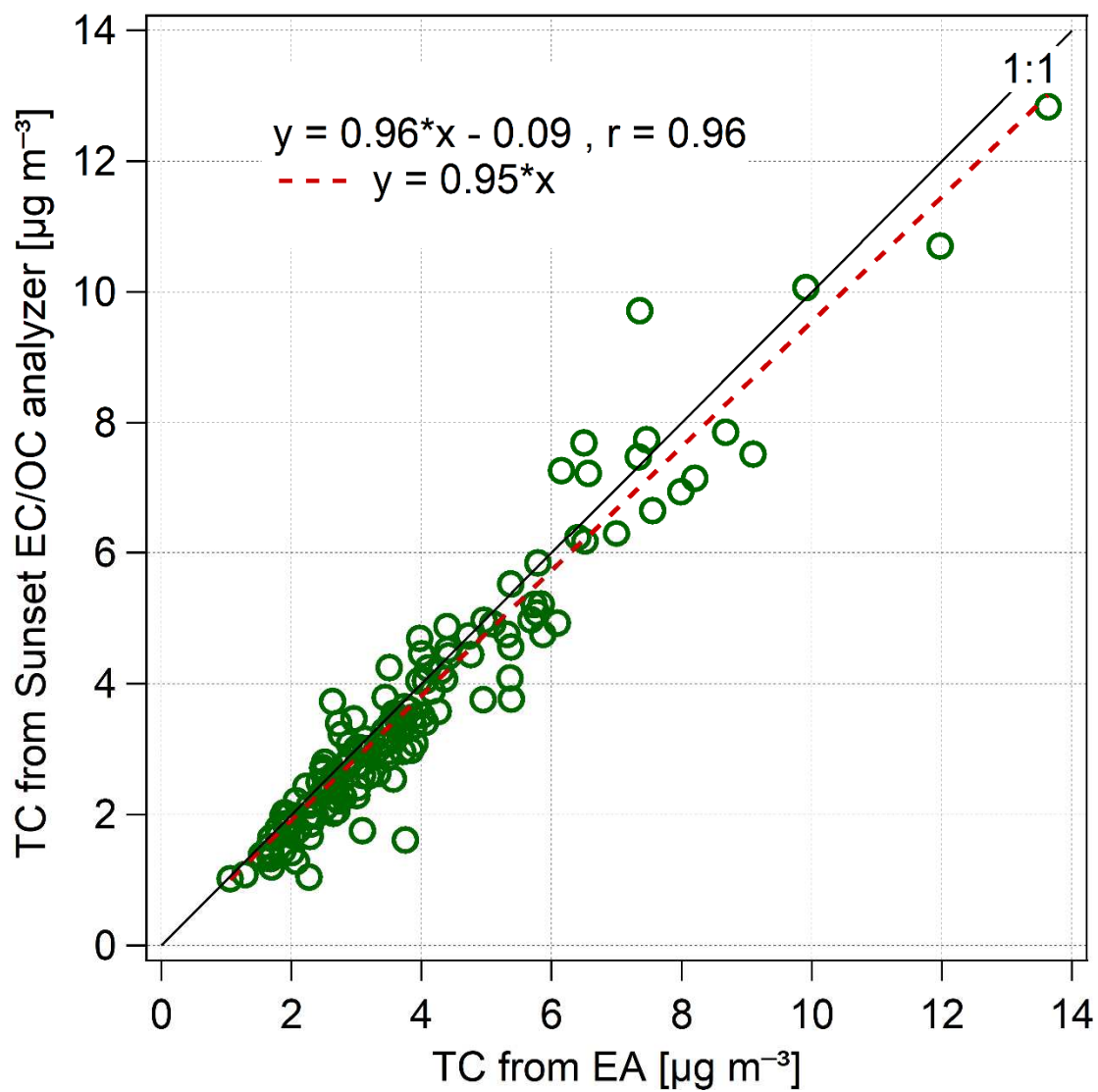
Fig. S2: Comparison of TC from EA-IRMS and TC from the EC/OC analyzer measured in parallel to filter sampling (both PM1 aerosols).
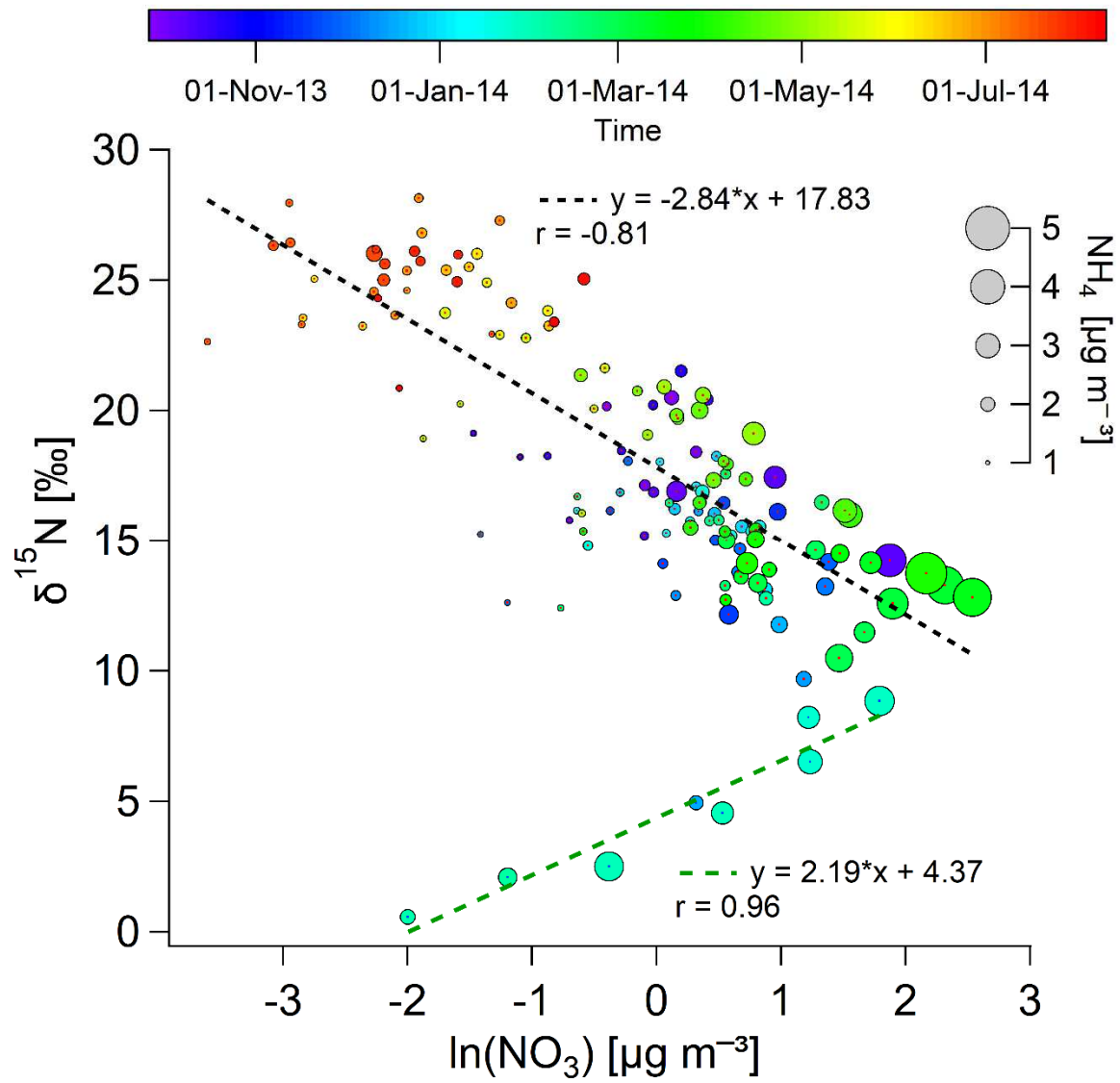
Fig. S3: Relationships of $\delta^{15}N$ in TN vs. the natural logarithm of NO_3^- concentrations. The larger circles indicate higher NH_4^+ concentrations. The color scale reflects the time of sample collection.
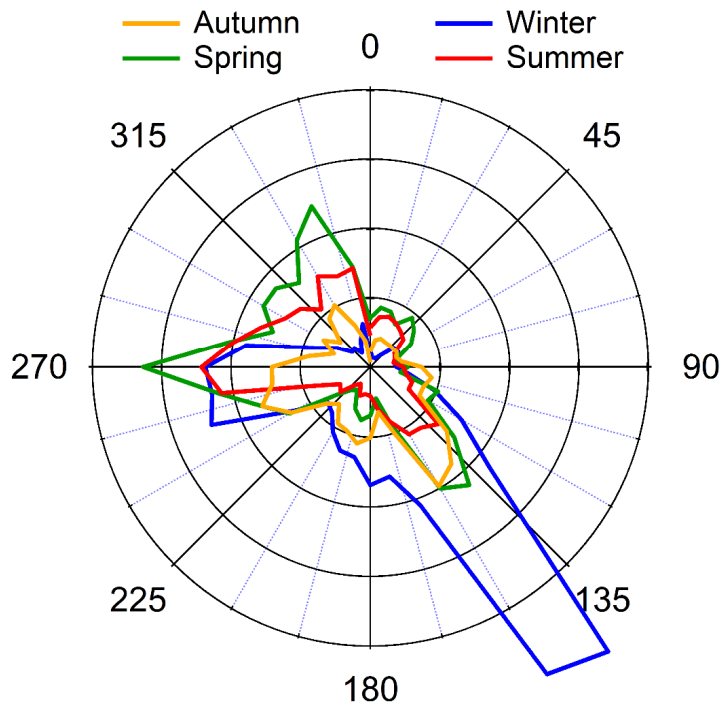
Fig. S4: Wind directions in different seasons during the measurement campaign.
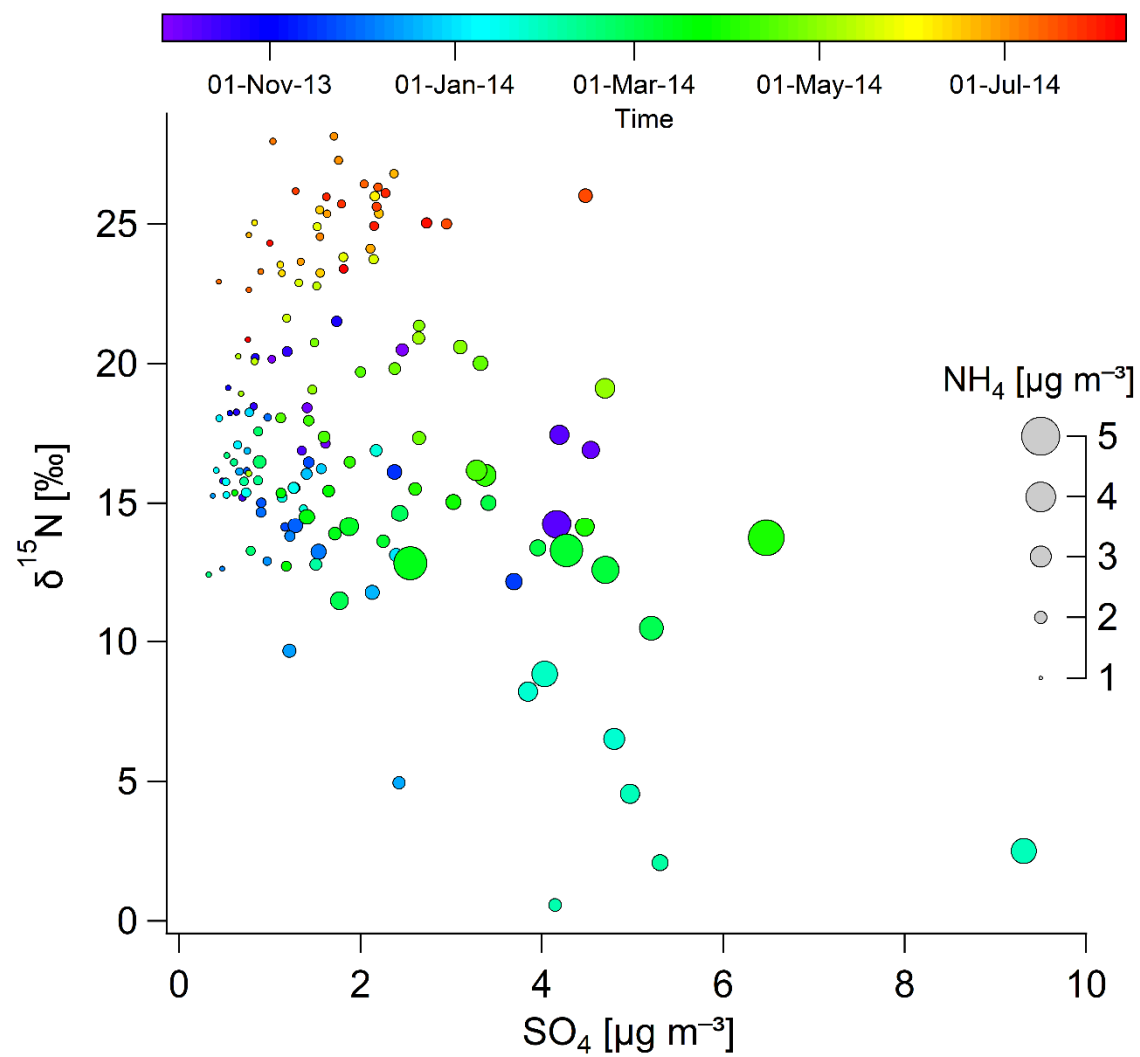
Fig. S5: Relationships of $\delta^{15}N$ in TN vs. SO_4^{2-} concentrations. The larger circles indicate higher NH_4^+ concentrations. The color scale reflects the time of sample collection.