Supporting Information for

Climate-driven deterioration of future ozone pollution in Asia predicted by machine learning with multisource data

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Introduction

This auxiliary material contains supporting figures for Climate-driven deterioration of future ozone pollution in Asia predicted by machine learning with multisource data.

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Figure S1. Spatial distributions of O_3 precursor emissions (g/m²/yr) of (a) NO_x, (b) NMVOC, and (c) CO over Asia in 2019.



Figure S2. Spatial distributions of absolute (K) and percentage difference (%) in the CMIP6 multi-model mean of air temperature at 2m (T_2m) between 2025 (2020–2029 mean) and 2095 (2091–2100 mean) over Asia under the SSP1-2.6, SSP2-4.5, SSP3-7.0 and SSP5-8.5 scenarios (from left to right), respectively. No overlaying hatch pattern indicates statistical significance with 95% confidence from a two-tailed t test.



Figure S3. Same as Fig. S2, relative humidity (RH, %)



Figure S4. Same as Fig. S2, but for incoming shortwave solar radiation (RSDS, W m^{-2}).



Figure S5. Same as Fig. S2, but for total cloud cover (CLT, %).



Figure S6. Spatial distributions of projected near-surface O₃ concentrations (ppb) averaged in 2025 (2020–2029 mean) and 2095 (2091–2100 mean) driven by climate change under the four scenarios (SSP1-2.6, SSP2-4.5, SSP3-7.0 and SSP5-8.5, from left to right column) over Asia.



Figure S7. Same as Fig. S2, but for precipitation (PRECP, mm day⁻¹).



Figure S8. Spatial distributions of percentage differences (%) in the CMIP6 multi-model seasonal averaged T_2m between 2025 and 2095 over Asia under the SSP5-8.5 scenario. No overlaying hatch pattern indicates statistical significance with 95% confidence from a two-tailed t test.



Figure S9. Same as Fig. S8, but for RSDS.



Figure S10. Same as Fig. S8, but for SLP.



Figure S11. Same as Fig. S8, but for 850 hPa winds.



Figure S12. Same as Fig. S8, but for 500 hPa winds.



Figure S13. Same as Fig. S8, but for RH.



Figure S14. Same as Fig. S8, but for CLT.



Figure S15. Same as Fig. S8, but for PRECP.