Supplementary Information for

Global Warming Enhances the Impact of ENSO on Northern Hemisphere Tropospheric Ozone

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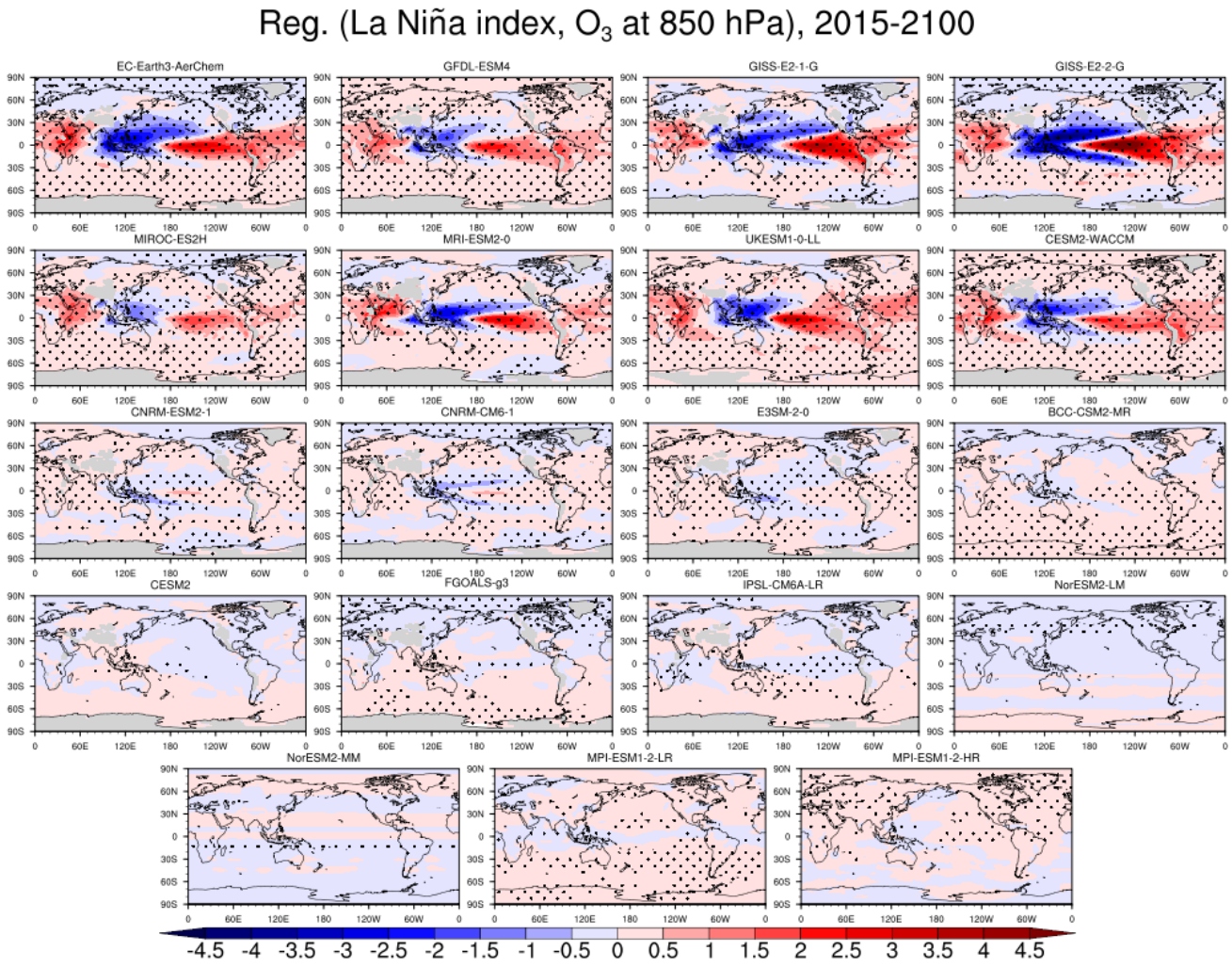

Fig.S1. Regression coefficients between the La Niña index and ozone concentration at 850 hPa (in p pbv/K) over the period 2015–2100, based on 19 CMIP6 models. Positive values indicate that ozone concentrations increase with La Niña–related SST cooling. Dots indicate regions where the correlations are statistically significant at the 95% confidence level based on a t-test.

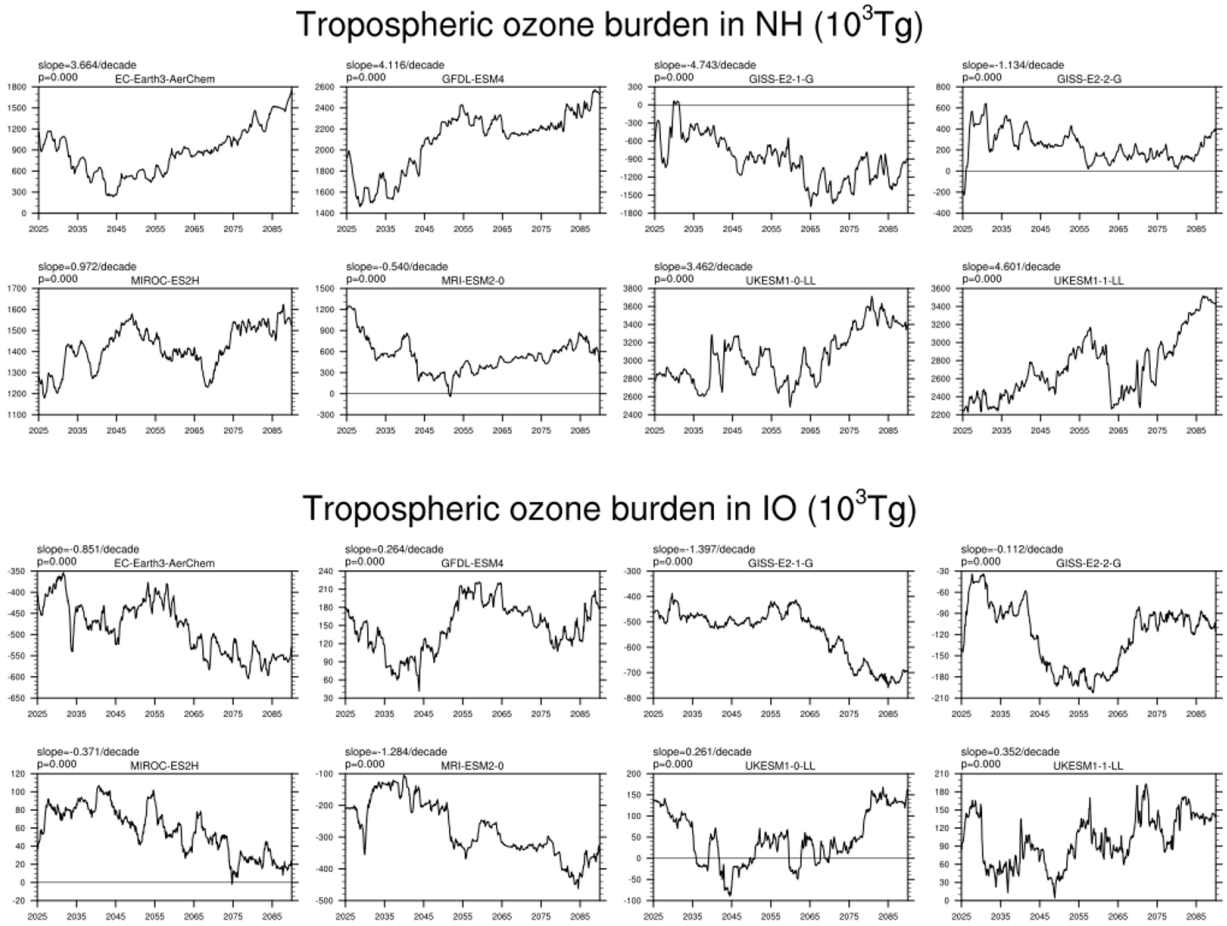

Fig.S2. Time-evolving regression coefficients between the La Niña index and tropospheric ozone burden (in 10^3 Tg) over the Northern Hemisphere (NH) and Indian Ocean (IO) from 2015 to 2100, based on a 21-year running window. The p-values appear as 0.000 due to numerical rounding of extremely small values ($p < 0.0005$), indicating strong statistical significance.

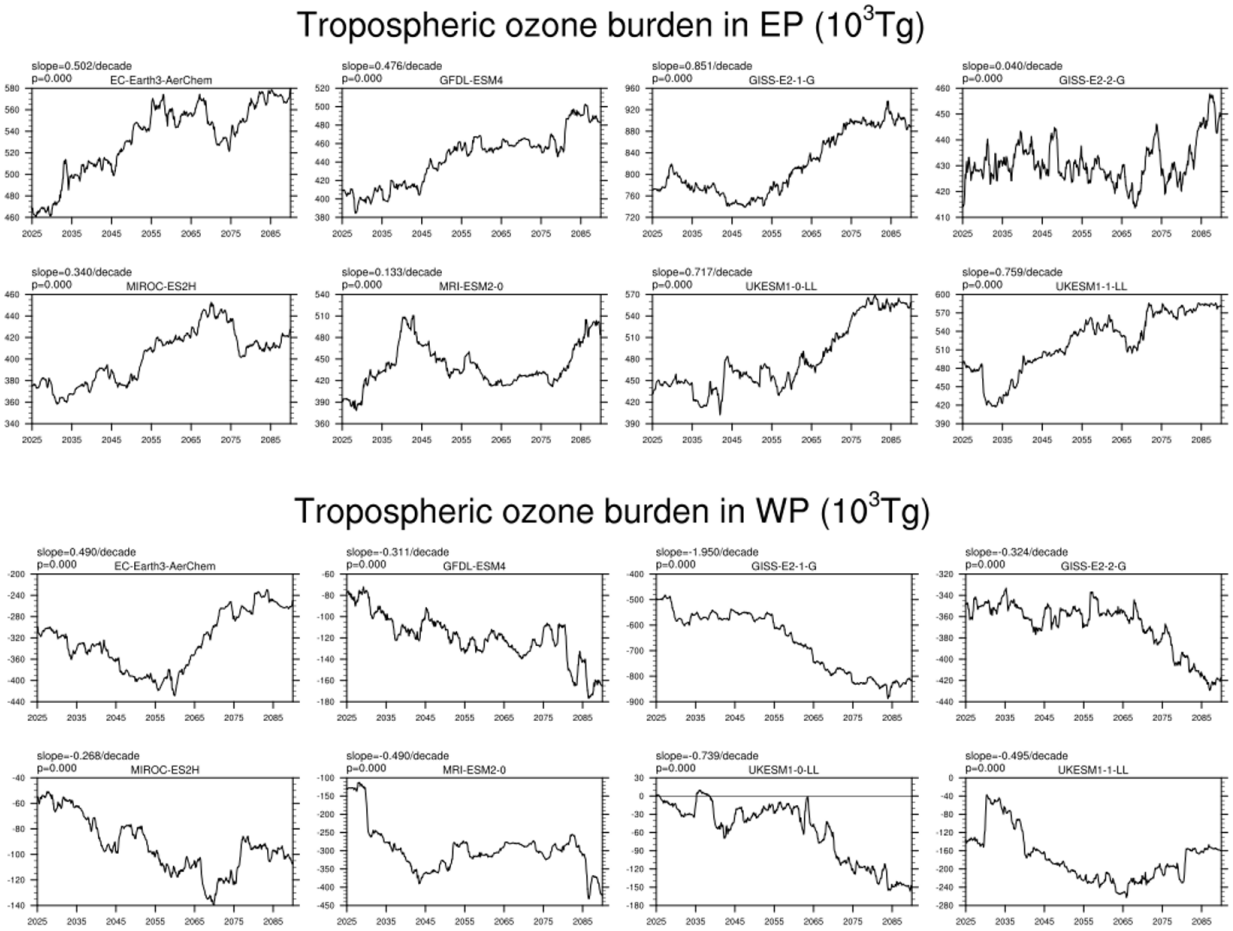

Fig.S3. Same as Fig. S2, but for the East Pacific (EP) and West Pacific (WP) domains.

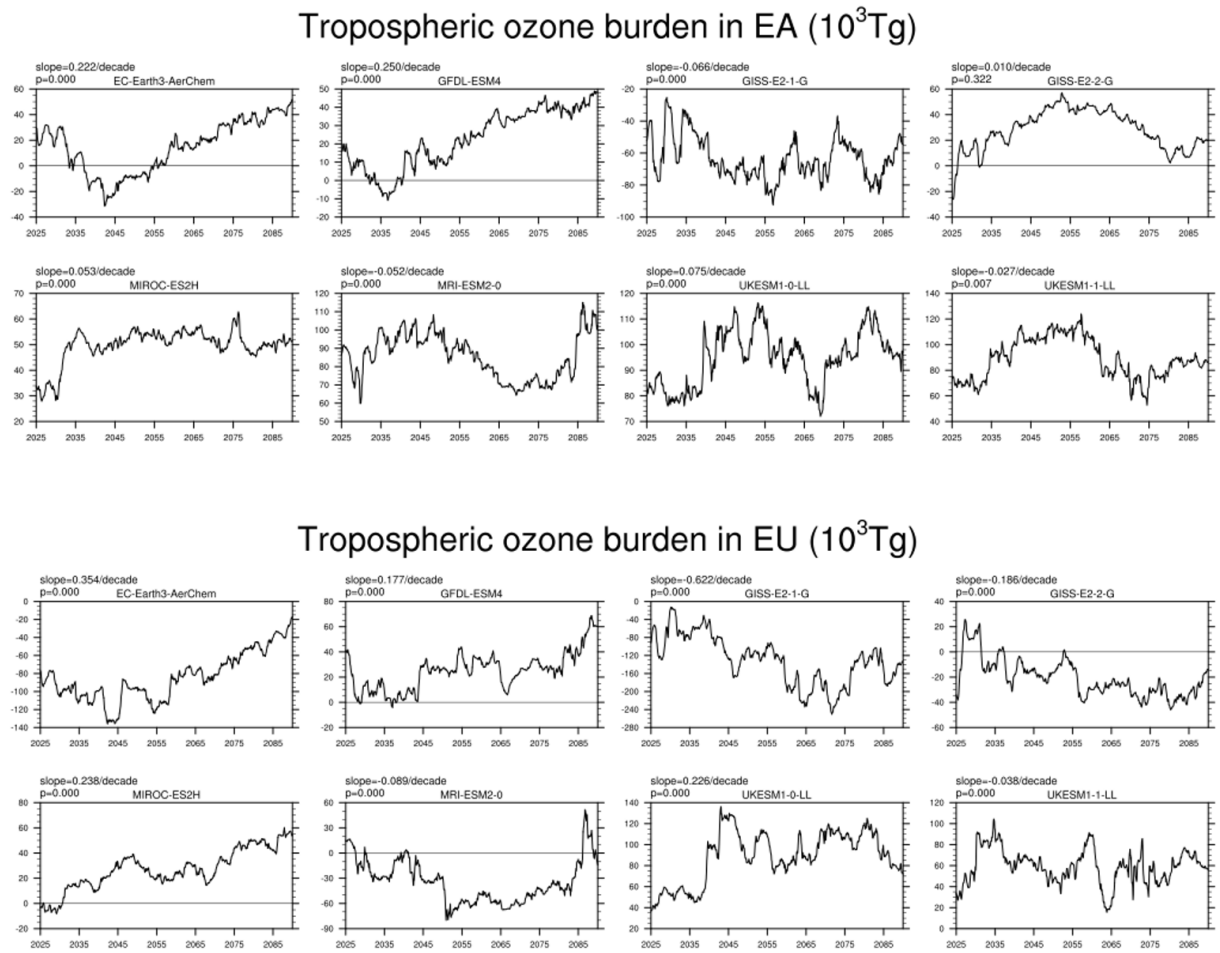

Fig.S4. Same as Fig. S2, but for the East Asia (EA) and Europe (EU) domains.

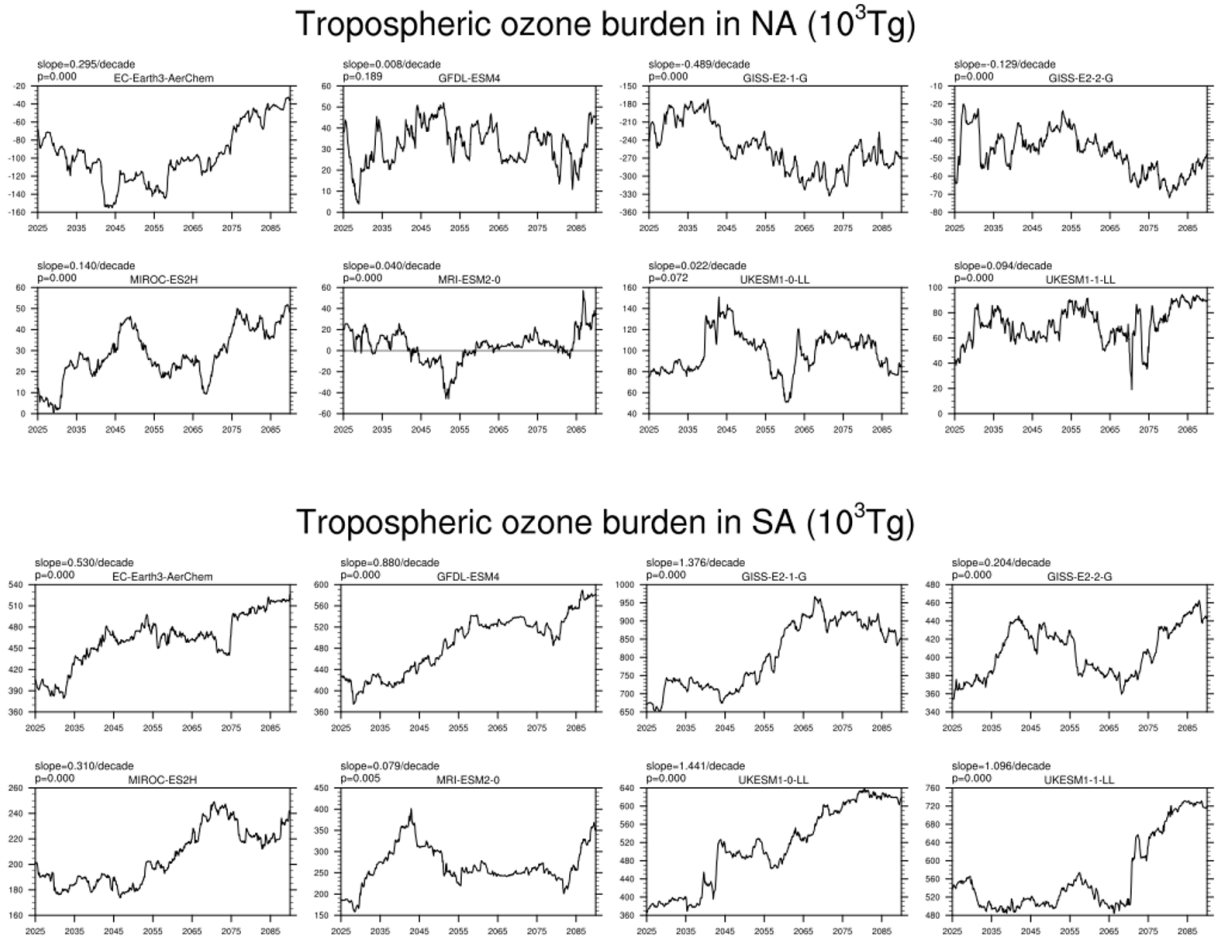

Fig.S5. Same as Fig. S2, but for the North America(NA) and South America (SA) domains.

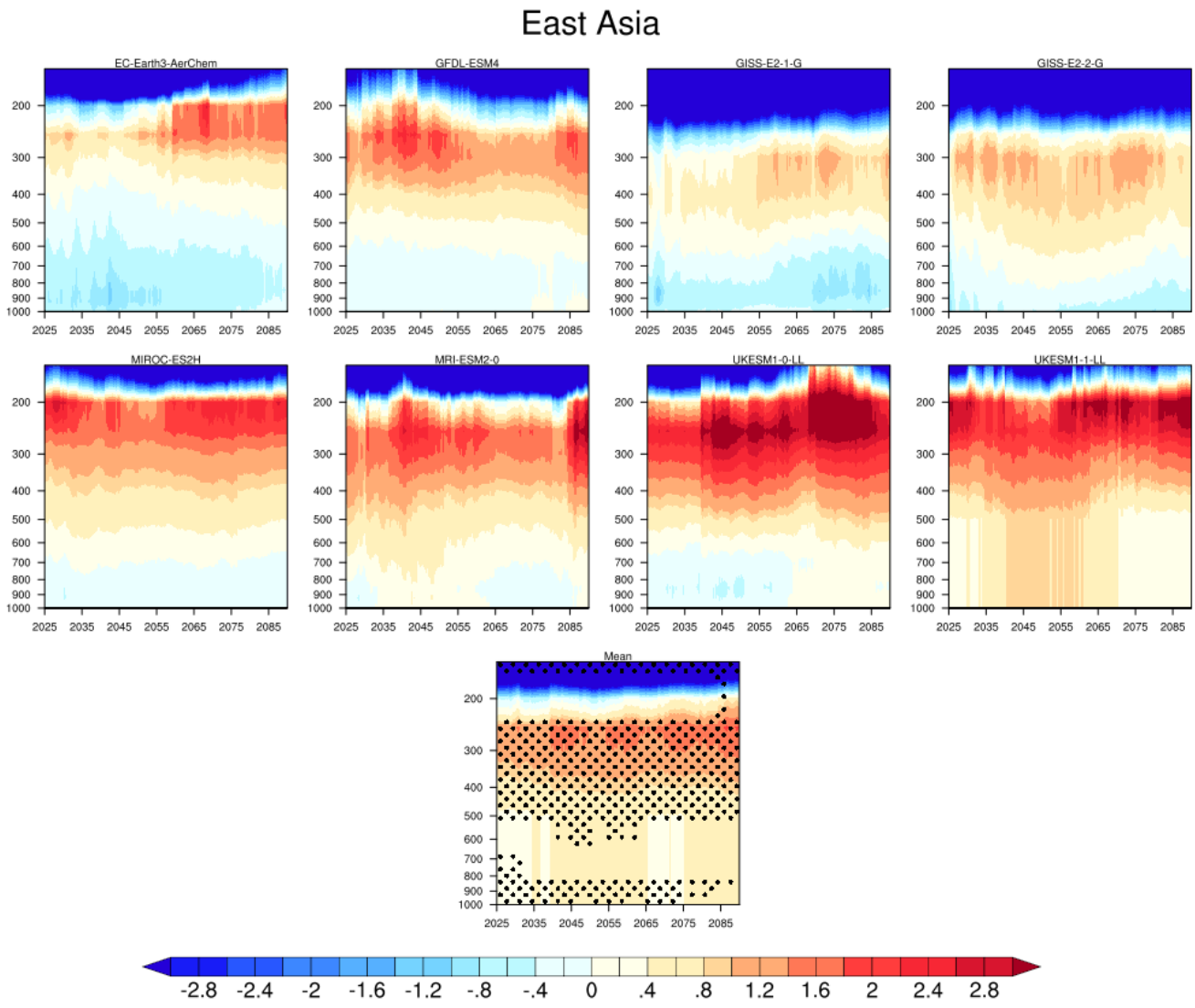

Fig.S6. Vertical structure of time-evolving regression coefficients between the La Niña index and ozone concentration (ppbv) over East Asia (EA), based on a 21-year running regression from 2015 to 2100. Dots indicate grid points where at least 5 models agree on the sign of the regression coefficient.

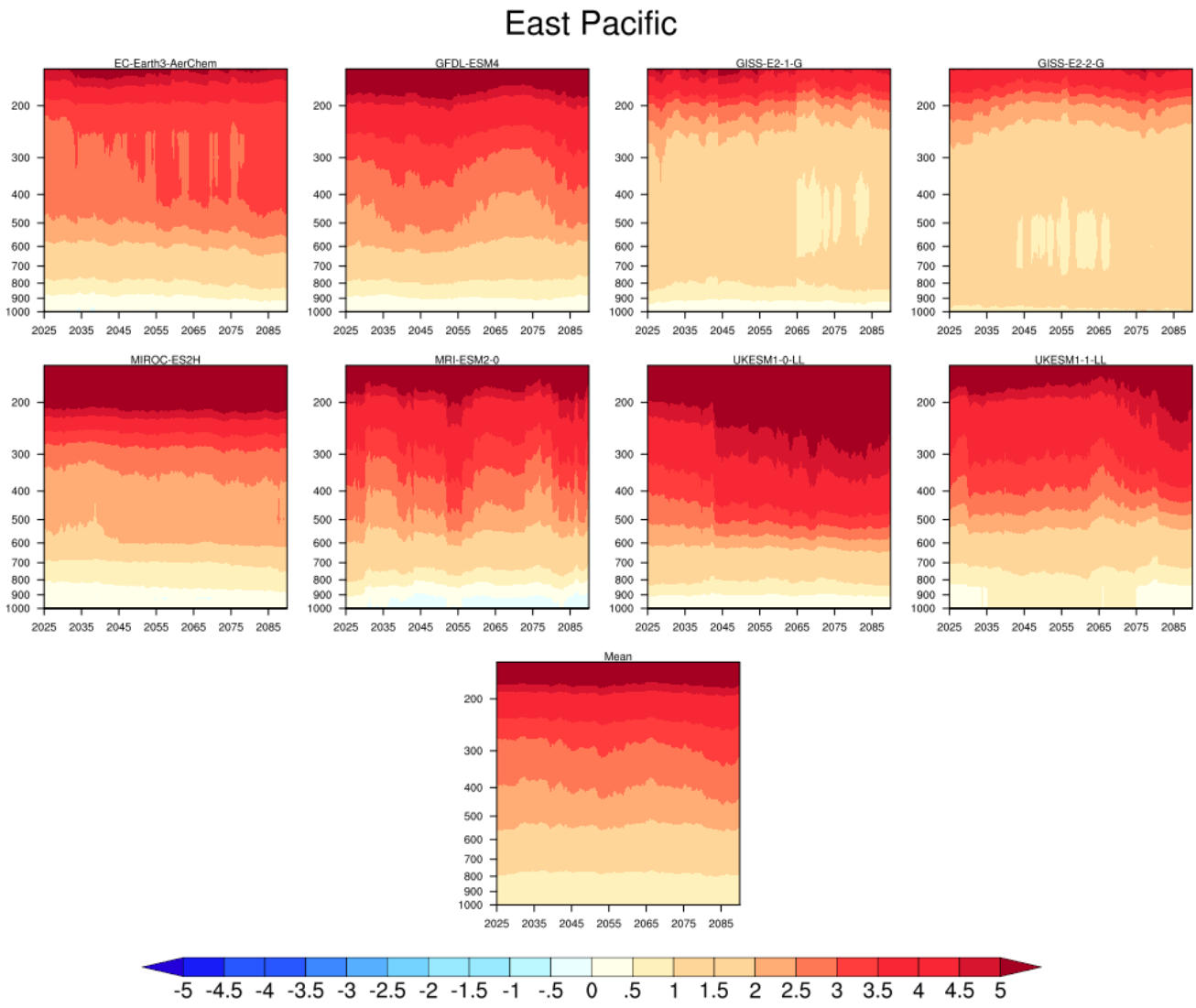

Fig.S7. Same as Fig. S6, but for the East Pacific domains.

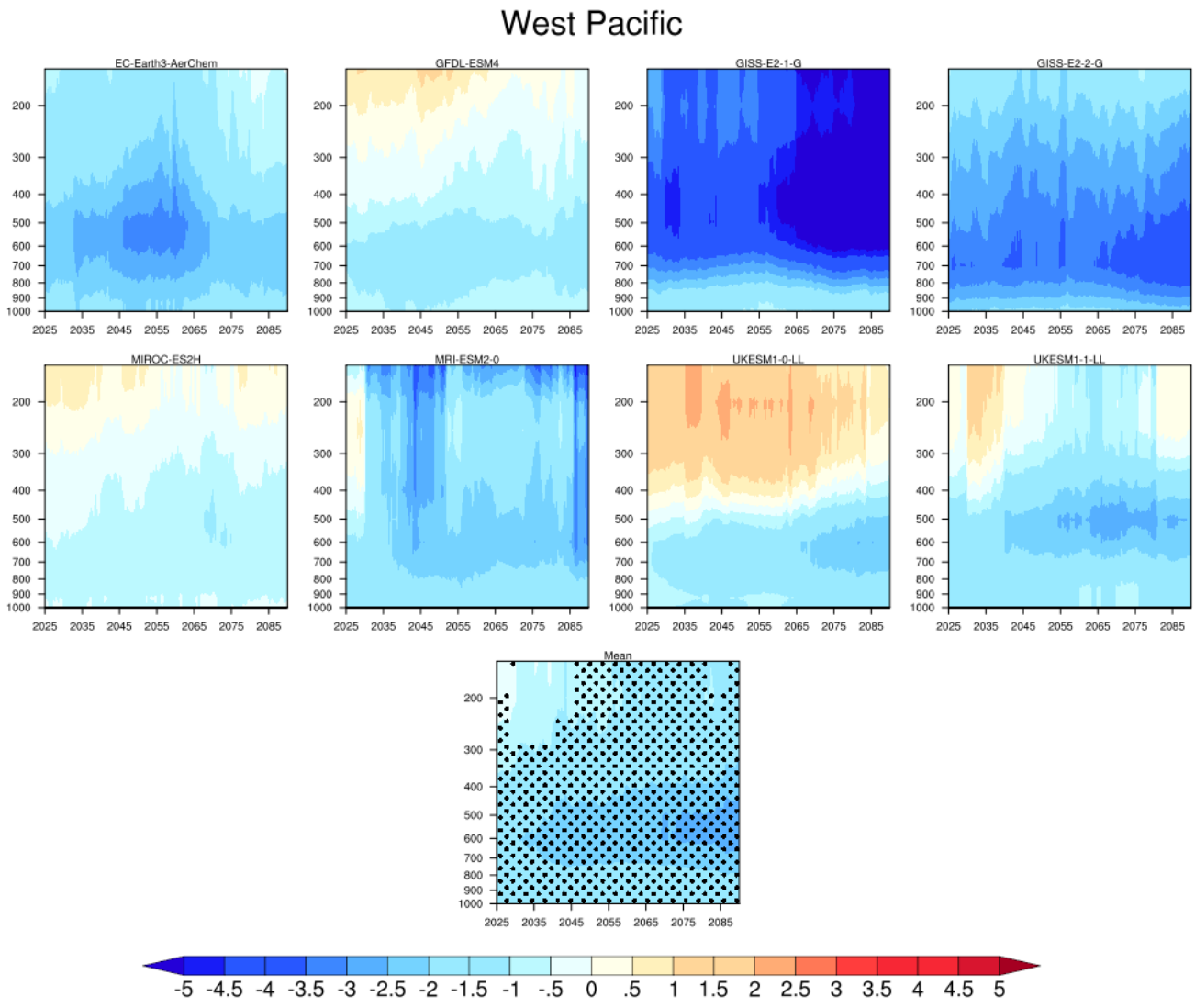

Fig.S8. Same as Fig. S6, but for the West Pacific domains.

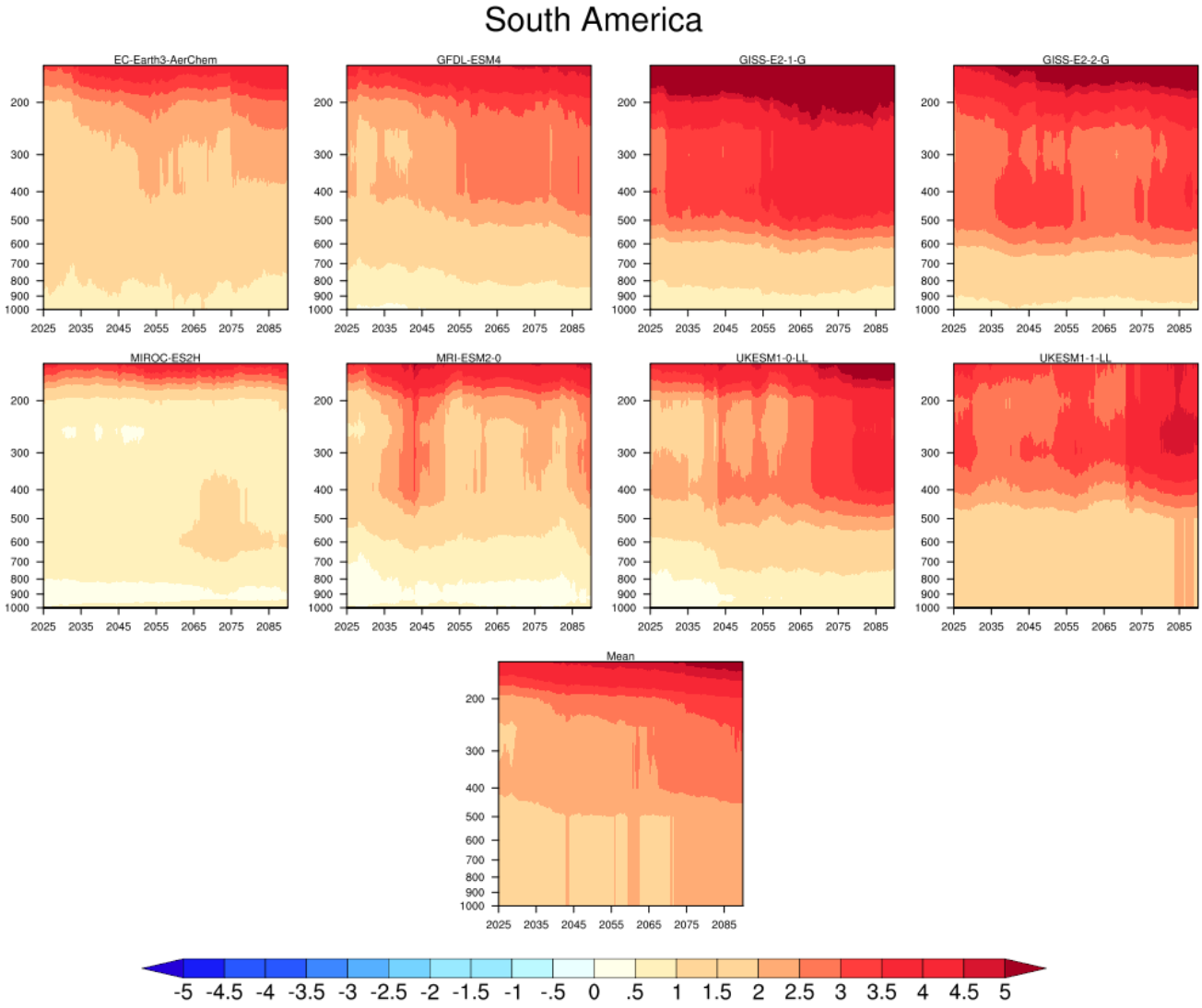

Fig.S9. Same as Fig. S6, but for the South America domains.

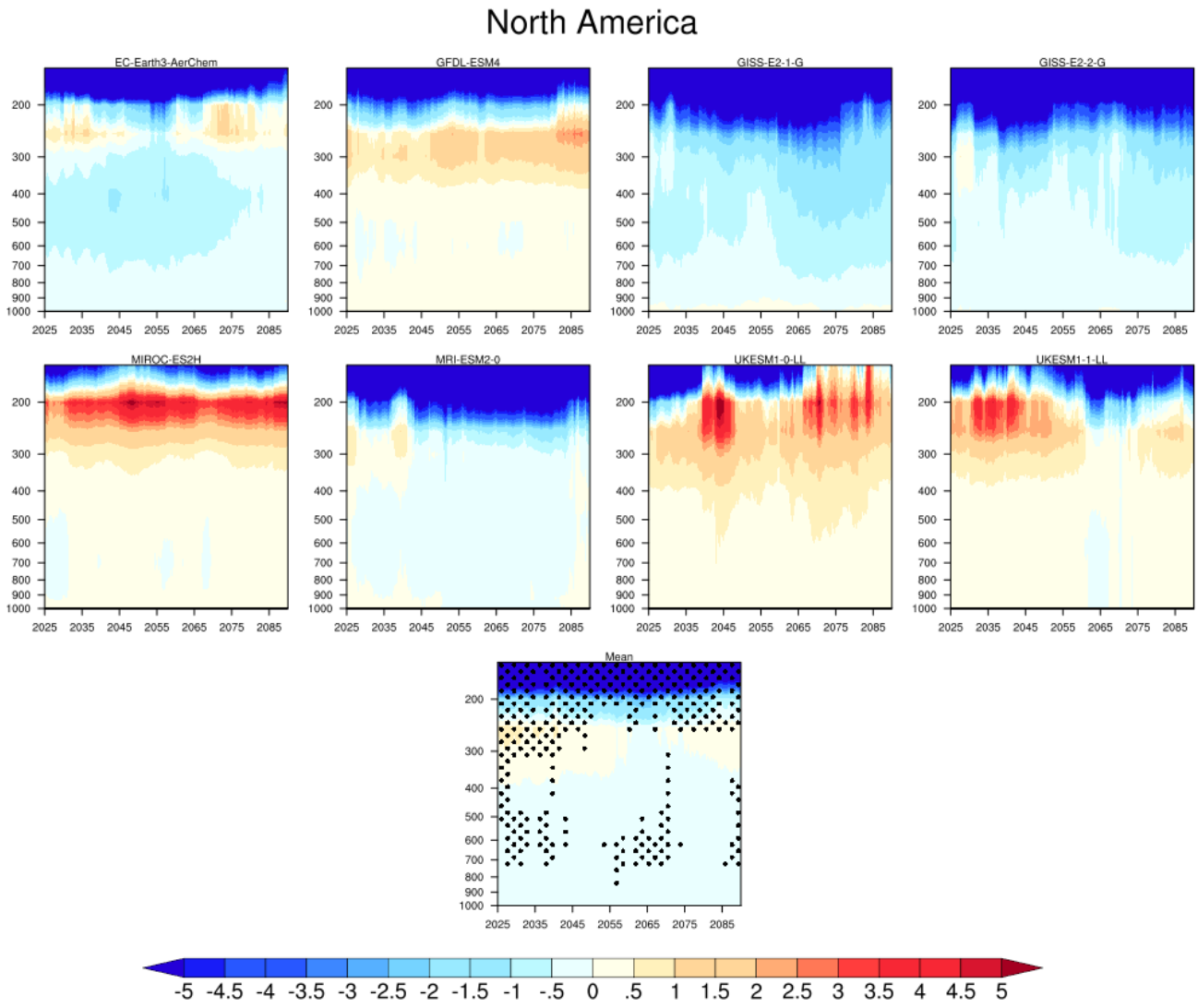

Fig.S10. Same as Fig. S6, but for the North America domains.

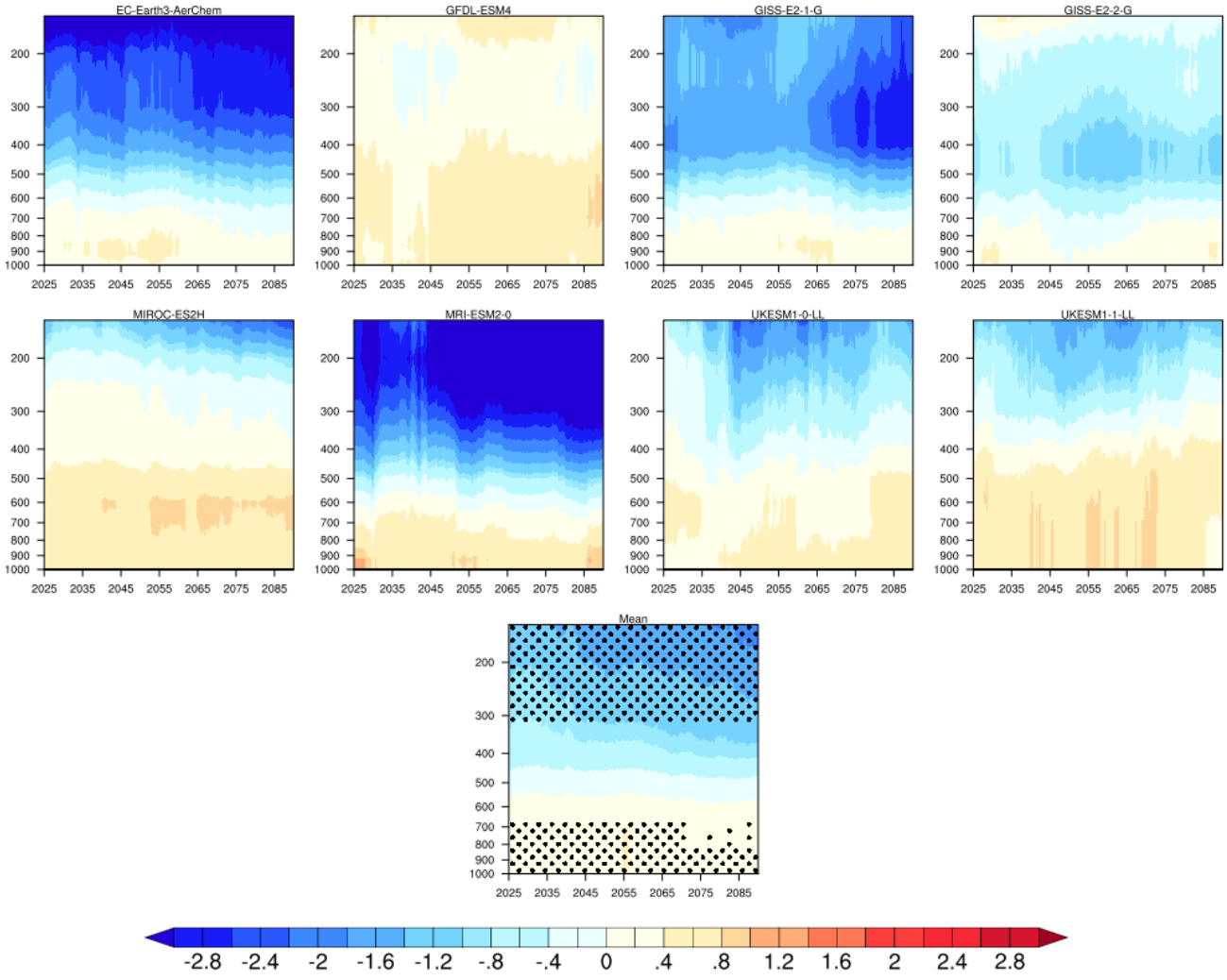

Fig.S11. Same as Fig. S6, but for the Inian Ocean domains.

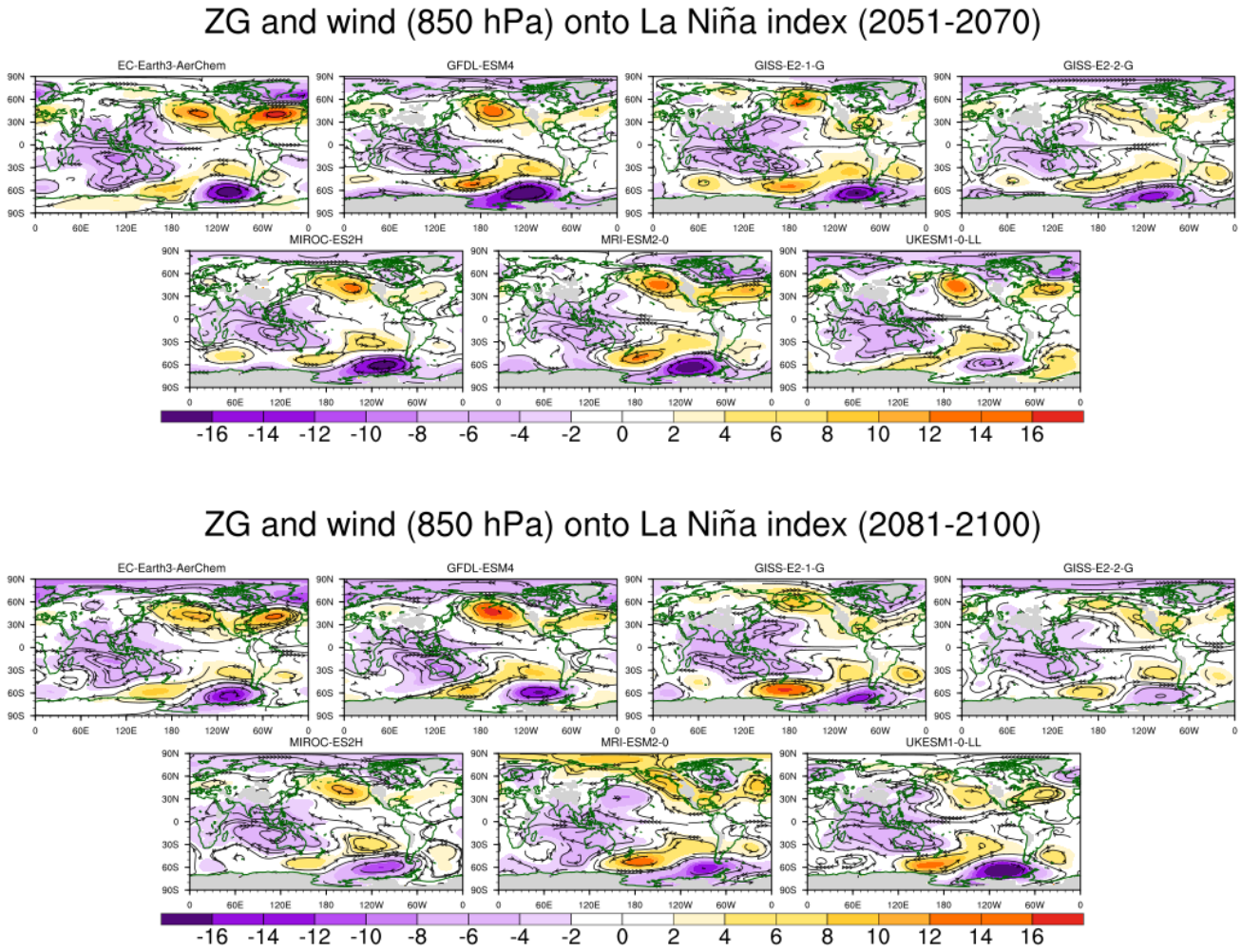

Fig.S12. Regression coefficients of geopotential height (contours) and wind fields (streamlines) with respect to the La Niña index for the periods 2051–2070 and 2081–2100. Contours represent the regression of geopotential height (m), and streamlines indicate the direction and pattern of wind anomalies (u, v). Green lines denote continental boundaries for geographical reference.