Fig. S1. The standard deviation of T2m error1(a, d), error2(b, e) and root–mean–square error of analysis (c, f) in summer and in winter.
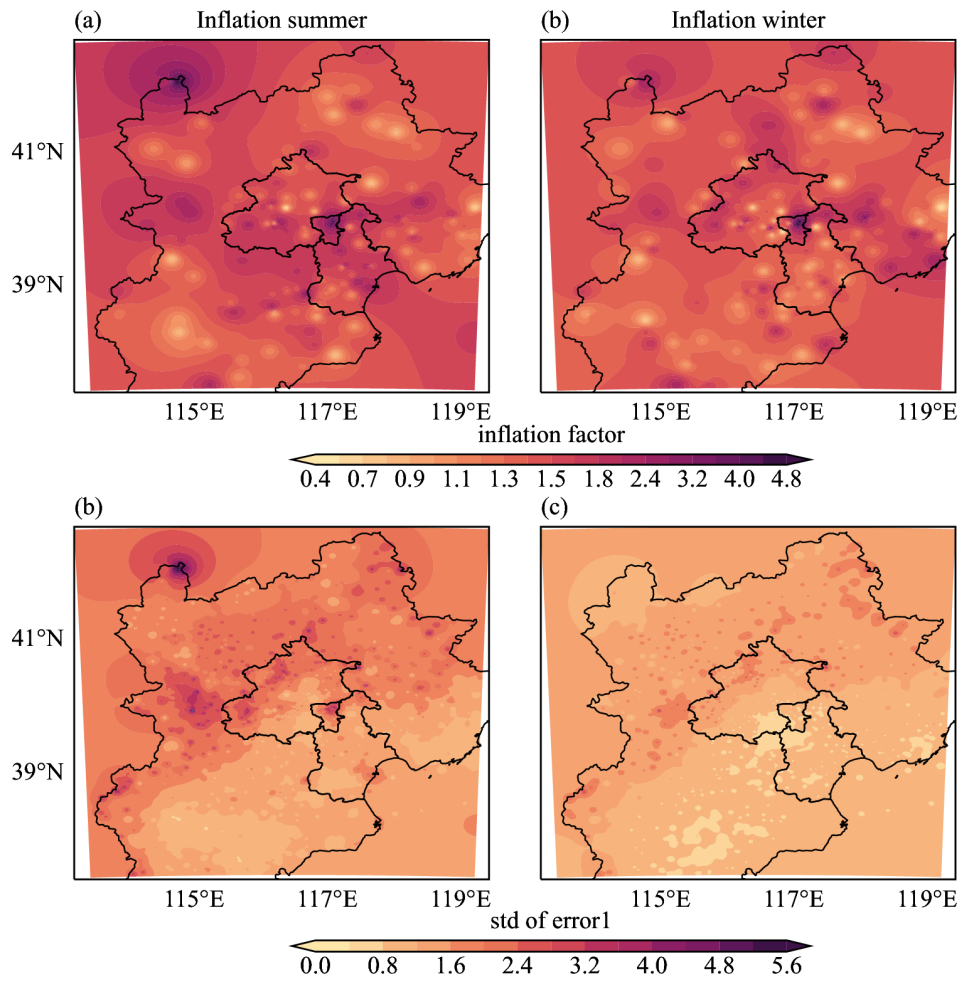
Fig. S2. Inflation factor (a, b) and the rescaled STD of error1(c, d).
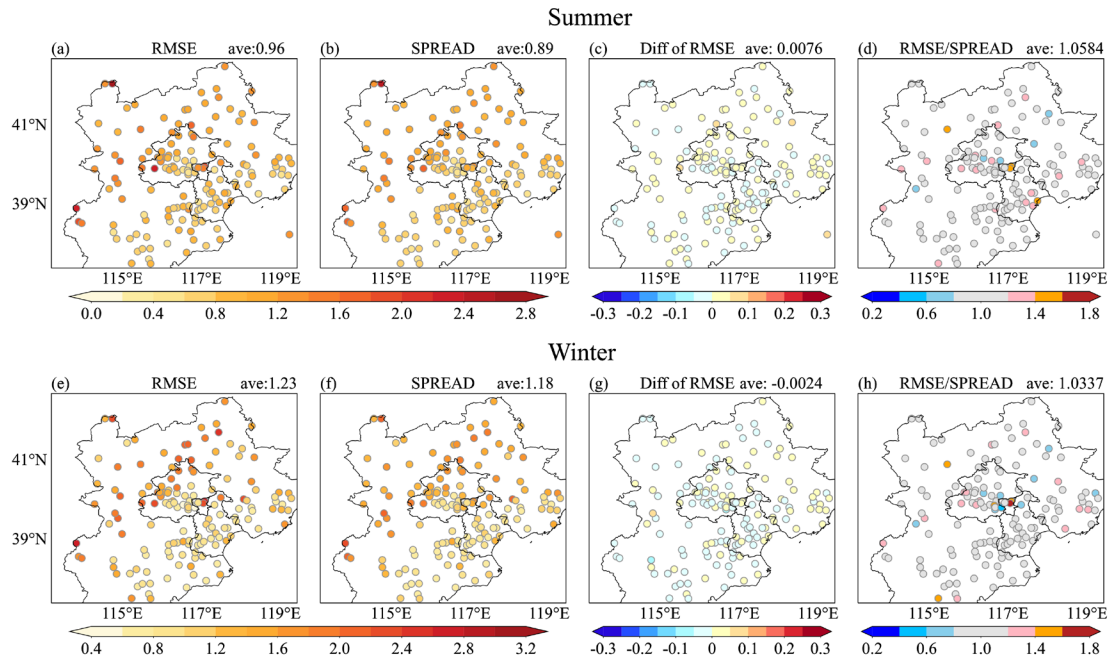
Fig. S3. The RMSE (a and e) and SPREAD (b and f) of temperature ensemble in summer and winter. The difference of RMSE ($RMSE_C − RMSE_E$) are shown in (c) and (g). While (d) and (h) are the ratio of RMSE/SPREAD.
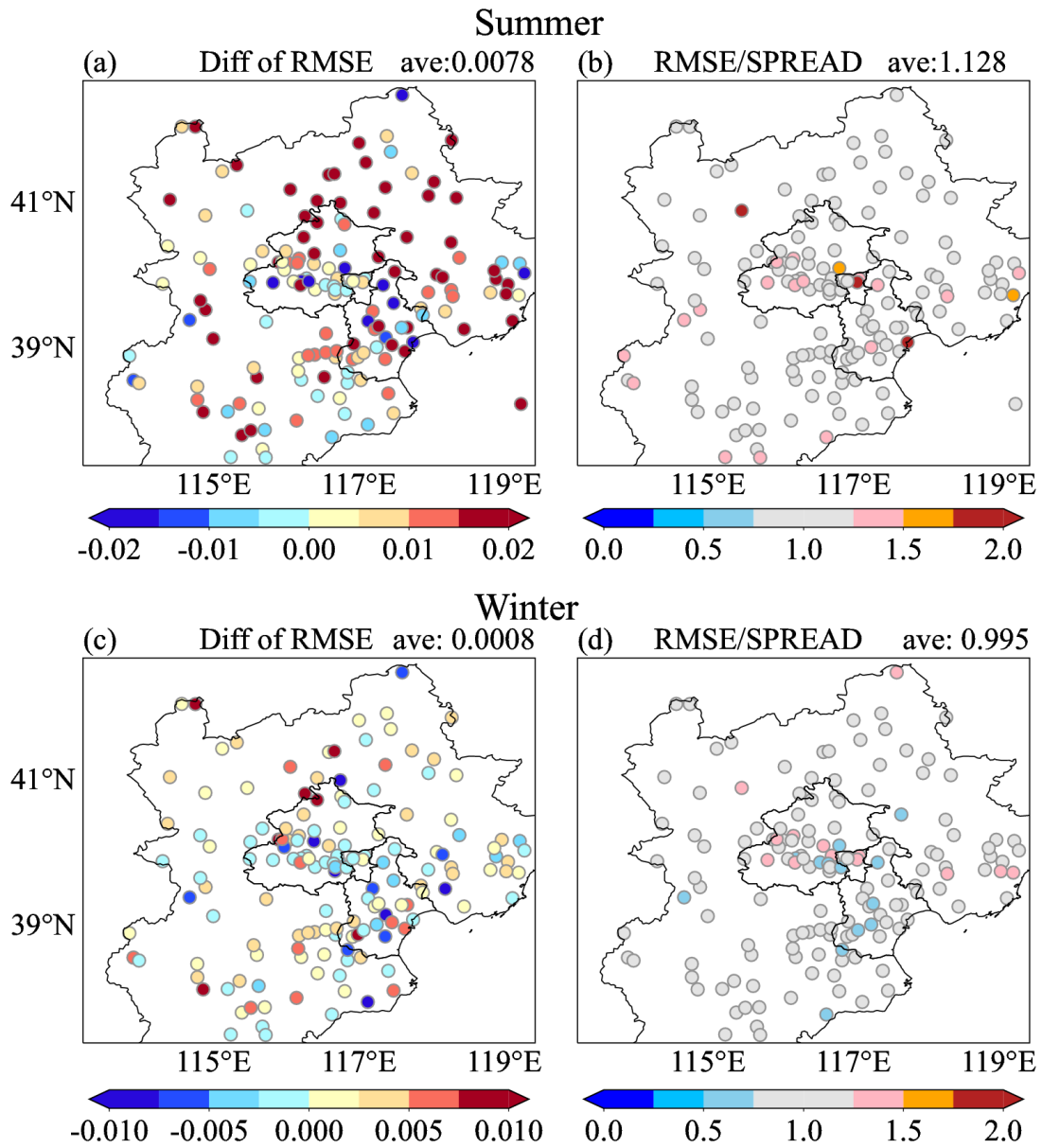
Fig. S4. The difference of RMSE (a, c, the same as Fig5 c, g) and the ratio of RMSE/SPREAD (b, d) for specific humidity.