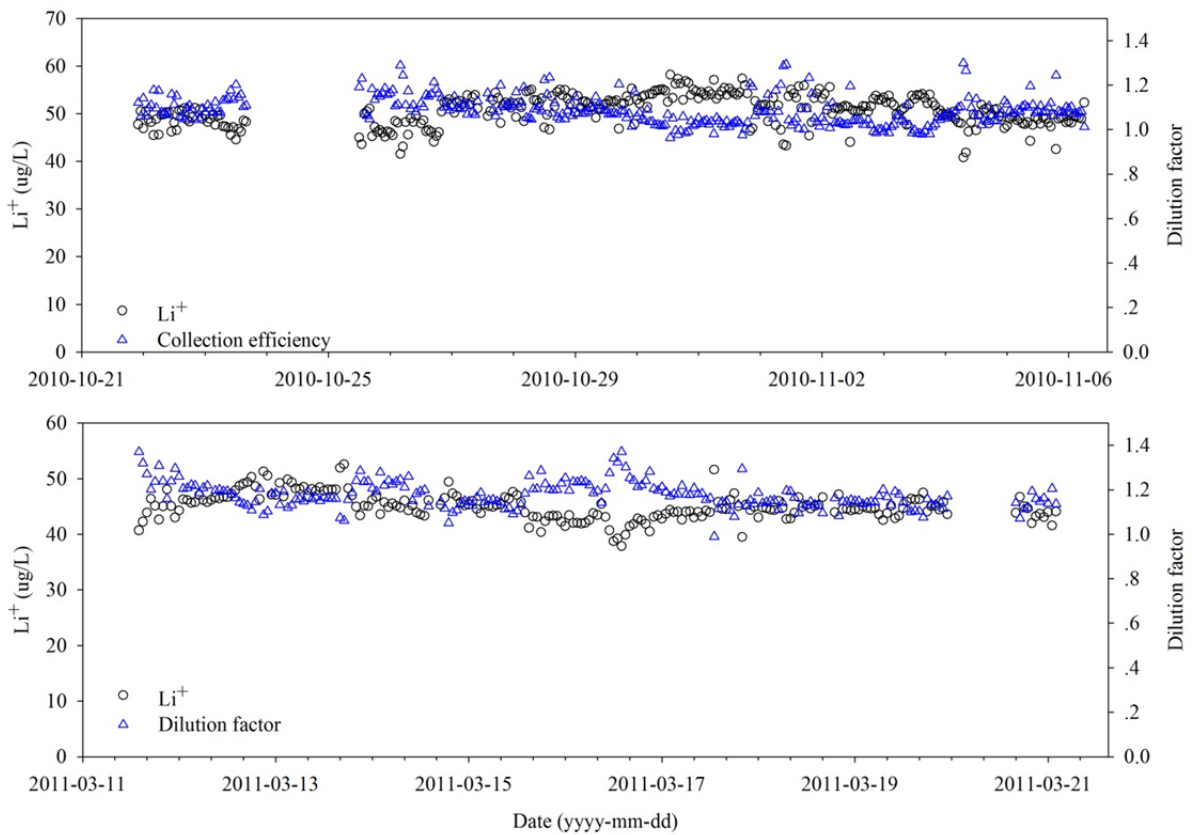
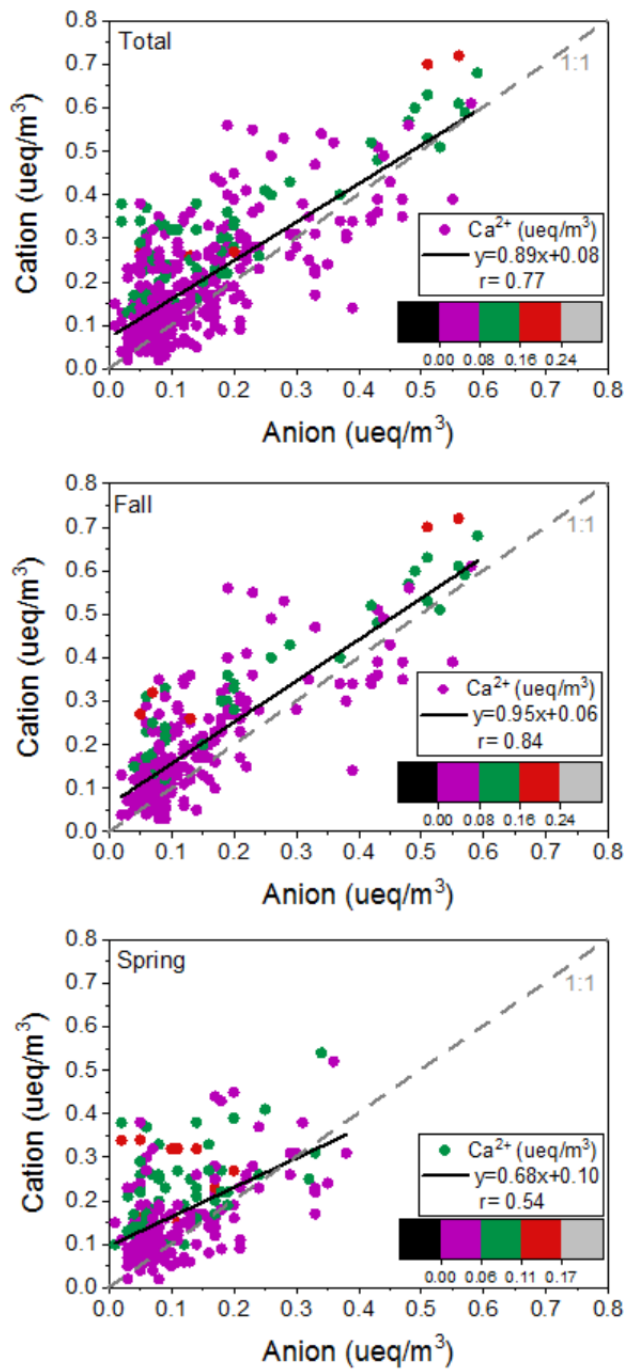


APPENDIX



Appendix 1. Time series variation of internal standard concentrations and dilution factor for PILS system during the two intensive experiments.



Appendix 2. Ionic balances of PM_{1.0} with Ca²⁺ concentration during the total period and each season, where the anion is the sum of Cl⁻, SO₄²⁻, NO₃⁻ and the cation is the sum of Na⁺, NH₄⁺, K⁺, Mg²⁺, Ca²⁺. The cation/anion ratios are higher than one mostly when Ca²⁺ concentrations were

high, characterized a large contribution of soil. This was likely due to carbonate ions which were not accounted in anion balance. When anthropogenic influence is dominant in this study region, particle mass used to be highly elevated with increase in anions including SO_4^{2-} and NO_3^- , causing aerosol acidic. In this study, the cation/anion ratio was low in Beijing and haze pollution plumes.