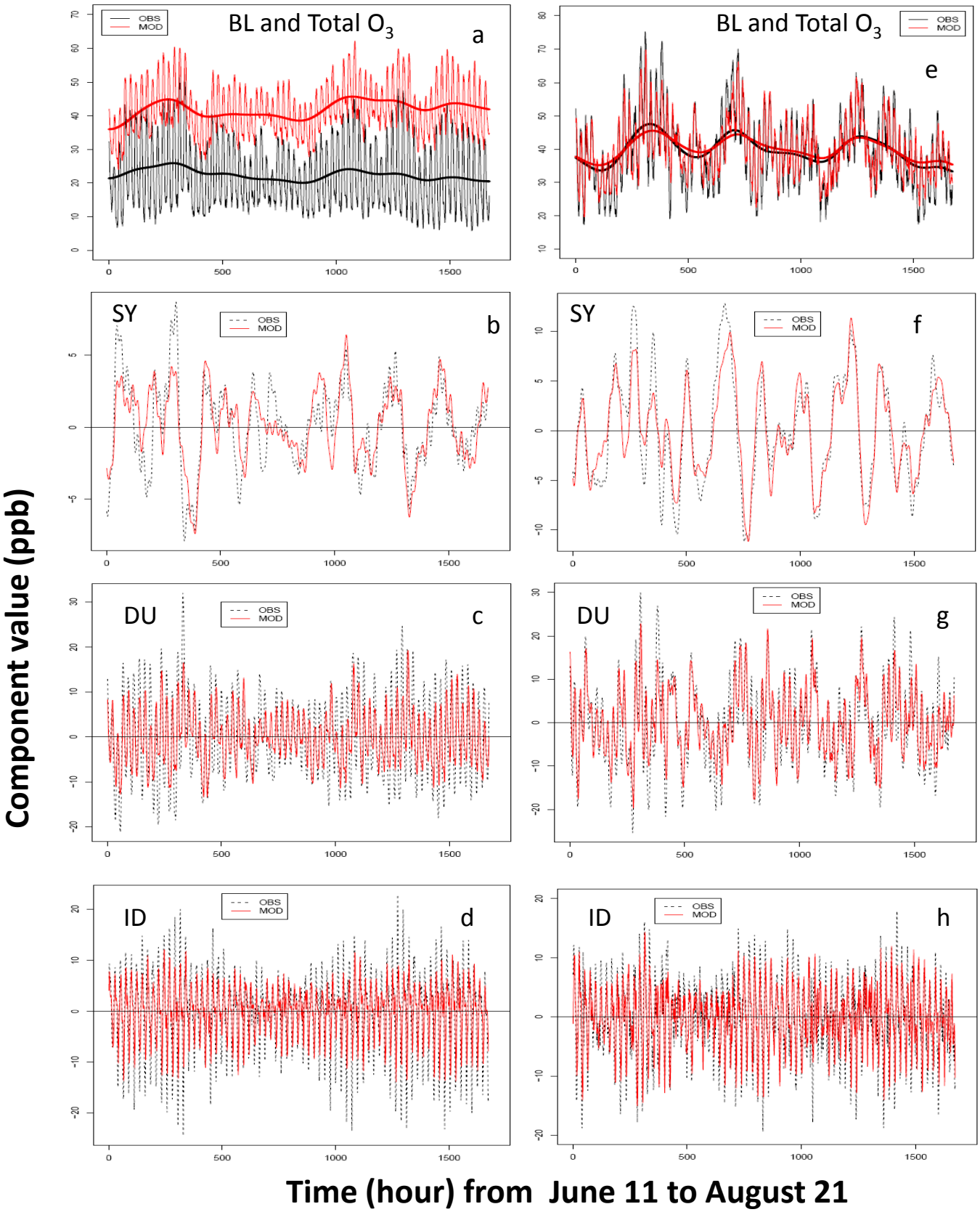

Figure 1. Observed and modeled time series of KZ decomposed components averaged over 12 worst performing sites (a-d) and 12 best performing sites (e-h) for Baseline (BL) with total O_3(a, e), synoptic (SY; b, f), Diurnal (DU; c, g) , and Intraday (ID; d, h) components. The vertical axis is the magnitude of the component (ppb) and the horizontal axis is the time (hour). Note that the length of the time series is shorter than the original length due to KZ filter cutoff.

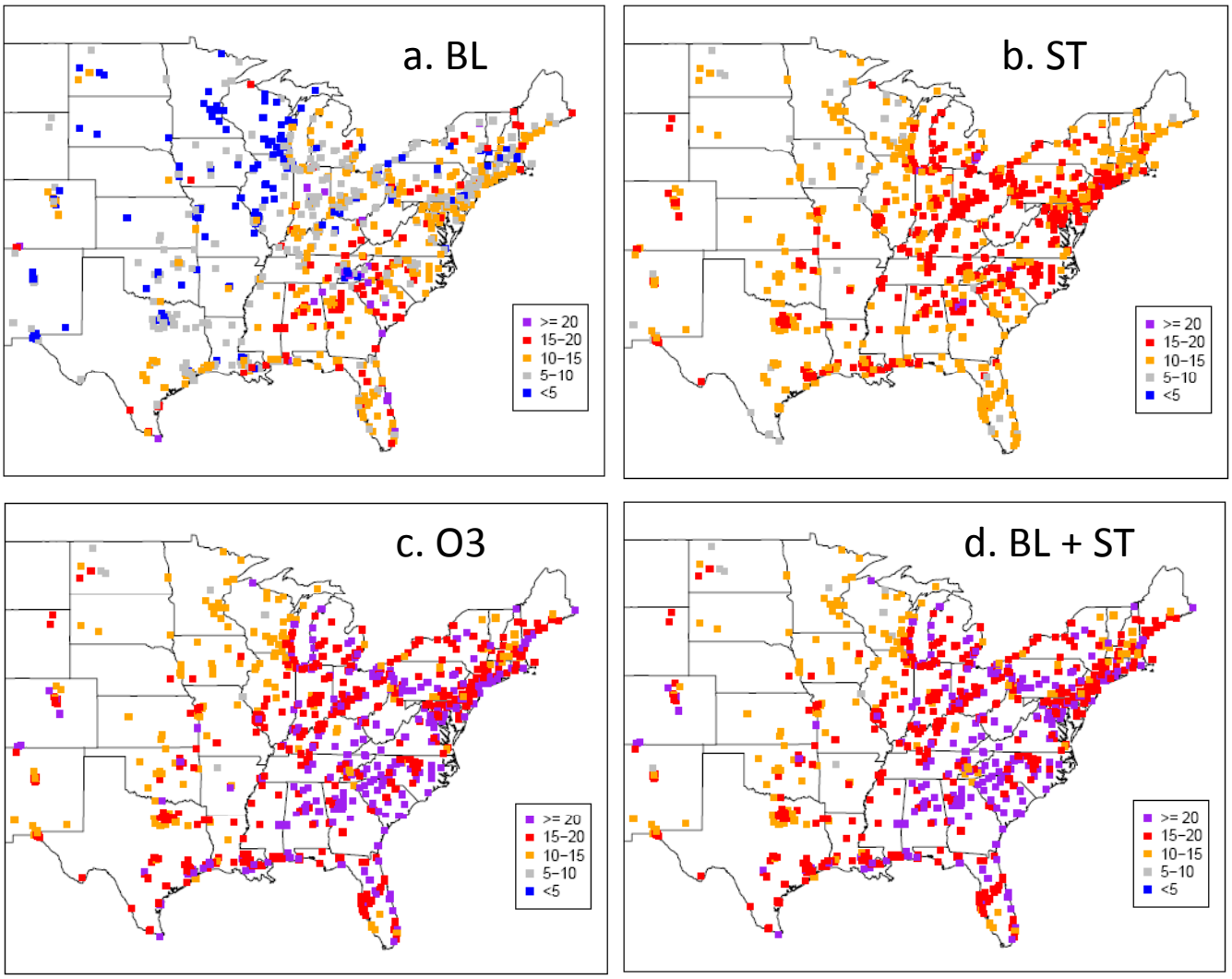

Figure 2. RMSE values at AQS monitoring stations between modeled and observed hourly O_3 (c) and components: a. BL, b. ST, and d. BL+ST (as calculated using Eq. 4 when BL and ST are treated as independent components of hourly O_3 time series)

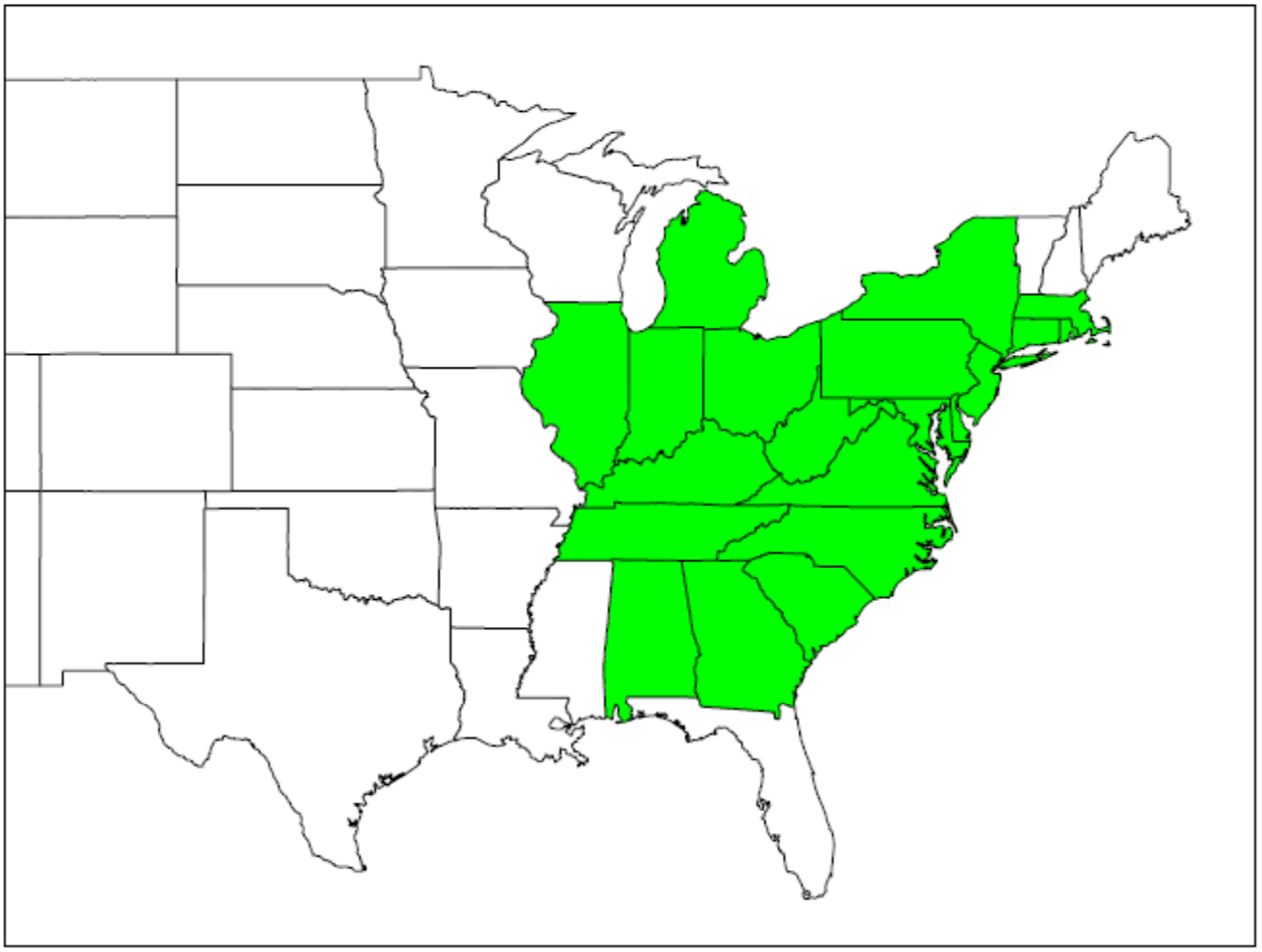

Figure 3. Map of the modeling domain with SIP States (green) where NO_X SIP Call was implemented and NSIP States (white) where NO_X SIP Call was not implemented as of 2005 (see text for further description)

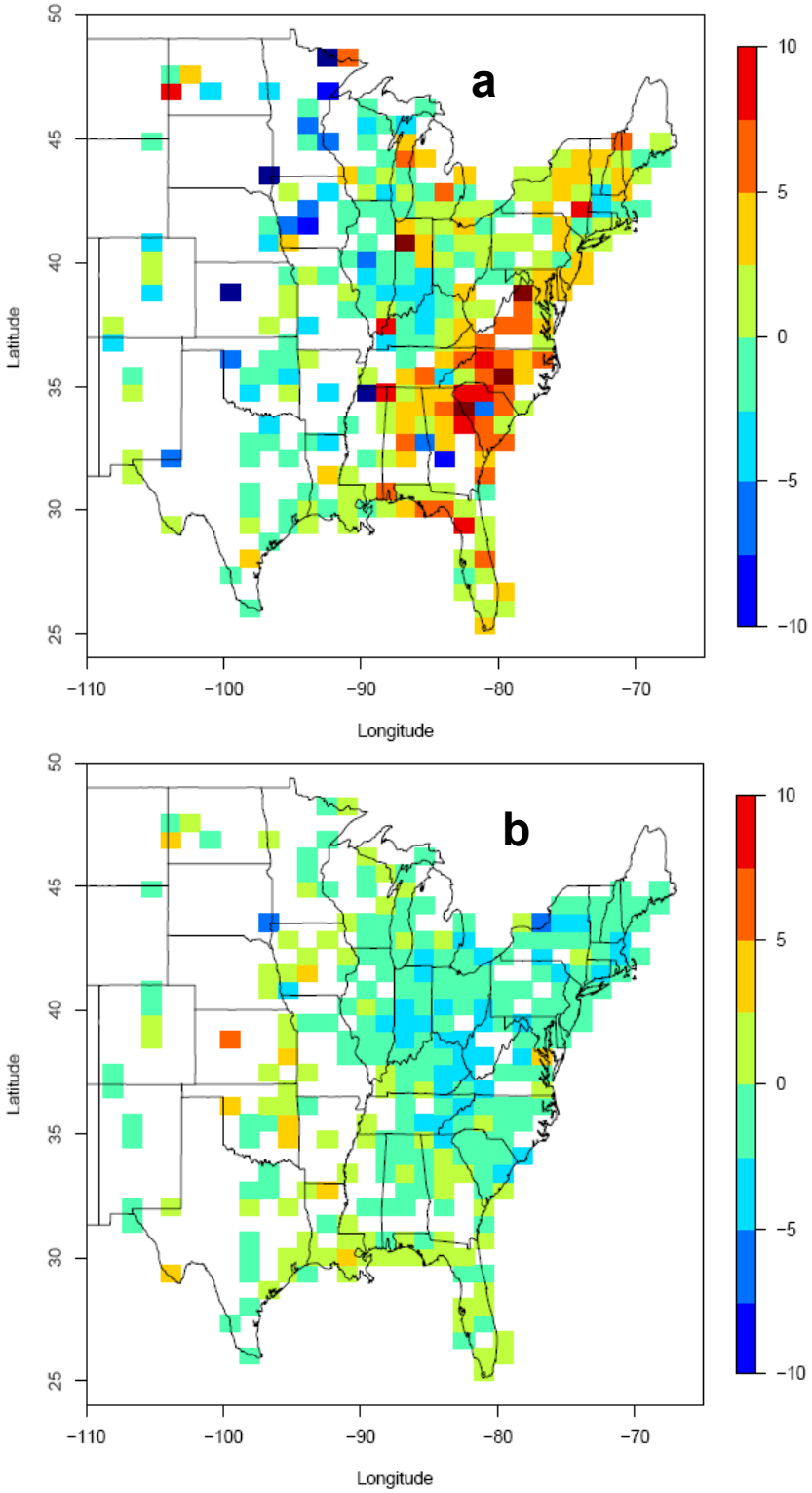

Figure 4. Comparison of spatial distributions of RMSE difference (2005 – 2002) associated with the BL (a) and ST (b) components for O_3 simulations in 2002 and 2005

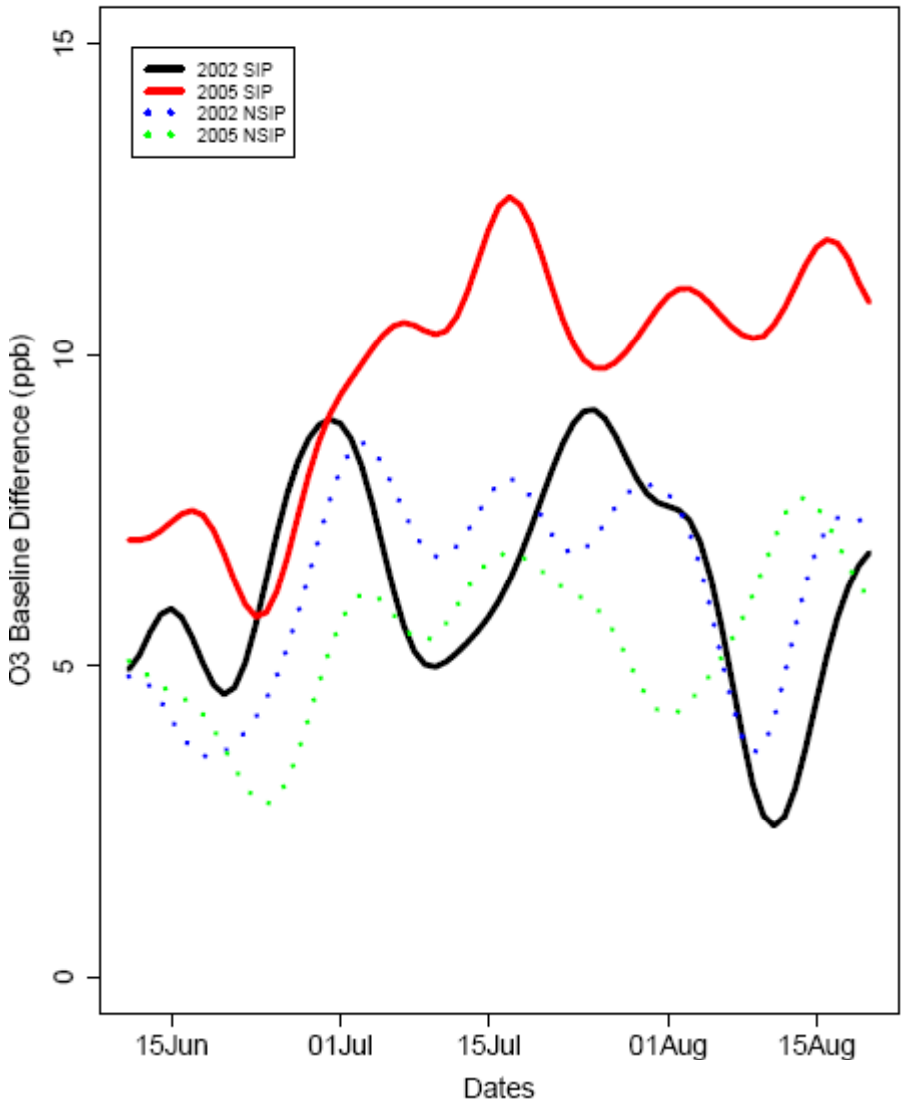

Figure 5. The timeseries of the difference of O_3 baseline between modeled and observed values for sites within the states where NO_X SIP Call was implemented (2002 SIP and 2005 SIP) and sites within the states where NO_X SIP Call was not implemented (2002 NSIP and 2005 NSIP) ; No. of SIP sites: 448 (2002) and 445 (2005), No. of NSIP sites: 430 (2002) and 445 (2005)

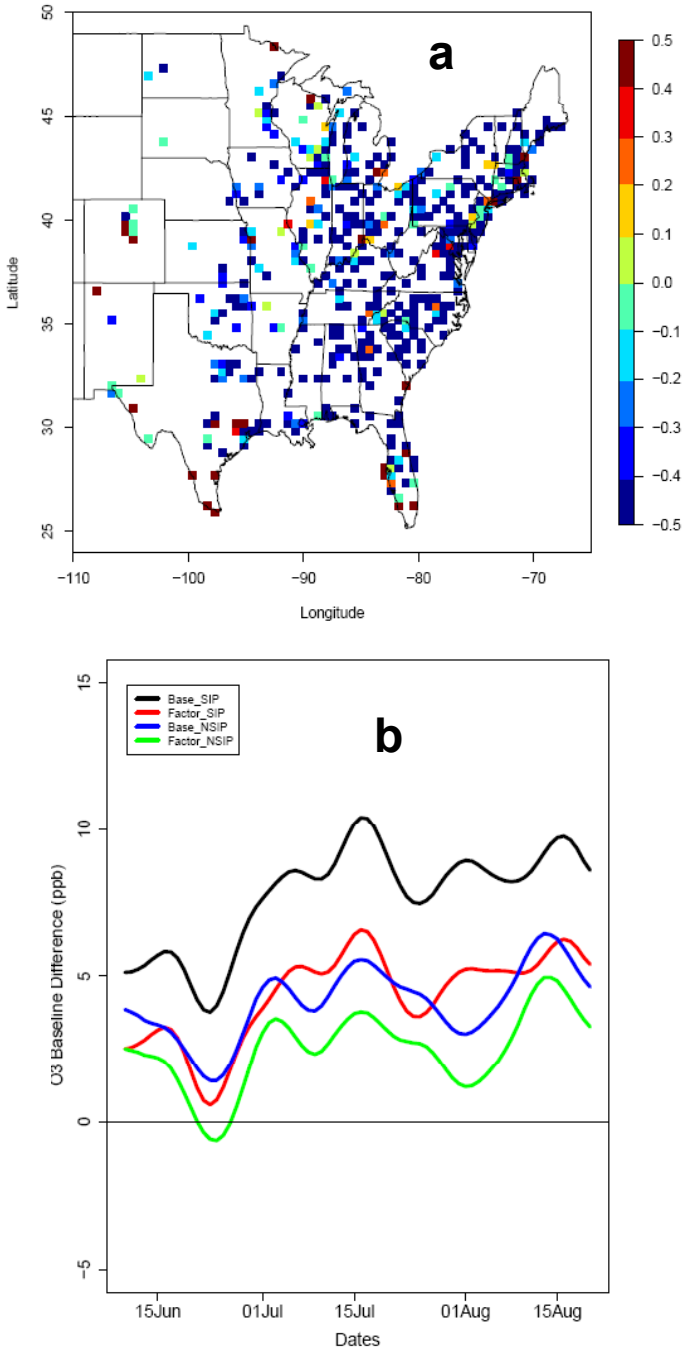

Figure 6. Optimal emission (mobile and area) perturbation factors (a) that produce the least MB values for O_3 baseline at each site and the mean timeseries of MB (b) for base model and the reduced form model with the optimal emission perturbation factors for SIP and NSIP sites, respectively, for the 2005 simulations.

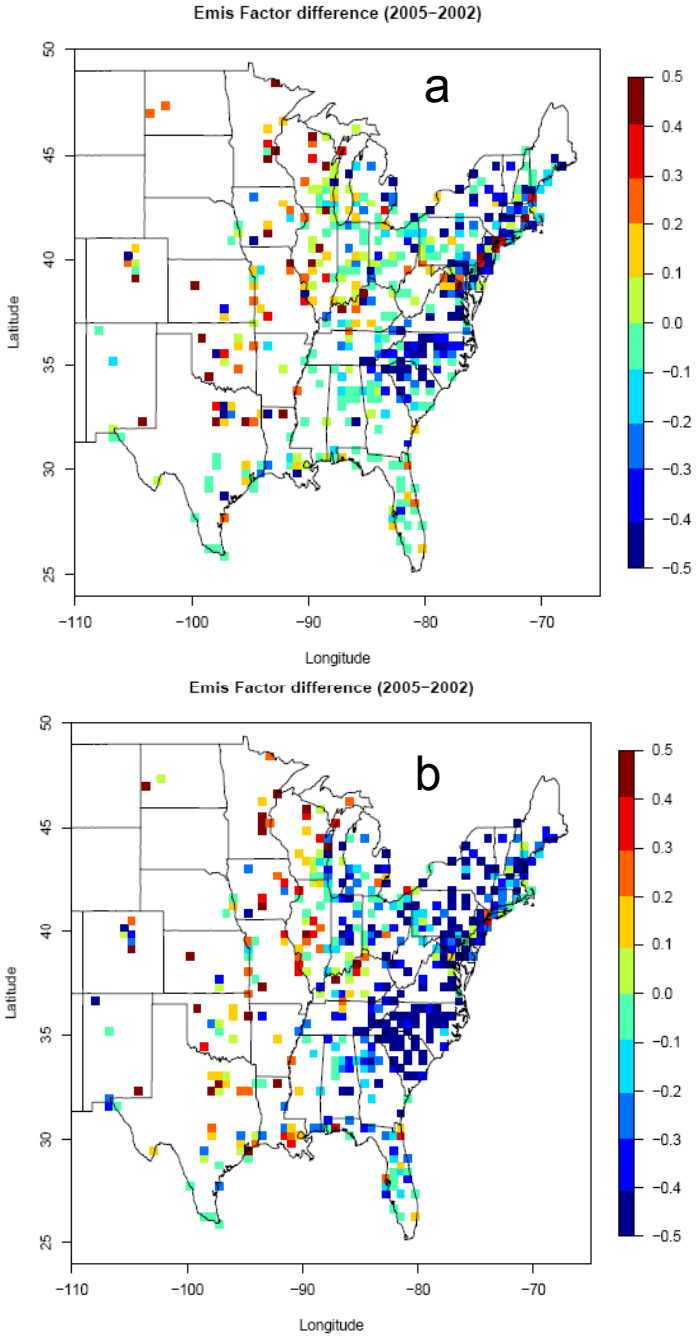

Figure 7. The emissions factors needed to achieve the same level of mean bias in 2005 as in 2002 at each site: a. minimum mean bias for baseline; and b. minimum mean bias for daily maximum 8-hr O_3

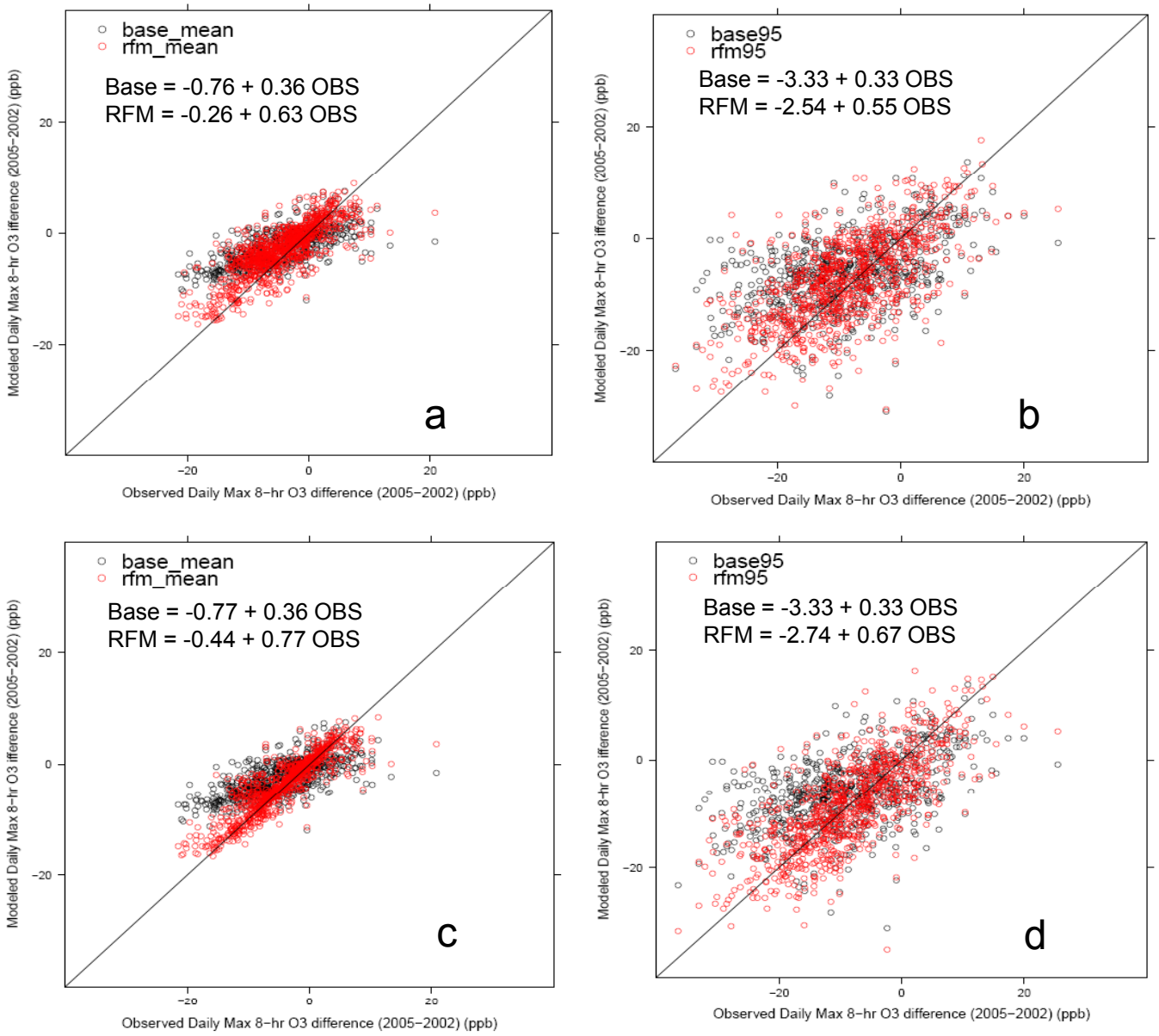

Figure 8. The scatter plots between the modeled change (base model and the reduced form model (rfm)) and observed change from 2002 to 2005 for the mean daily max. 8-hr O_3 and the mean value for daily max. 8-hr O_3 ≥ 95th% with two rfm adjustments: 1. emission factors (Fig. 7a) for min. mean biases for baseline (a, b) and 2. emission factors (Fig. 7b) for min. mean biases for daily max. 8-hr O_3 (c, d)