Figure 6 in the revised manuscript: Relative changes in Nr emissions and deposition as well as the ratio of changes in OXN outflow to changes in NO_x emissions ($\Delta T/\Delta E$) in WC and EC from 2010s to 2060s under different emission scenarios.
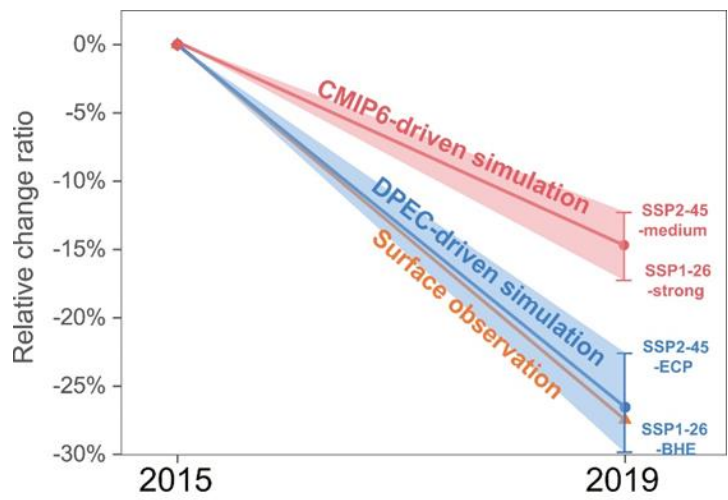
Figure R1 Relative change ratios of surface in-situ observed and simulated $PM_{2.5}$ concentrations during 2015-2019 driven by DPEC (blue) and CMIP6 (red) emissions under the strong and medium mitigation pathways.
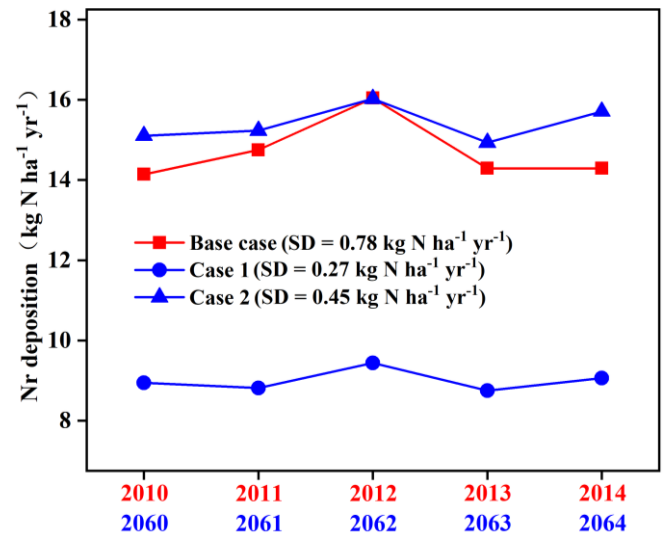
Figure S3 in the revised supplement: Annual Nr deposition flux (kg N ha⁻¹ yr⁻¹), five-year standard deviation (SD, kg N ha⁻¹ yr⁻¹) for 2010-2014 (red) and for 2060-2064 (blue) under the SSP2-4.5 (Case 1) and SSP5-8.5 (Case 2).

$$MB = \frac{1}{n}\sum_{i=1}^{n}(S_i - O_i) \tag{S1}$$

$$ME = \frac{1}{n}\sum_{i=1}^{n}|S_i - O_i| \tag{S2}$$

where S and O are the monthly meteorological variables from model simulation and observation, respectively; i means the individual month.