

Fig. S1. Evolution of the European annual ozone anomalies at each hour of the day for 95th (top) and 5th (bottom) percentiles.

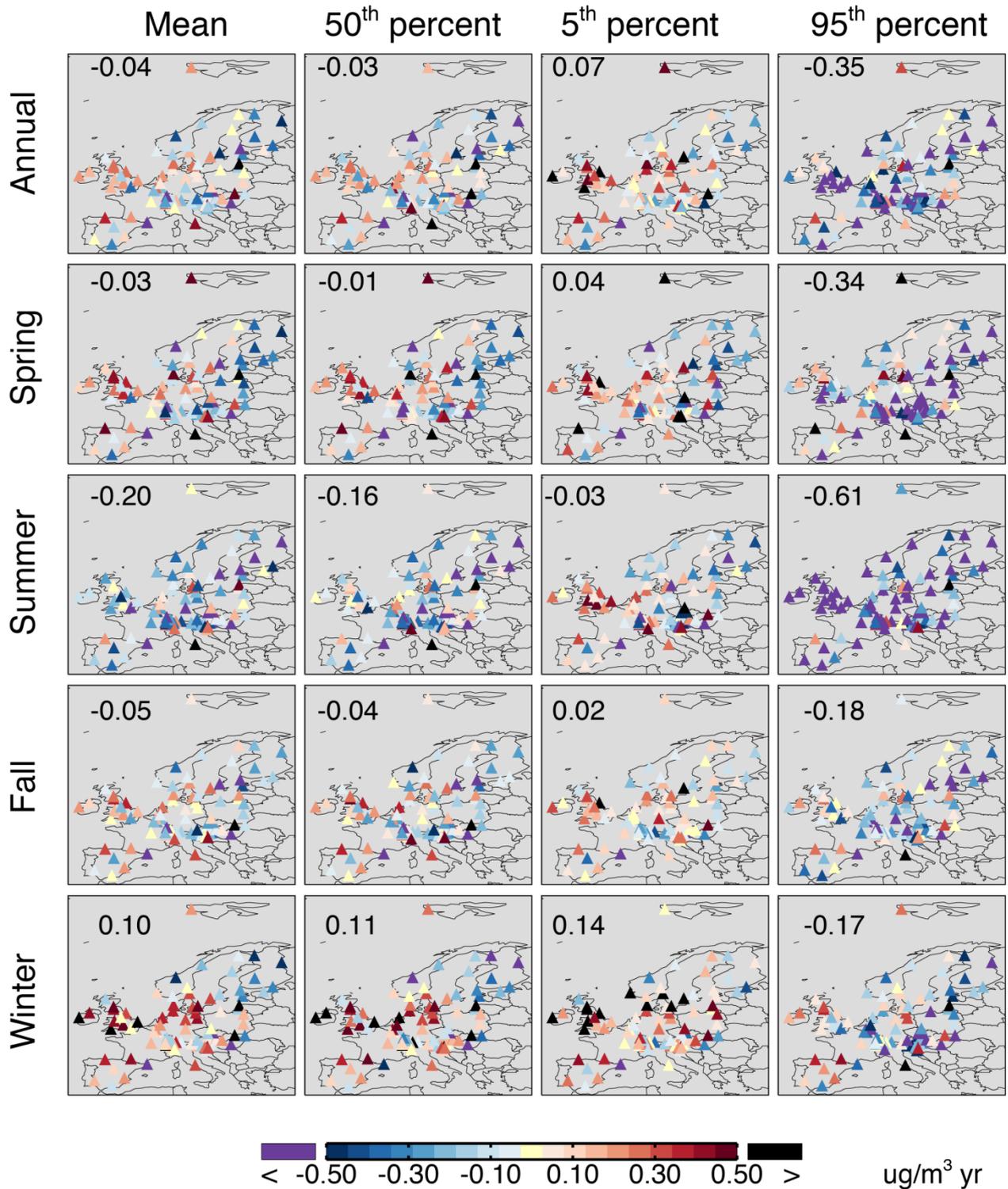


Fig. S2. Spatial distribution of measured nighttime ozone trends in $\mu\text{g}/\text{m}^3/\text{yr}$ across the selected 93 sites for average, 5th, 50th and 95th percentile ozone for the annual mean and four seasons. Also shown in each panel are the average trends over all sites.

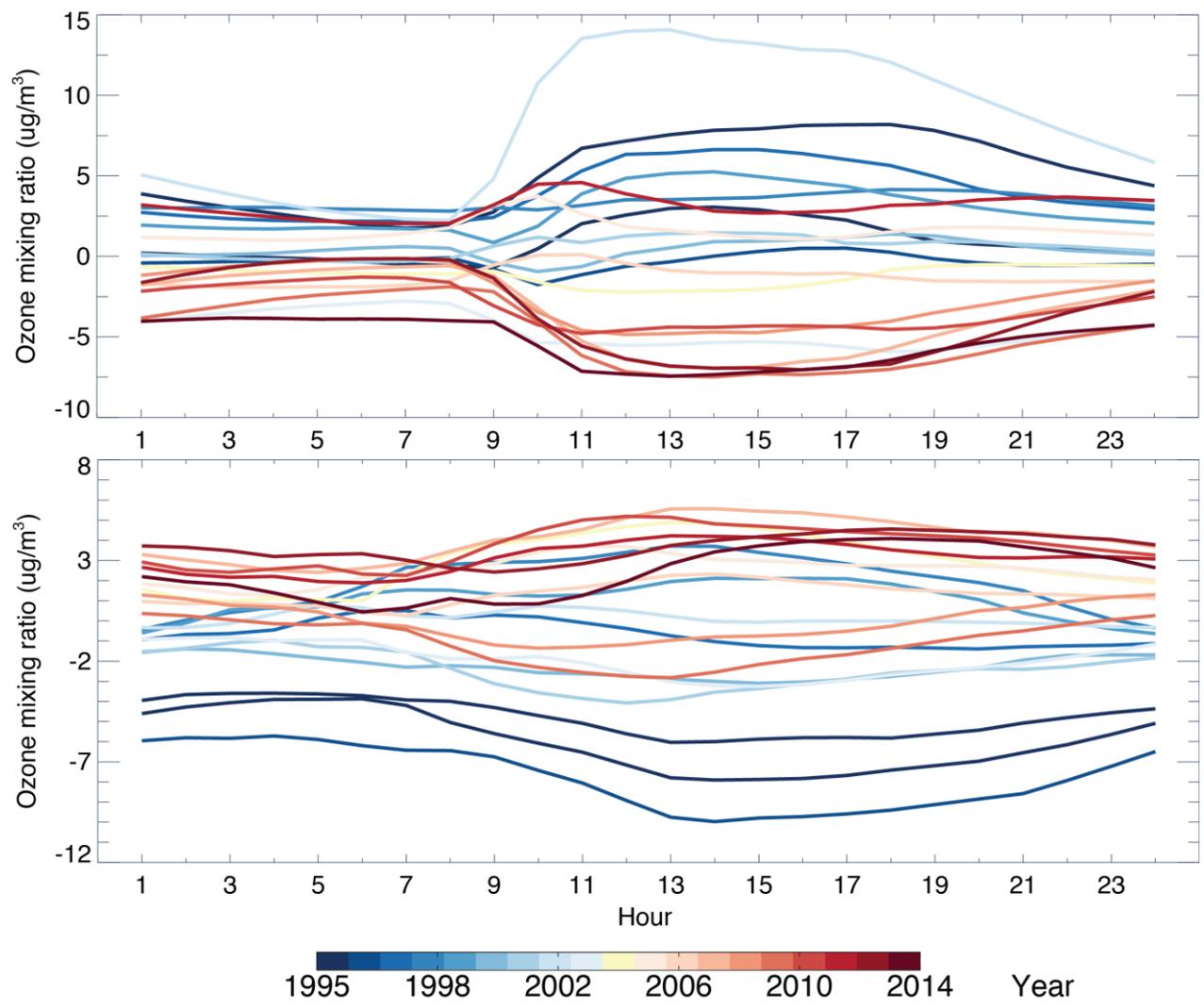


Fig. S3. Evolution of the modeled European annual ozone anomalies at each hour of the day for 95th (top) and 5th (bottom) percentiles.

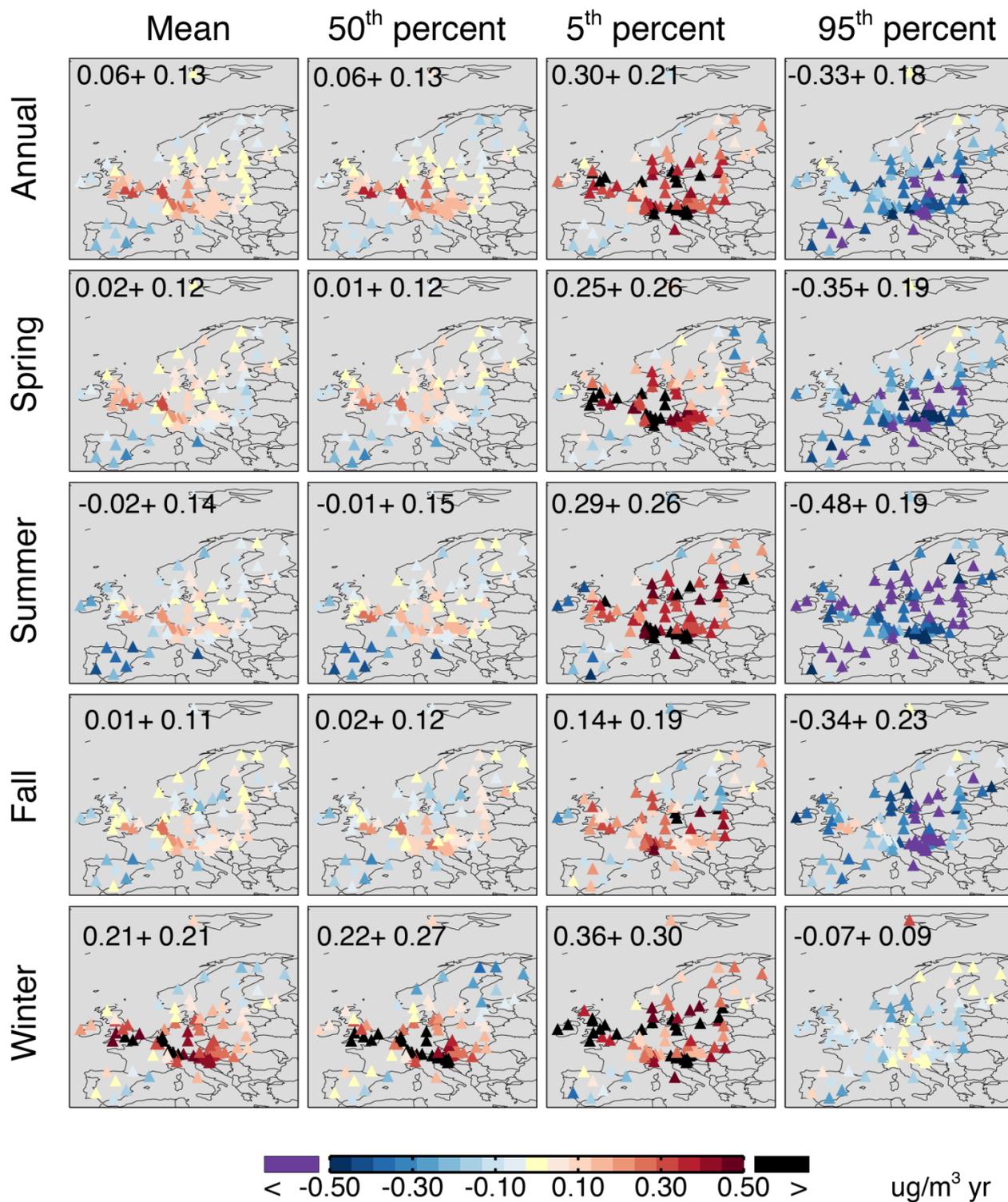


Fig. S4. Spatial distribution of simulated daily ozone trends by the EMAC model for average, 5th, 50th and 95th percentile ozone for the annual mean and four seasons. Also shown in each panel are the average trends over all sites.

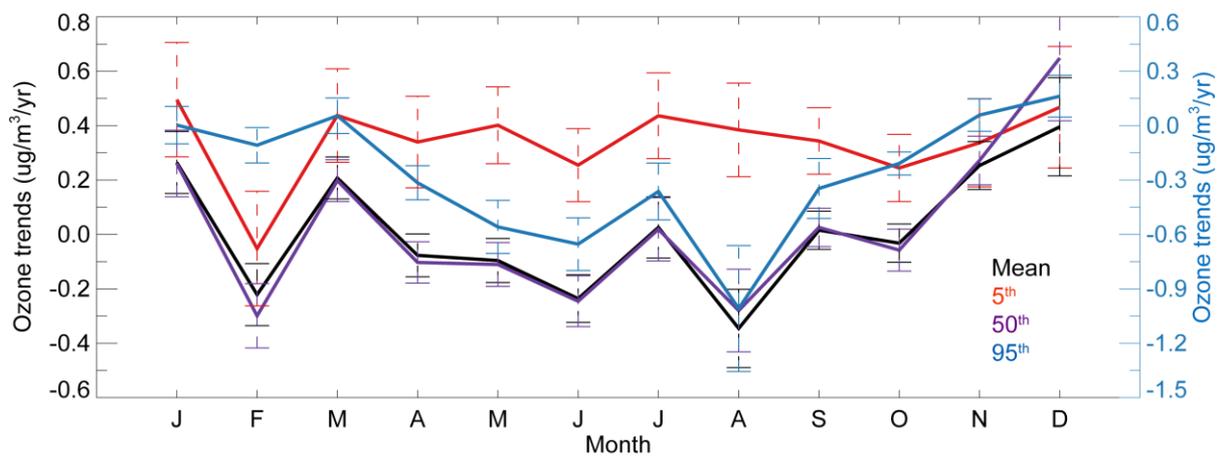


Fig. S5. Monthly trend in modeled surface ozone averaged over Europe. The black line shows the 1995–2014 linear trends in the European mean ozone for each month of the year, the red, purple and blue lines depict the observed trend for 5th, 50th and 95th percentile ozone, respectively, and the dashed bars indicate their standard deviations.

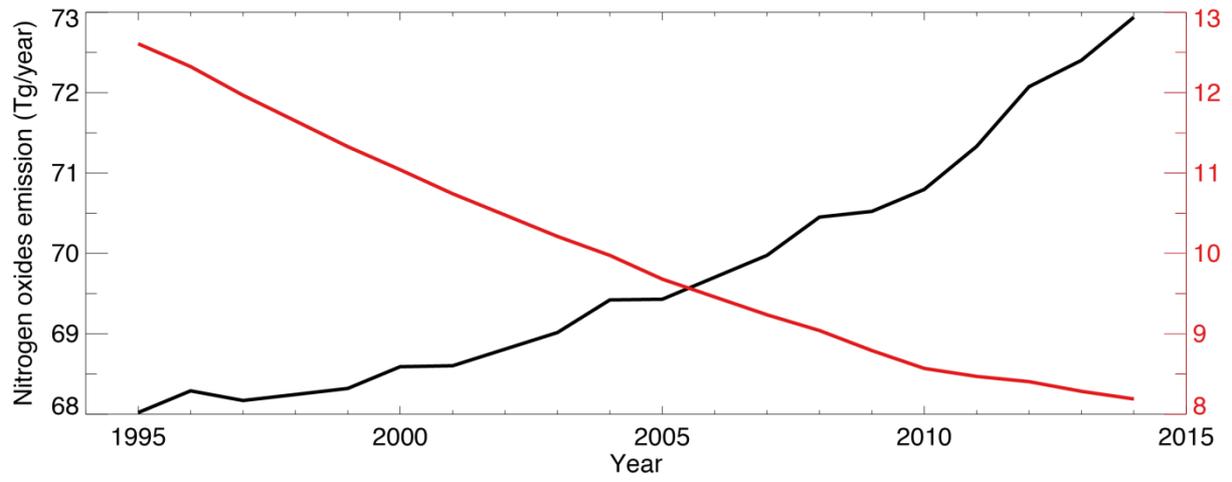


Fig. S6. Annual total nitrogen oxides emission over European (red) and global scale (black) based on the MACCity (MACC/CityZEN EU projects) emissions dataset.

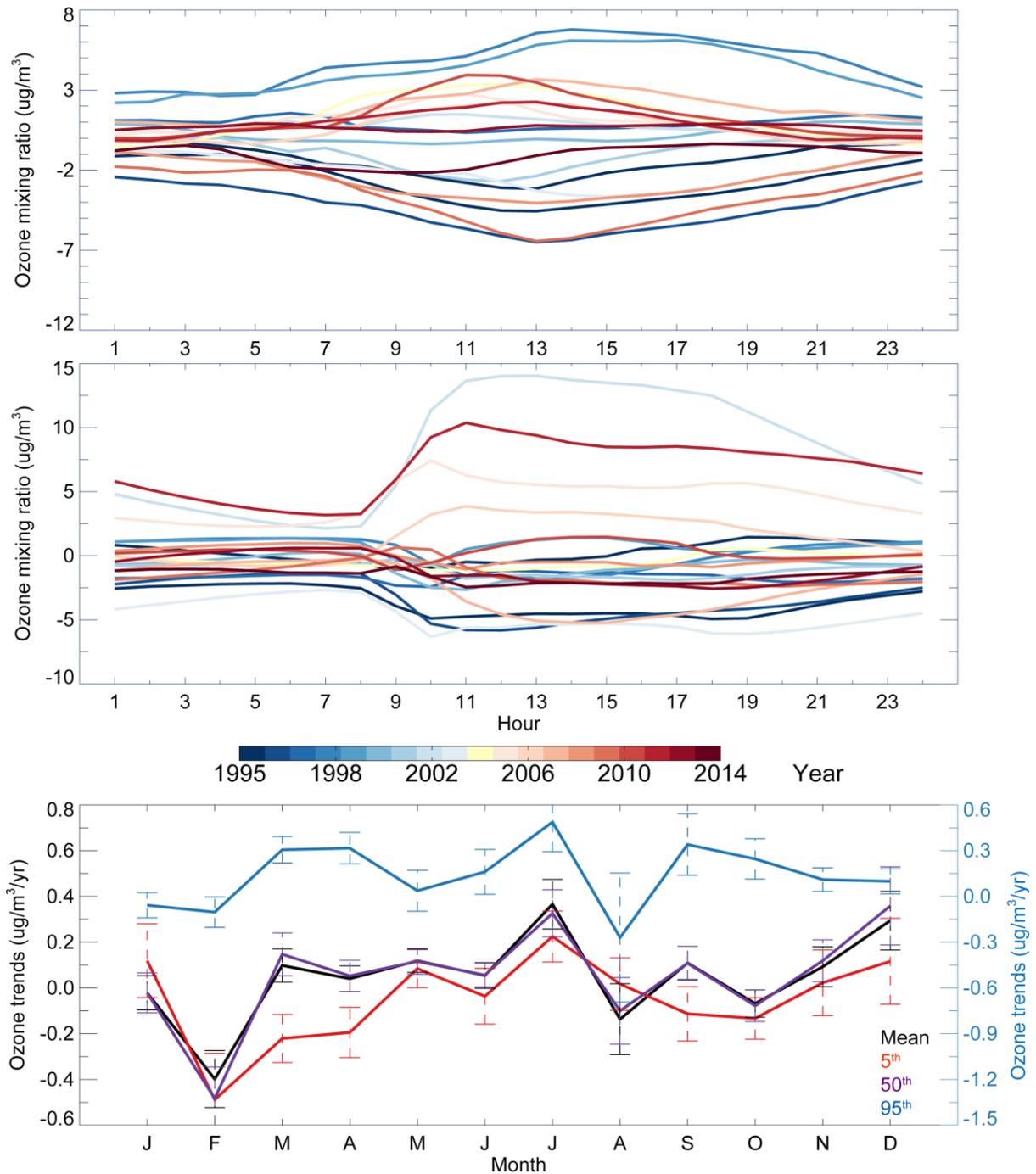


Fig. S7. Hourly evolutions for 5th (top) and 95th (middle) percentiles and monthly trend (bottom) in the modeled surface ozone by fixing anthropogenic emissions in the EMAC model. The black line shows the 1995–2014 linear trends in the European mean ozone for each hour of the day, the red, purple and blue lines depict the observed trends for 5th, 50th and 95th percentile ozone, respectively, and the dashed bars indicate their standard deviations.

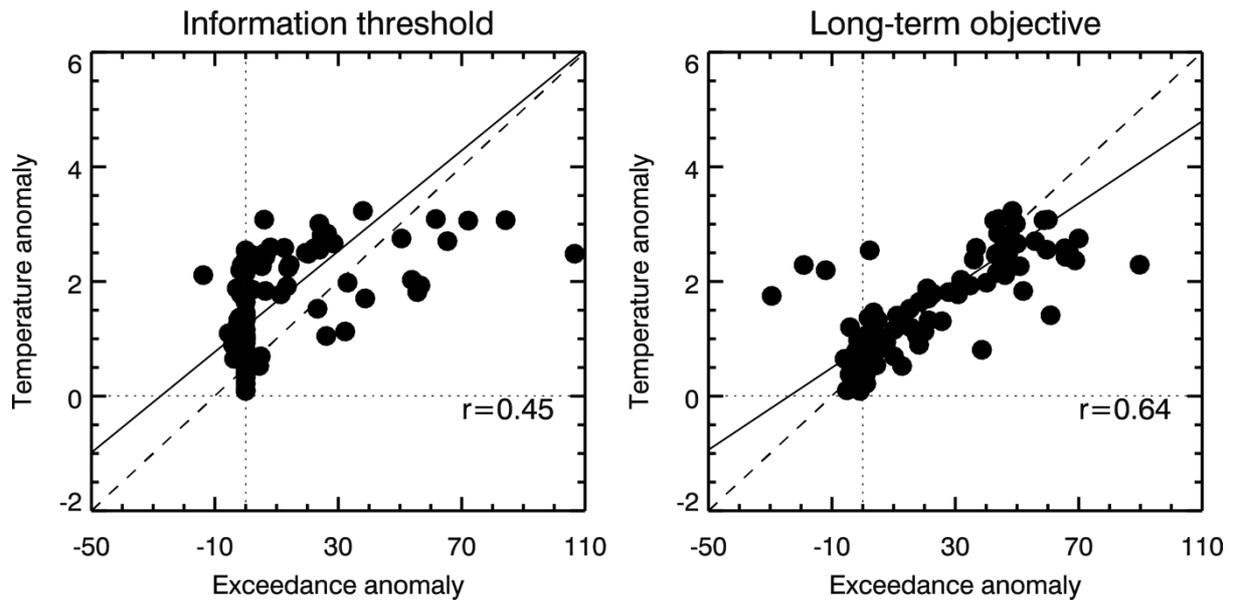


Fig. S8. Correlations between the 2-meter temperature anomalies in 2003, relevant to the averages over 1995-2002, and the exceedance anomalies for the information threshold as well as the long-term objective over the 93 sites.

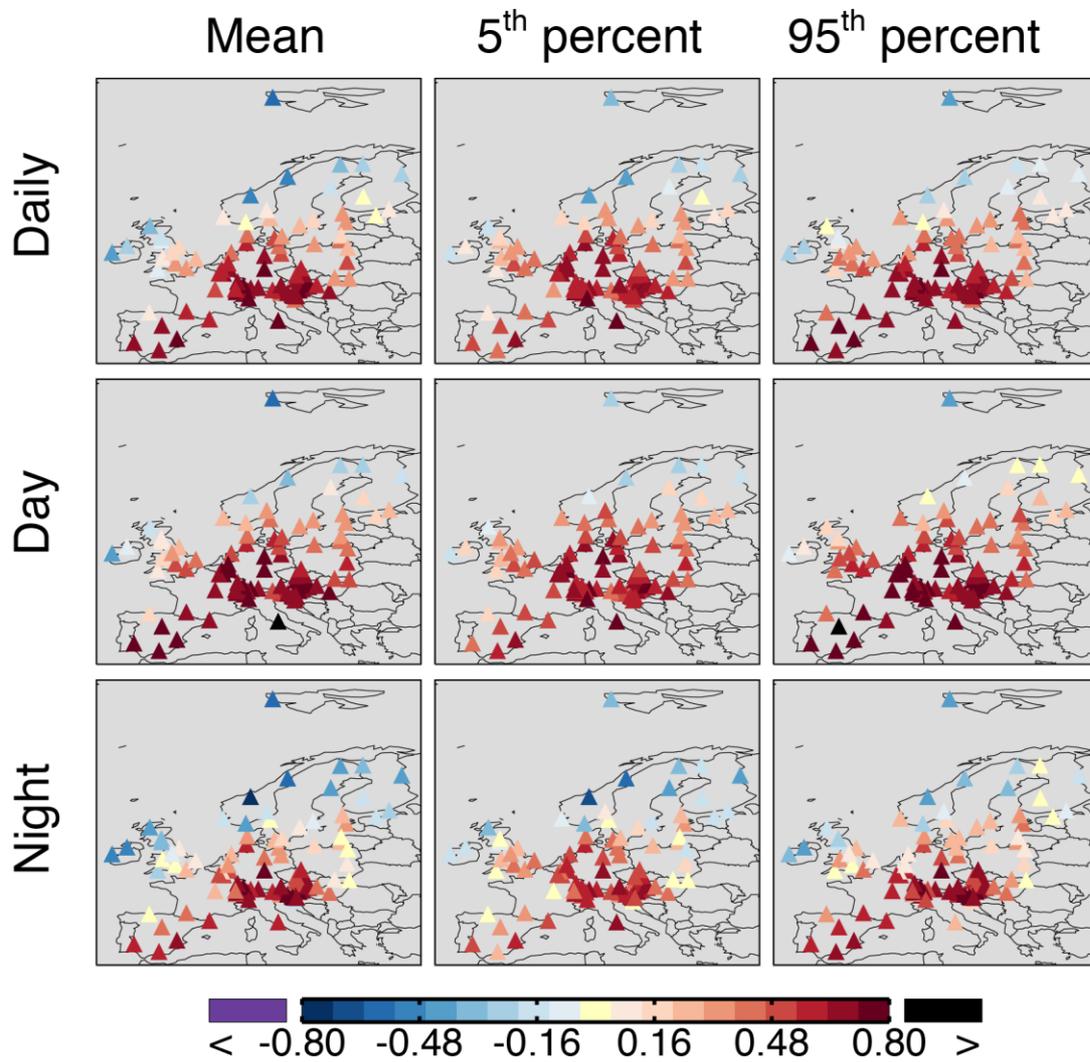


Fig. S9. Site-by-site correlations between the monthly mean 2-meter temperature and monthly mean, 5th and 95th percentile ozone in the daily data, and during daytime as well as nighttime.

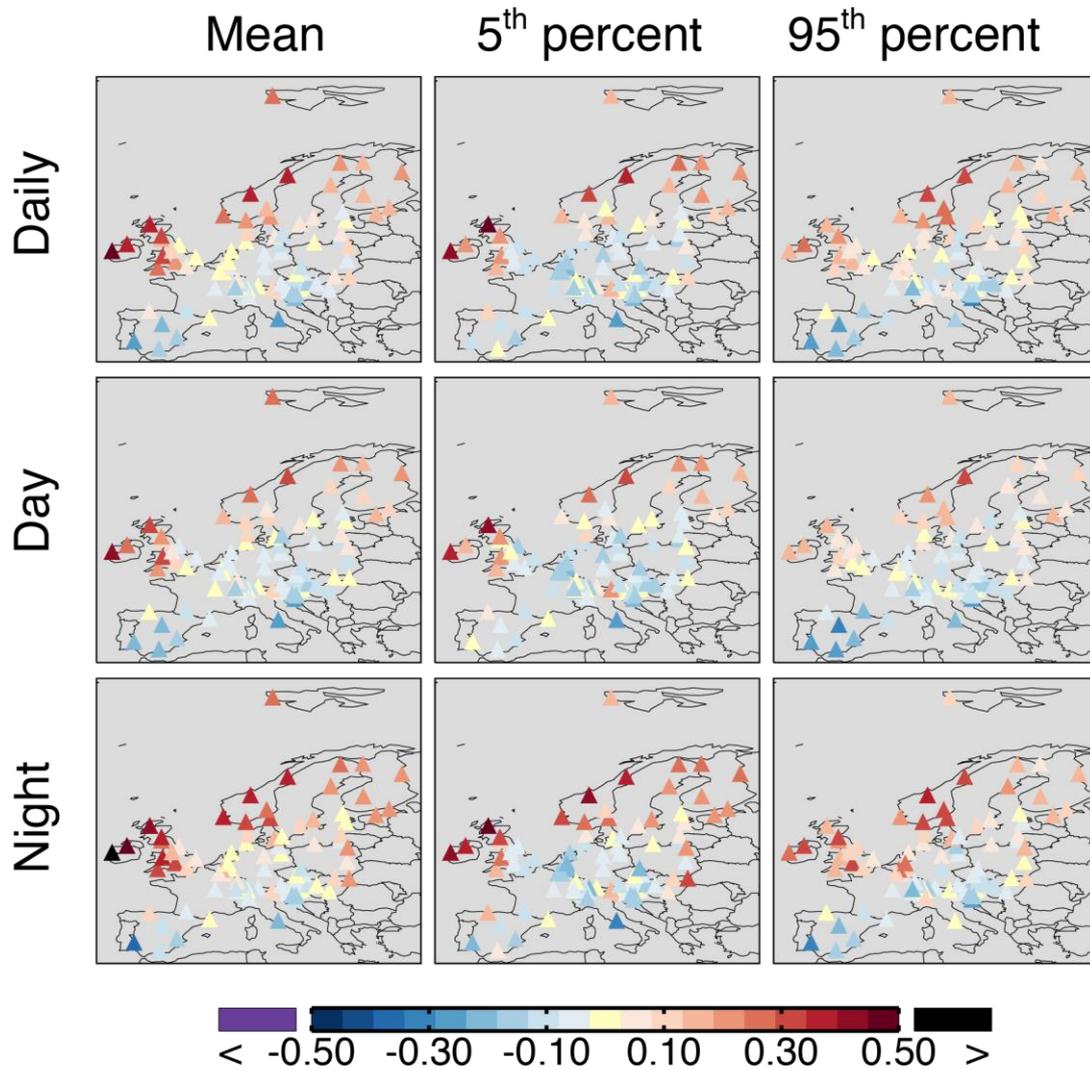


Fig. S10. Similar to Fig. S9, but for correlations between NAO index and ozone concentrations.