Supplemental material to:

"On the relationship between total ozone and atmospheric dynamics and chemistry at mid-latitudes – Part 1: Statistical models and spatial fingerprints of atmospheric dynamics and chemistry"

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This document contains augmented versions of Figs. 4–9 of the paper. In addition to the pointwise regression coefficient estimates and the p-values of the z-tests for significance of the estimates, which are all shown in the paper, the figures in this document also contain maps of the standard errors for the estimates at each grid cell. It is important to display individual standard errors for each grid cell, because the uncertainty of an estimate can be of interest independently of whether the estimate is significant or not. Moreover the standard errors are not constant across space (see panels (d)–(f) and (n)–(p) of Figs. S1–S6), for which reason indicating only a global "standard error" would not be sensible.
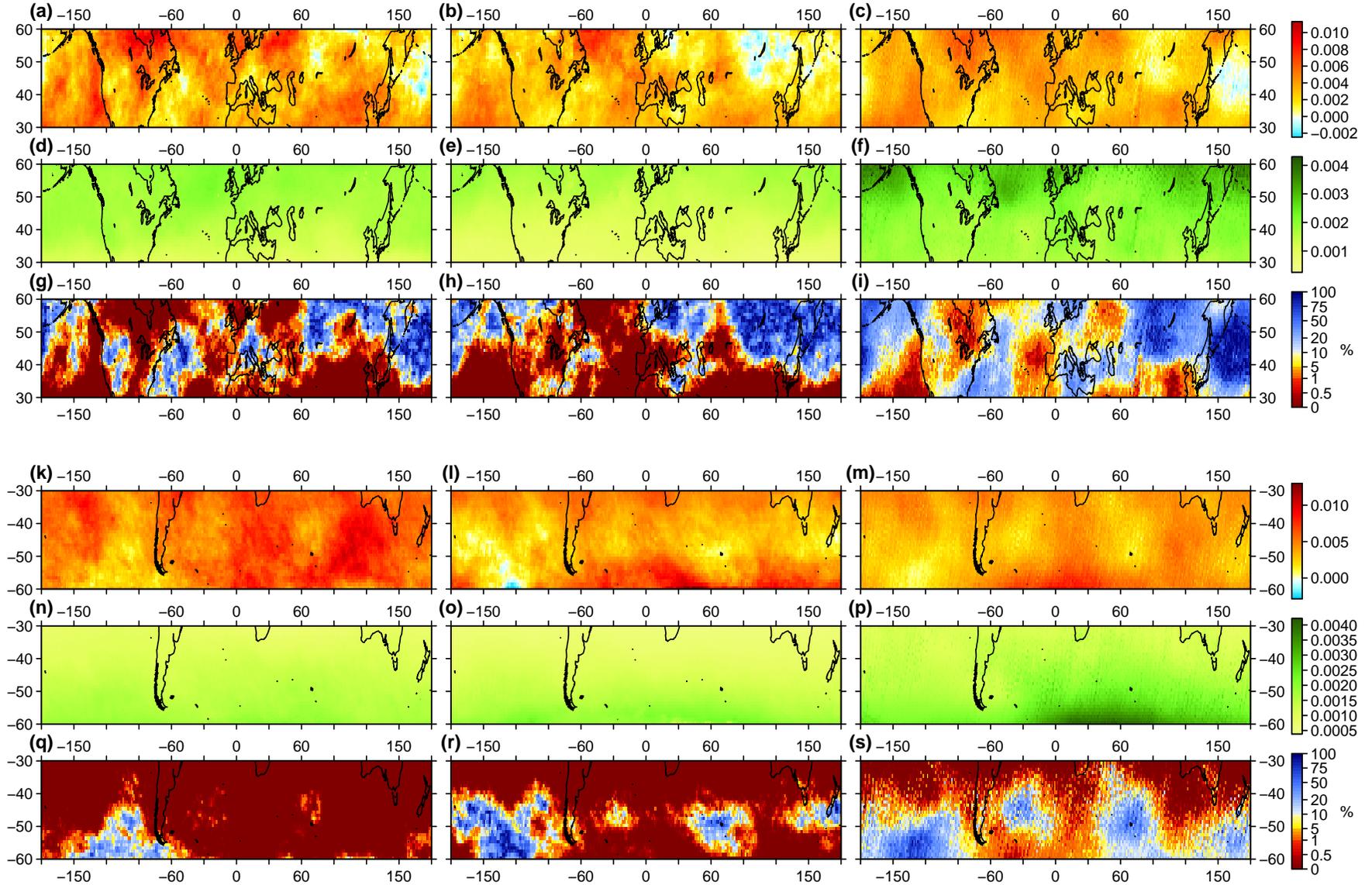
Fig. S1. Pointwise regression coefficient estimates (in DU $10^{22}\,\mathrm{W}^{-1}\,\mathrm{m}^2\,\mathrm{Hz}$) for the solar cycle on an annual basis for **(a)** EHOs, **(b)** ELOs, and **(c)** mean values of total ozone at $30°\,\mathrm{N}$ to $60°\,\mathrm{N}$; **(d)**–**(f)** show standard errors for the estimates in **(a)**–**(c)**, while **(g)**–**(i)** show the corresponding p-values of pointwise significance tests. **(k)**–**(s)** as **(a)**–**(i)** but at $30°\,\mathrm{S}$ to $60°\,\mathrm{S}$.
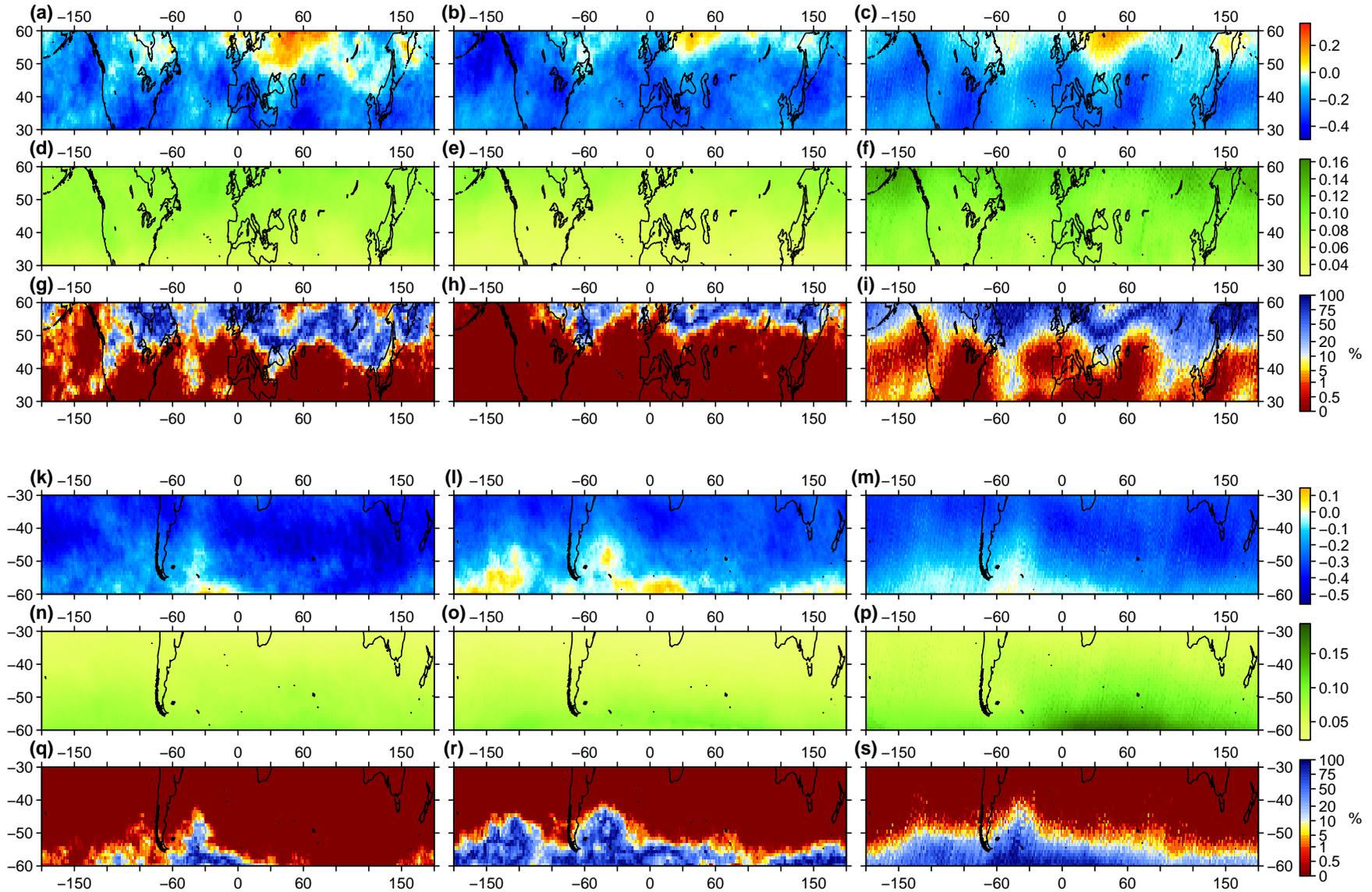
Fig. S2. Pointwise regression coefficient estimates (in $\mathrm{DU\,m^{-1}\,s}$) for the Quasi-Biennial Oscillation at $30\,\mathrm{hPa}$ on an annual basis for **(a)** EHOs, **(b)** ELOs, and **(c)** mean values of total ozone at $30°\,\mathrm{N}$ to $60°\,\mathrm{N}$; **(d)**–**(f)** show standard errors for the estimates in **(a)**–**(c)**, while **(g)**–**(i)** show the corresponding p-values of pointwise significance tests. **(k)**–**(s)** as **(a)**–**(i)** but at $30°\,\mathrm{S}$ to $60°\,\mathrm{S}$.
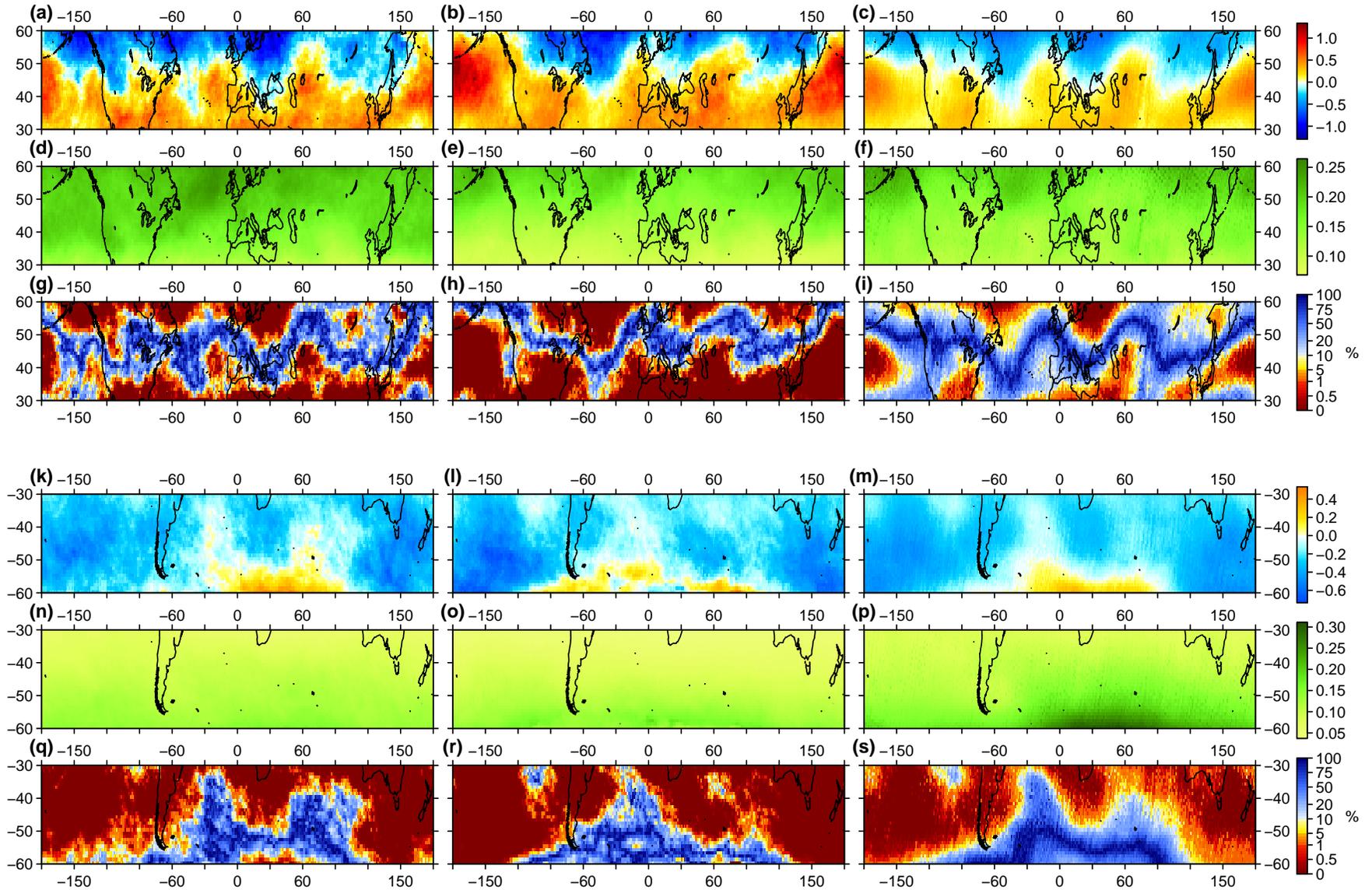
Fig. S3. Pointwise regression coefficient estimates (in DU m^{-1} s) for the Quasi-Biennial Oscillation at 50 hPa on an annual basis for **(a)** EHOs, **(b)** ELOs, and **(c)** mean values of total ozone at 30° N to 60° N; **(d)**–**(f)** show standard errors for the estimates in **(a)**–**(c)**, while **(g)**–**(i)** show the corresponding *p*-values of pointwise significance tests. **(k)**–**(s)** as **(a)**–**(i)** but at 30° S to 60° S.
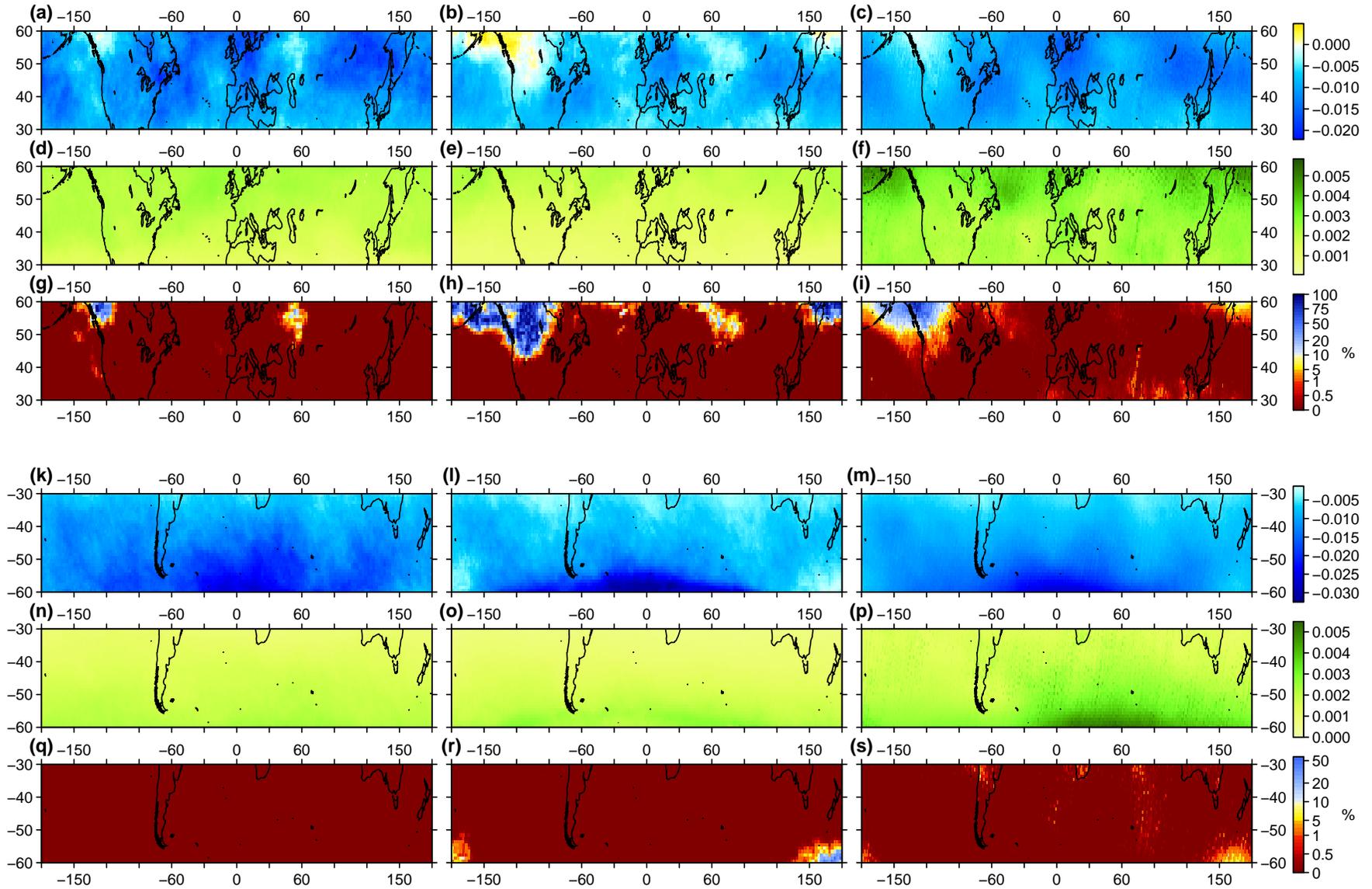
Fig. S4. Pointwise regression coefficient estimates (in DU ppt^{-1}) for ozone depleting substances in terms of equivalent effective stratospheric chlorine (EESC) on an annual basis for **(a)** EHOs, **(b)** ELOs, and **(c)** mean values of total ozone at 30° N to 60° N; **(d)**–**(f)** show standard errors for the estimates in **(a)**–**(c)**, while **(g)**–**(i)** show the corresponding p-values of pointwise significance tests. **(k)**–**(s)** as **(a)**–**(i)** but at 30° S to 60° S.
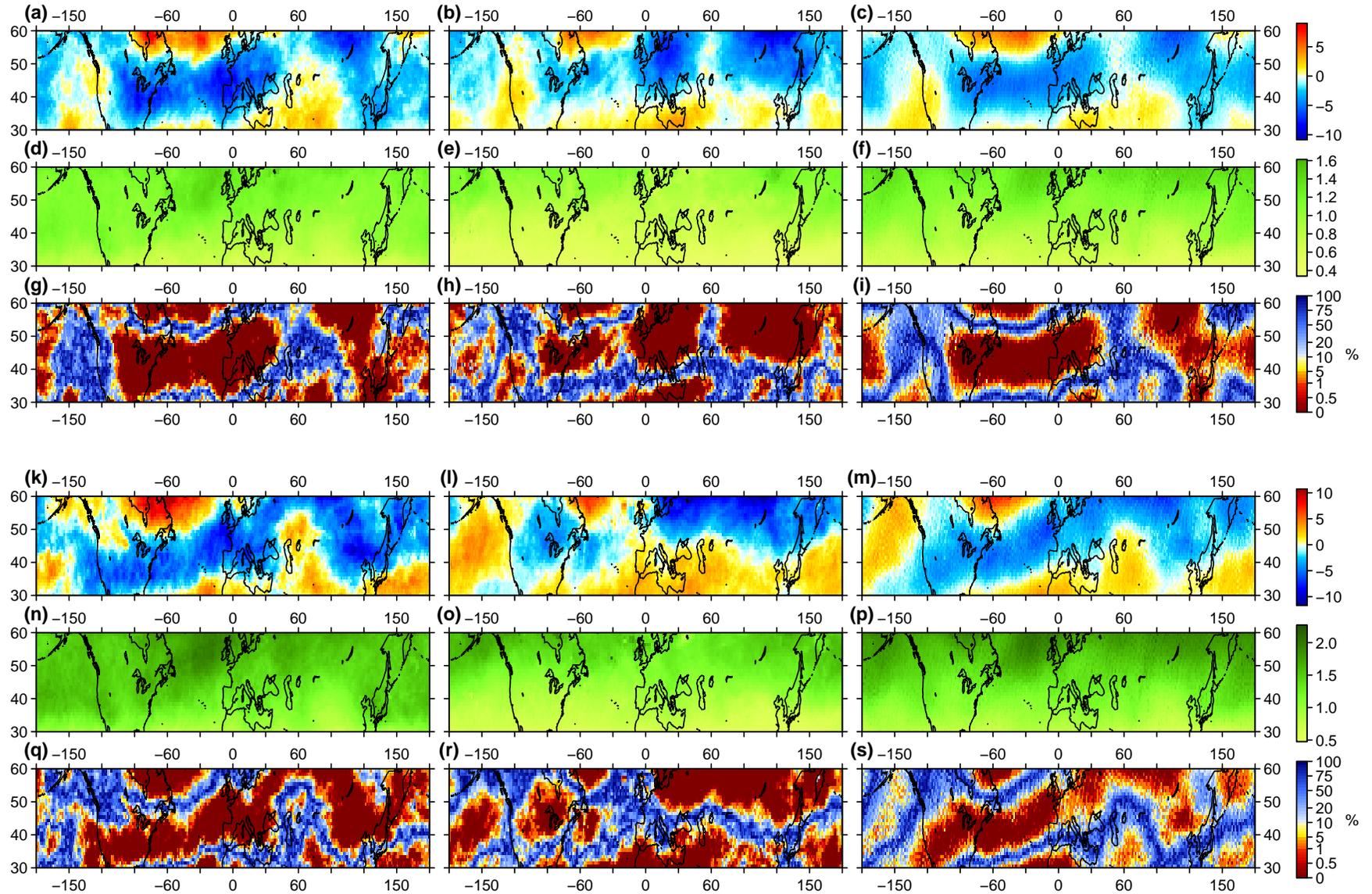
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Fig. S5. Pointwise regression coefficient estimates (in DU (unit NAO)$^{-1}$) for the North Atlantic Oscillation (NAO) for **(a)** EHOs, **(b)** ELOs, and **(c)** mean values of total ozone during winter (DJF) at 30° N to 60° N; **(d)**–**(f)** show standard errors for the estimates in **(a)**–**(c)**, while **(g)**–**(i)** show the corresponding p-values of pointwise significance tests. **(k)**–**(s)** as **(a)**–**(i)** but during spring (MAM).
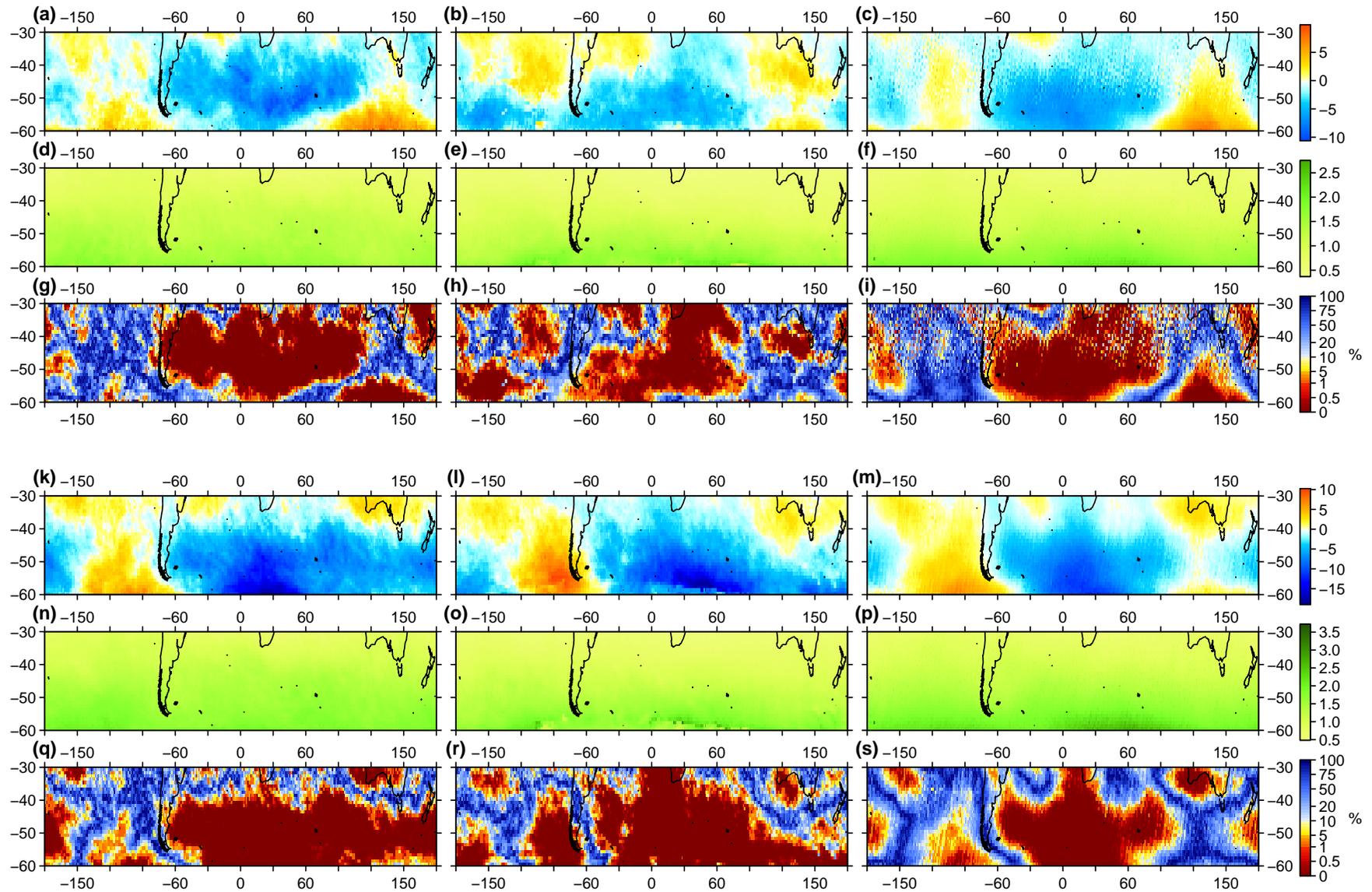
Fig. S6. Pointwise regression coefficient estimates (in DU (unit AAO)$^{-1}$) for the Antarctic Oscillation (AAO) for **(a)** EHOs, **(b)** ELOs, and **(c)** mean values of total ozone during winter (JJA) at 30° S to 60° S; **(d)**–**(f)** show standard errors for the estimates in **(a)**–**(c)**, while **(g)**–**(i)** show the corresponding p-values of pointwise significance tests. **(k)**–**(s)** as **(a)**–**(i)** but during spring (SON).