

Supporting information for:

Multidecadal variability of the ENSO early-winter teleconnection to the North Atlantic in CMIP6 models: robustness and mechanisms

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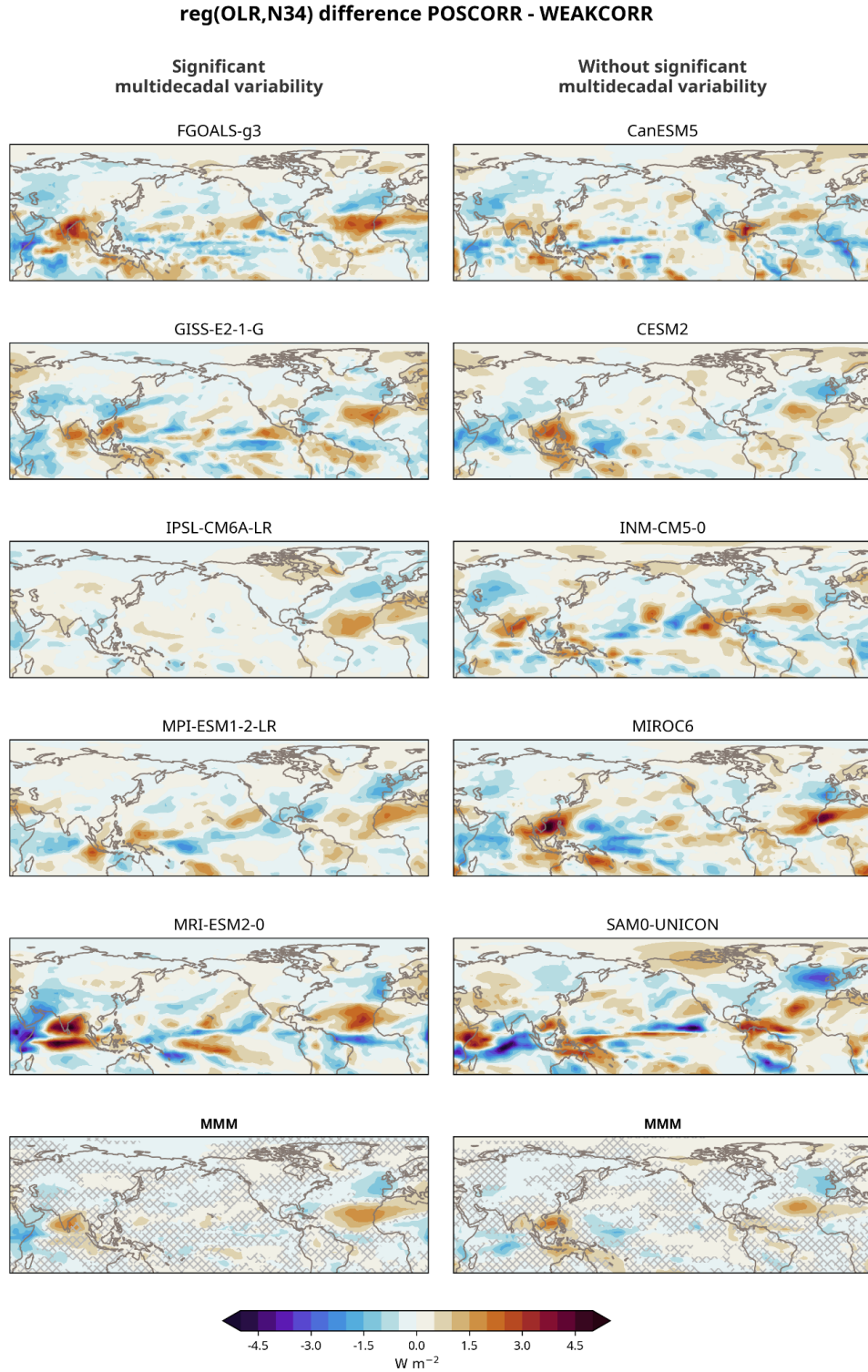


Fig. S1: Difference between the linear regression maps of top-of-atmosphere outgoing longwave radiation flux (OLR; W m^{-2}) anomalies onto N34 in POSCORR and WEAKCORR (computed as the regression map of POSCORR minus that of WEAKCORR) for the models with (top row) and without (bottom row) significant multidecadal variability of the teleconnection. The last column displays the corresponding multimodel mean, with the unhatched regions representing where at least 75% of the models agree on the sign of the difference.

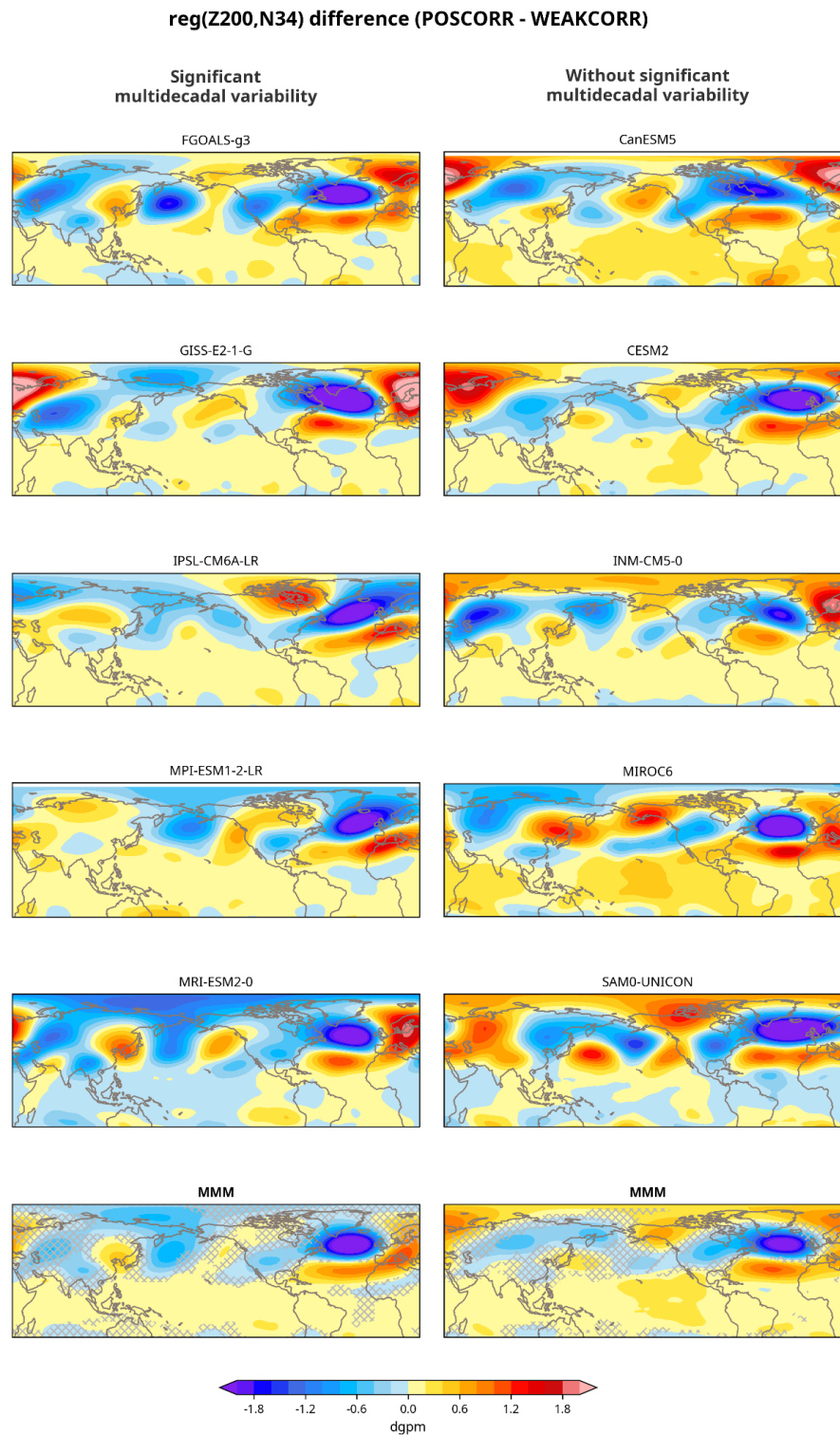


Fig. S2: Difference between the linear regression maps of 200 hPa geopotential height (Z200; dgpm) anomalies onto N34 in POSCORR and WEAKCORR (computed as the regression map of POSCORR minus that of WEAKCORR) for the models with (top row) and without (bottom row) significant multidecadal variability of the teleconnection. The last column displays the corresponding multimodel mean, with the unhatched regions representing where at least 75% of the models agree on the sign of the difference.

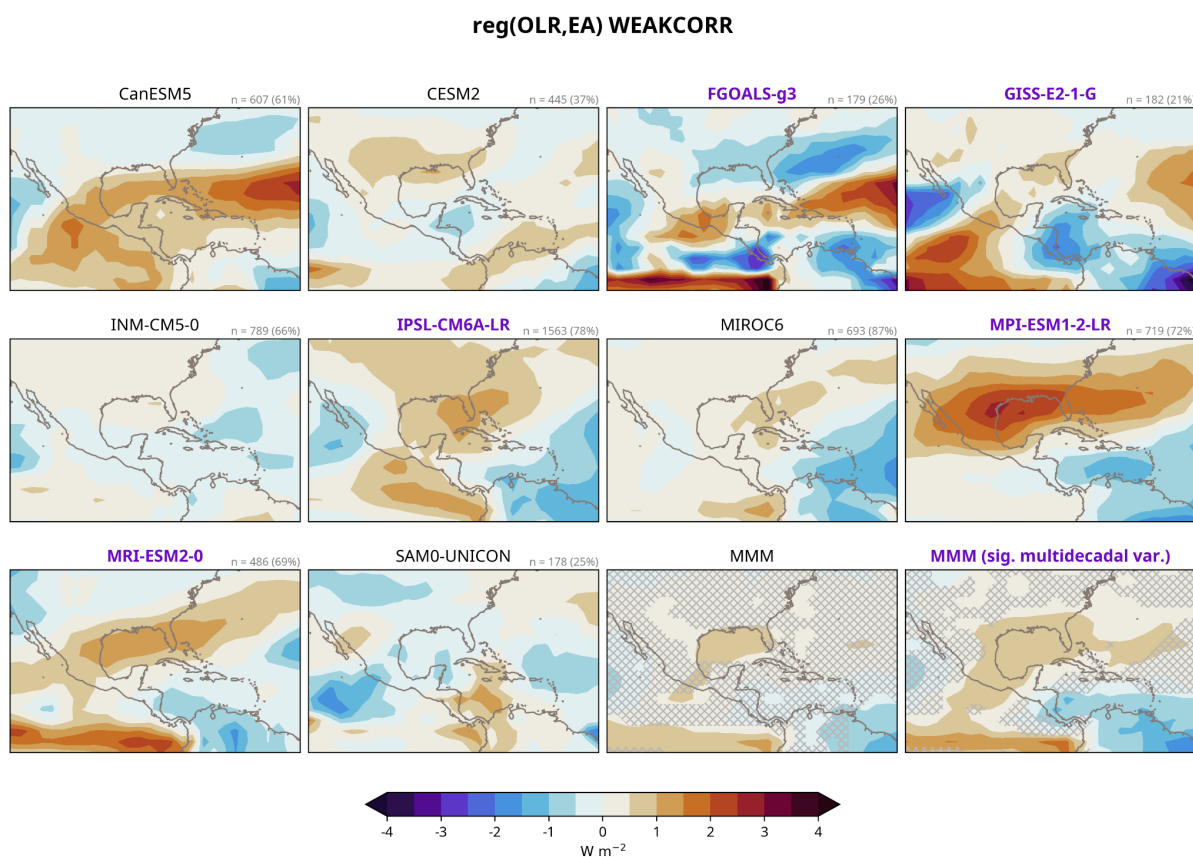


Fig. S3: Linear regression map of top-of-atmosphere outgoing longwave radiation flux (OLR; W m^{-2}) anomalies onto N34 in the WEAKCORR periods for the different models used in the analysis. The models with significant multidecadal variability are highlighted. The last two subplots show the multimodel mean and the multimodel mean of the models exhibiting significant multidecadal variability, respectively. The unhatched regions in the multimodel means represent where at least 75% of the models agree on the sign.

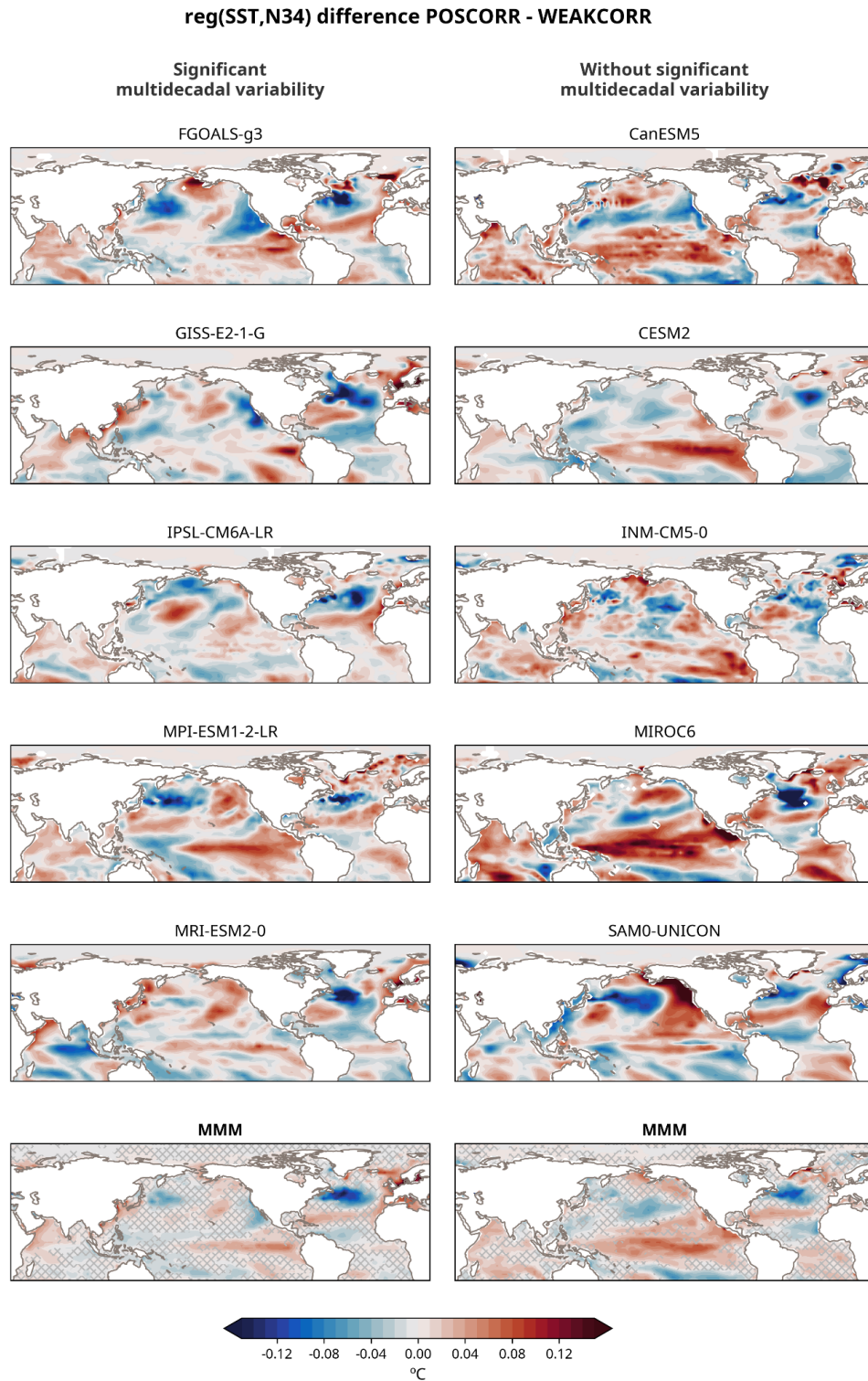


Fig. S4: Difference between the linear regression maps of sea surface temperature (SST; °C) anomalies onto N34 in POSCORR and WEAKCORR (computed as the regression map of POSCORR minus that of WEAKCORR) for the models with (top row) and without (bottom row) significant multidecadal variability of the teleconnection. The last column displays the corresponding multimodel mean, with the unhatched regions representing where at least 75% of the models agree on the sign of the difference.

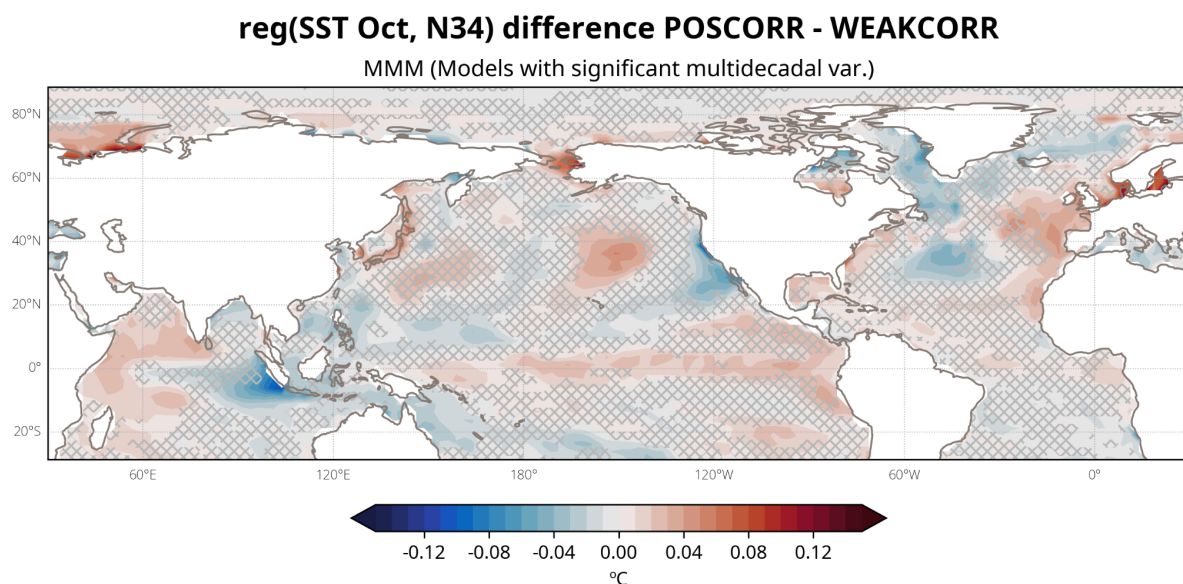


Fig. S5: Difference between the linear regression maps of October sea surface temperature (SST; °C) anomalies onto N34 in POSCORR and WEAKCORR (computed as the regression map of POSCORR minus that of WEAKCORR) for the multimodel mean of the models exhibiting significant multidecadal variability. The unhatched areas represent where at least 75% of the models agree on the sign.

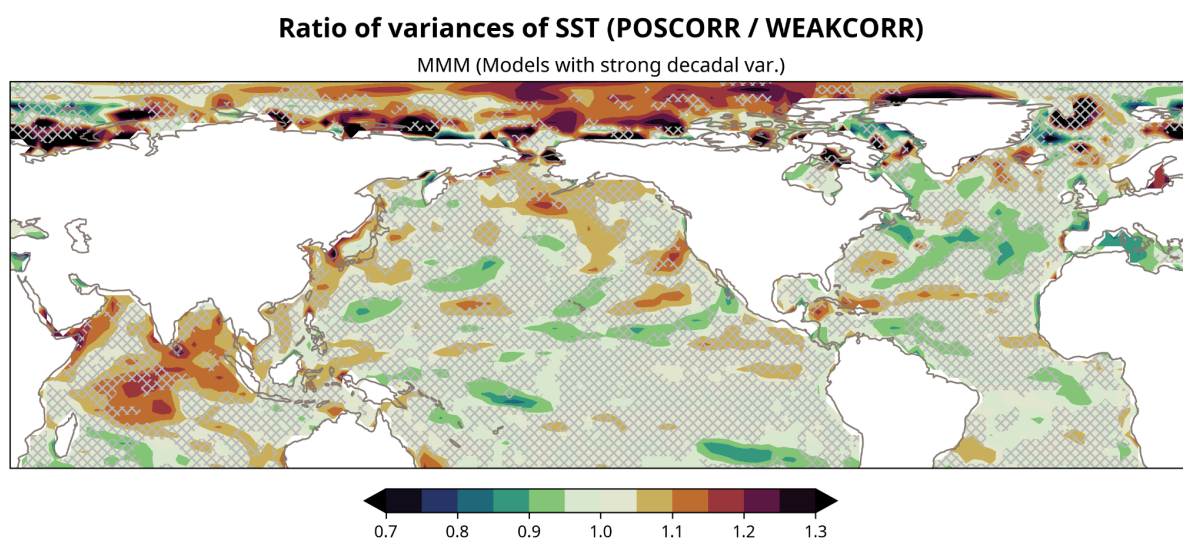


Fig. S6: Ratio of variances of sea surface temperature (SST) between POSCORR and WEAKCORR (computed as the SST variance in POSCORR divided by that in WEAKCORR), for the multimodel mean of the models with significant multidecadal variability. The unhatched regions represent where at least 75% of the models agree on an increase/decrease of variability.

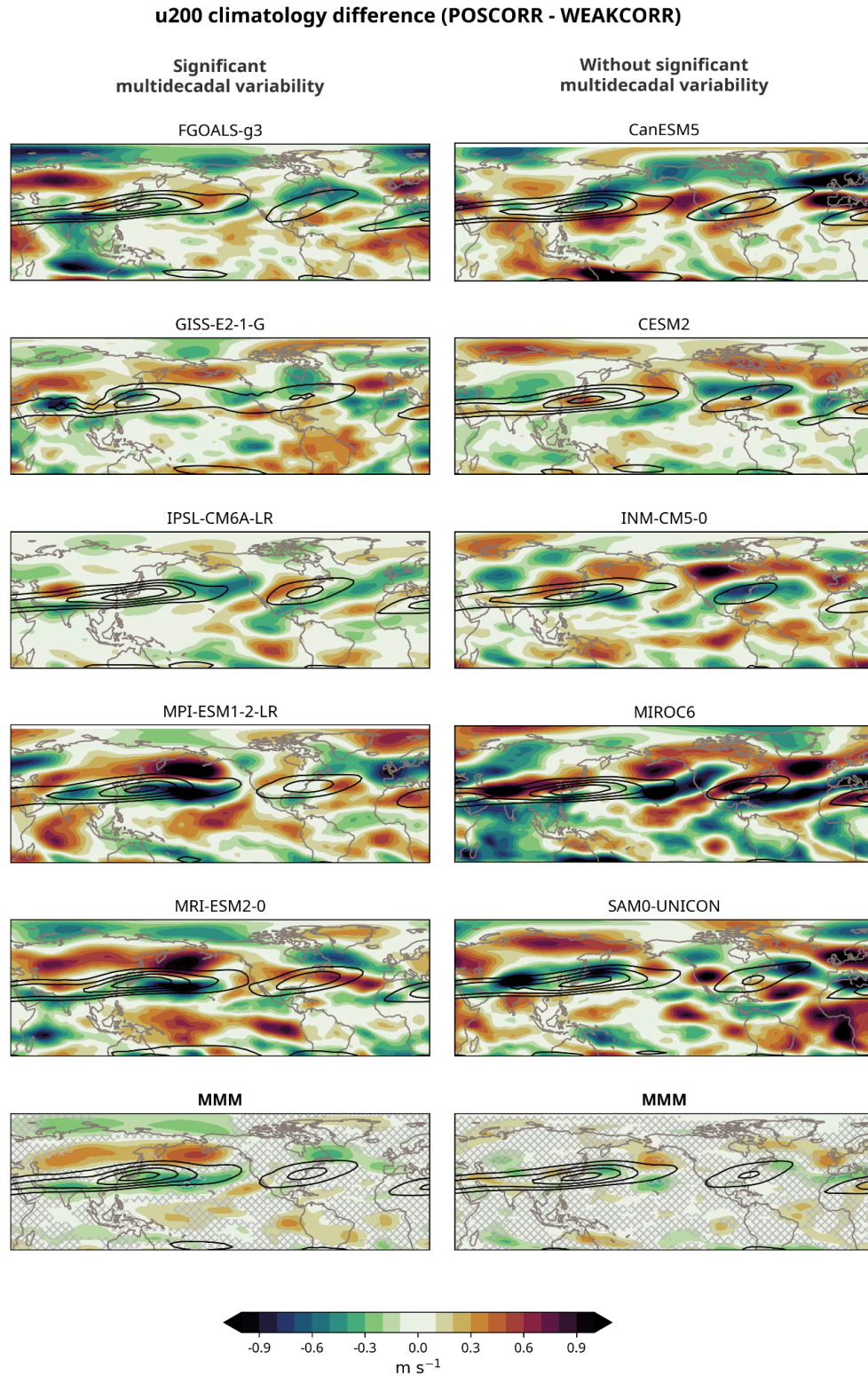


Fig. S7: Difference in the composite means (computed as POSCORR minus WEAKCORR) of 200 hPa zonal wind (u_{200} ; m s^{-1} ; shading) and u_{200} composite mean in WEAKCORR (contours) for the models with (top row) and without (bottom row) significant multidecadal variability of the teleconnection. Contour lines are drawn starting from 30 m/s and with a contour interval of 10 m/s. The last column displays the corresponding multimodel mean, with the unhatched regions representing where at least 75% of the models agree on the sign of the difference.

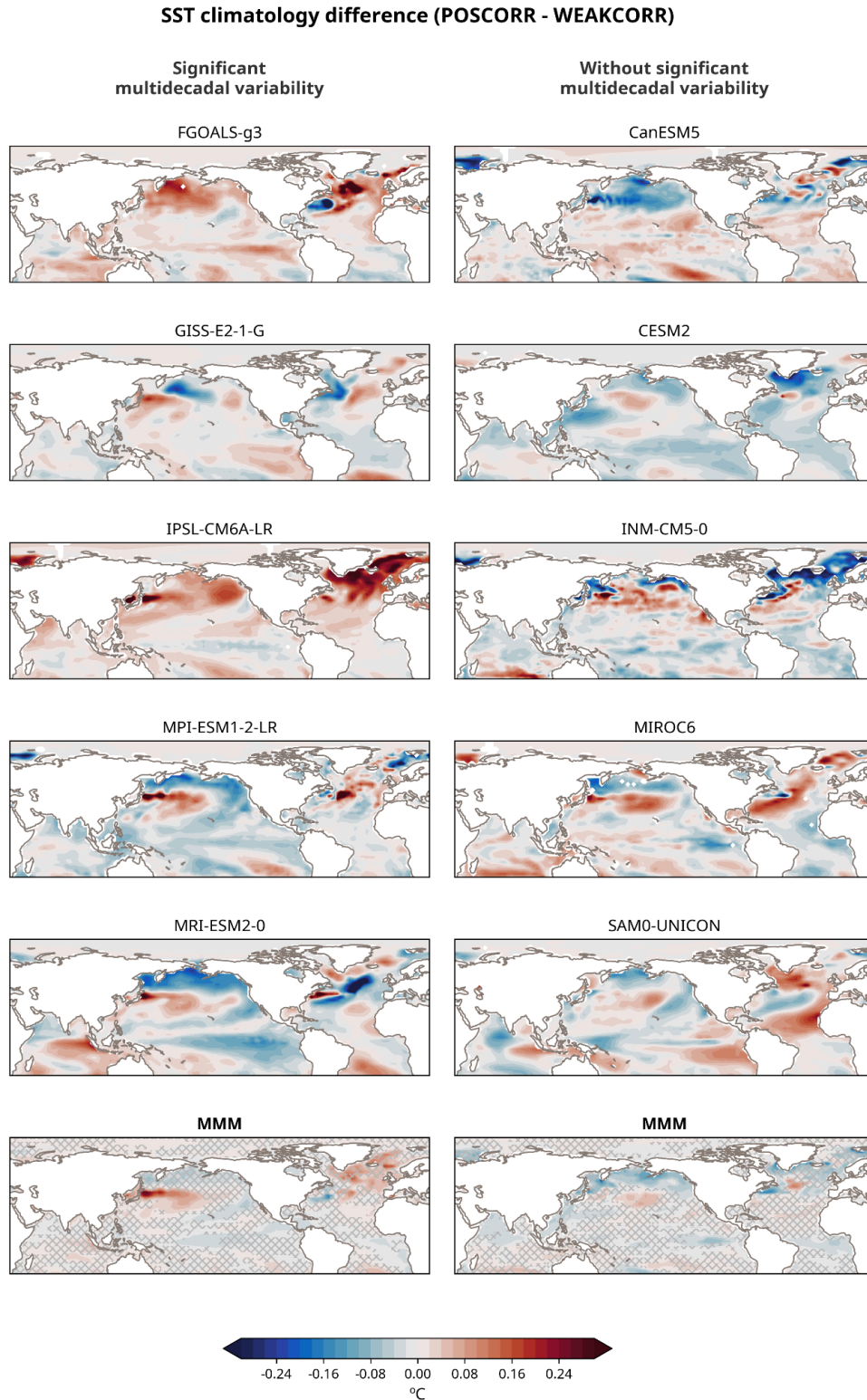


Fig. S8: Difference in the composite means (computed as POSCORR minus WEAKCORR) of sea-surface temperature (SST; °C) for the models with (top row) and without (bottom row) significant multidecadal variability of the teleconnection. The last column displays the corresponding multimodel mean, with the unhatched regions representing where at least 75% of the models agree on the sign of the difference.