Supplementary material 3—Seasonal patterns of PM_{10} spatial distribution

Fig. S1 illustrates seasonal patterns in the multi-year median PM_{10} concentrations. One can see that in summer (Fig. S1b), no city had a median PM_{10} concentration greater than 150 μg m^{-3}, which is the threshold for the Chinese National Grade II Ambient Air Quality Standard (CNAAQS-GII) classification of "good"; similarly, there are few cities exceeding this PM_{10} threshold in spring (Fig. S1a) or autumn (Fig. S1c). Moreover, during summer (Fig. S1b), ten of the nineteen cities in the southern zone had median PM_{10} concentrations less than 50 μg m^{-3}; this is criterion for the Chinese National Grade I Ambient Air Quality Standard (CNAAQS-GI) of "clean".

For the cities in the northern and middle zones, the summertime PM_{10} concentrations (Fig. S1b) are generally the lowest, while the higher PM_{10} levels occur during winter and spring (Fig. S1d and S1a). In particular, PM_{10} concentrations for the northern cities increased markedly in winter, in that season seventeen of the thirty-eight cities had median PM_{10} concentrations exceeding 150 μg m^{-3} (the threshold for CNAAQS-GII, Fig. S1d); high wintertime PM_{10} concentrations (>150 μg m^{-3}) occurred in inland cities in northern China except for those located in Shandong Peninsula (G-7), Henan Province (G-8), the remote Heilongjiang and Jilin Provinces (G-4), Xining (XN) and Shizuishan (SZS) cities.

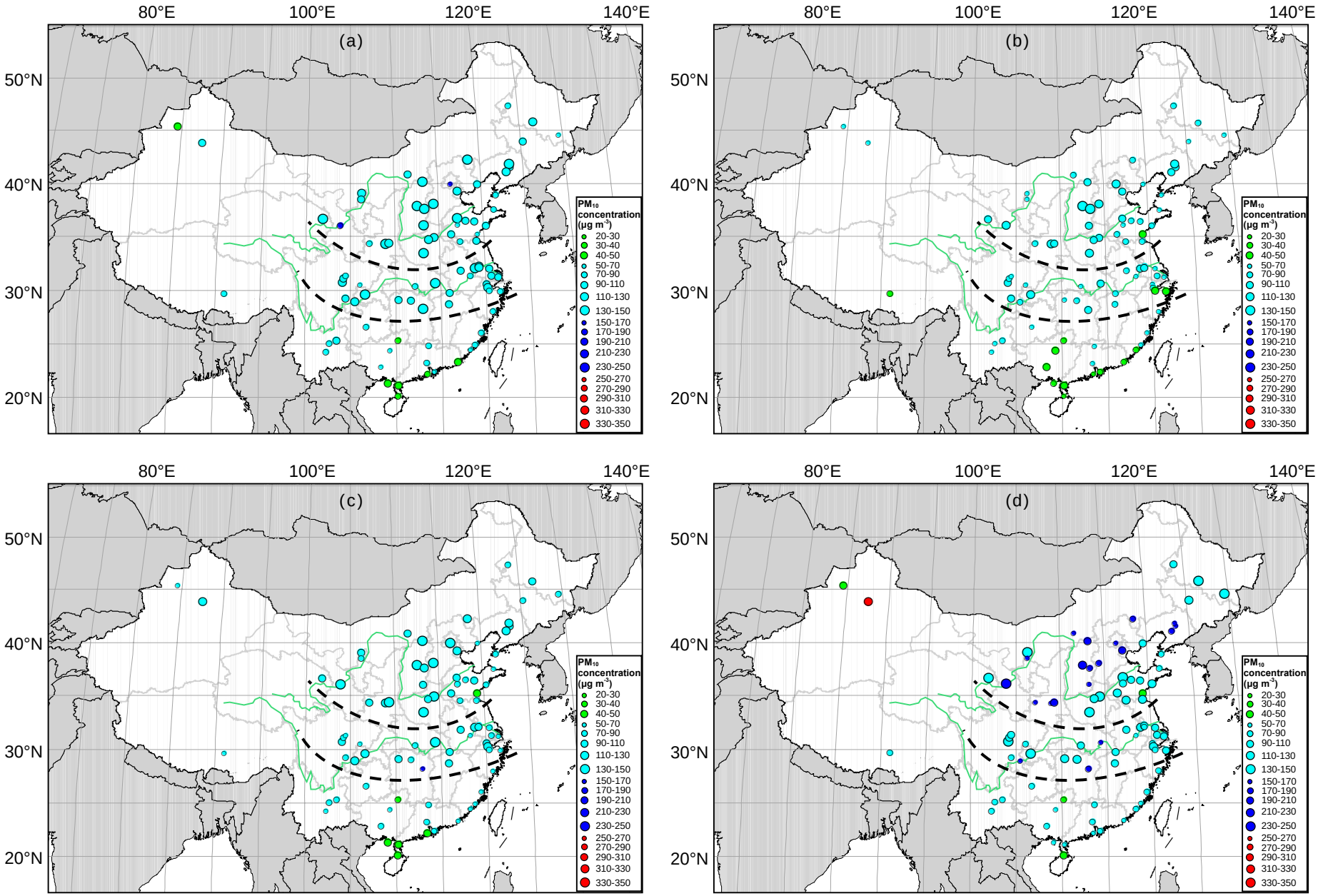

Fig. S1. Spatial distribution of the multi-year median PM_{10} concentrations during (a) spring, (b) summer, (c) autumn and (d) winter for the 86 cities.