

Time-variations of the climate feedback parameter λ are
associated with the Pacific Decadal Oscillation.
Supplementary information

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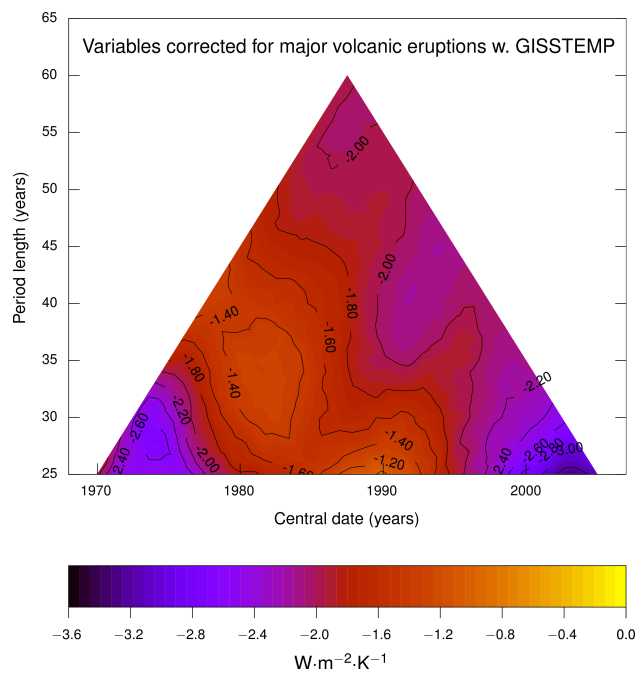


Fig. S1 : Same as Fig. 2b but with the GISS GMST dataset.

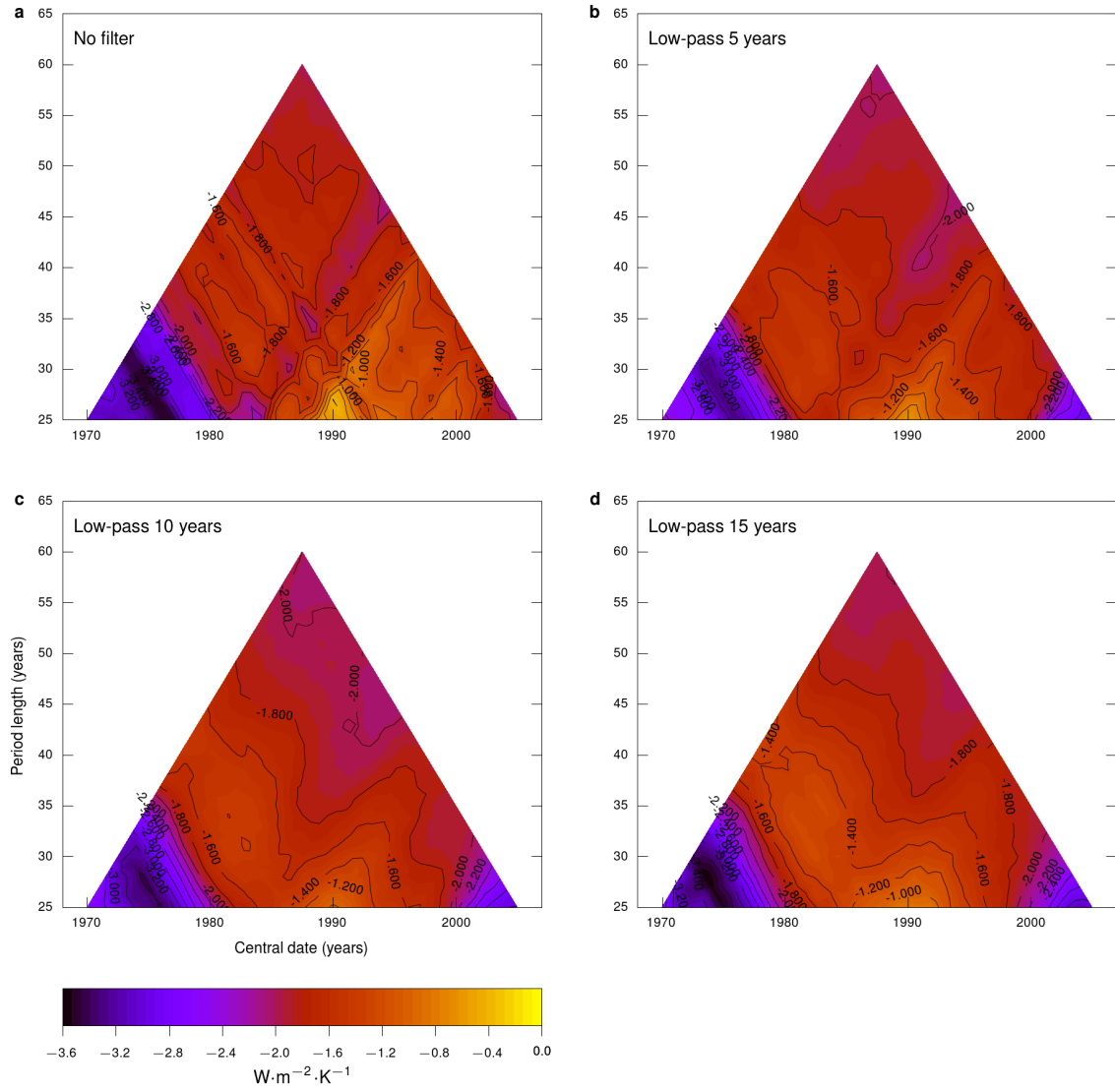


Fig. S2 : Same as Fig.1b but a) with no filtering of input data, and with a low pass filter and cutoff period at b) 5 yrs, c) 10yrs and d) 15yrs (i.e. d) is the same as fig1b).

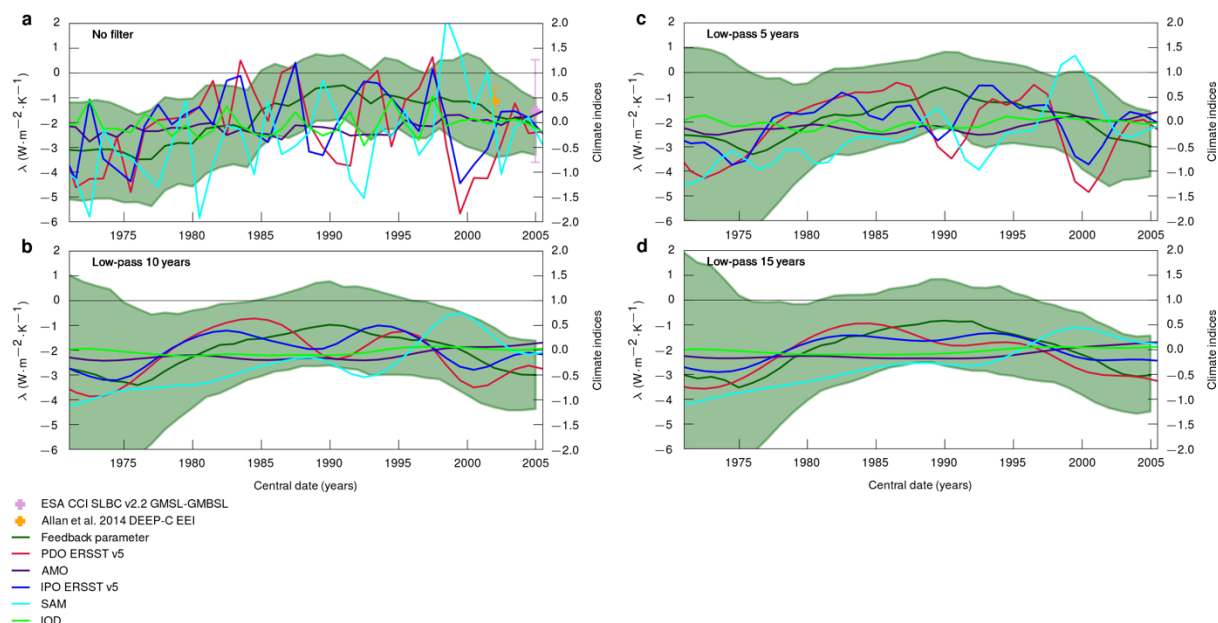


Fig. S3 : Same as Fig. 2b but a) with no filtering of input data, and with a low pass filter and cutoff period at b) 5 yrs, c) 10yrs and d) 15yrs (i.e. d) is the same as fig1b.

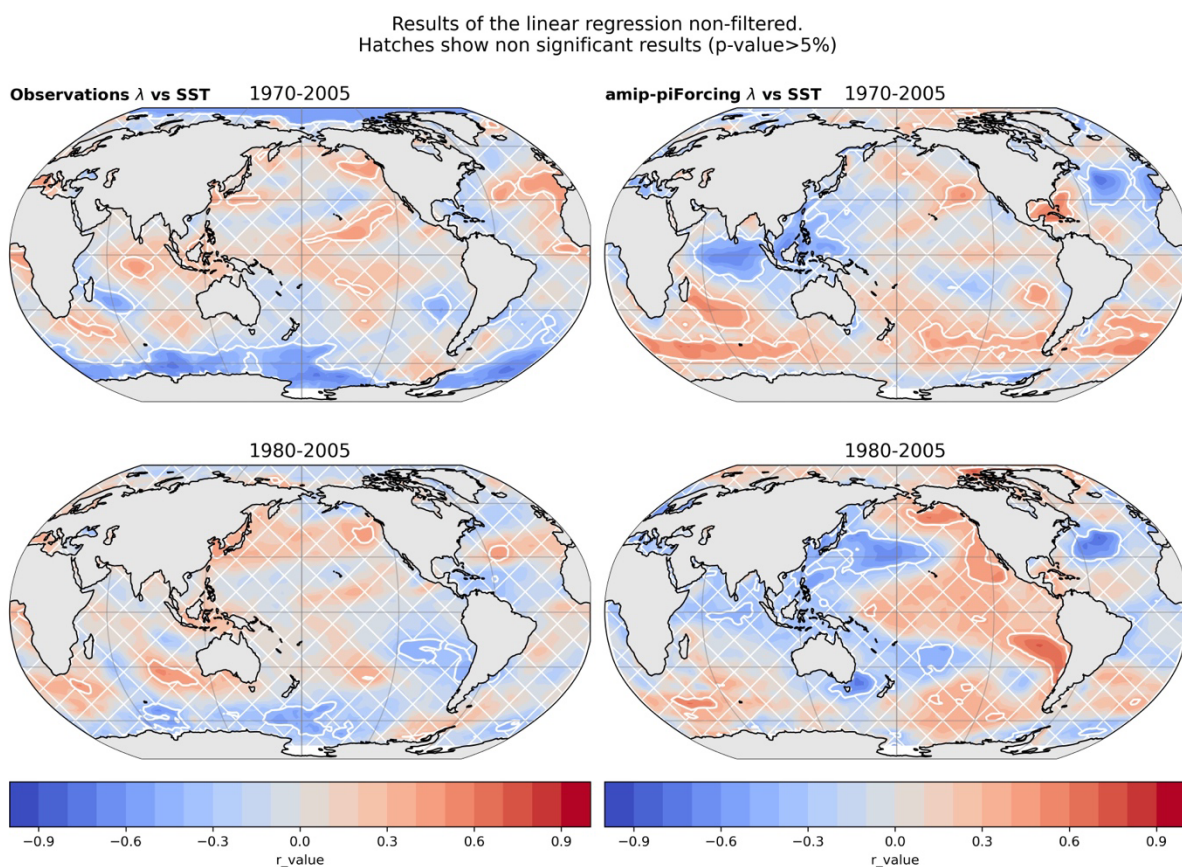


Fig. S4 : Same as Fig. 4 but with no filtering of input data. Here we used the amip pi-forcing simulation of the HADGEM3 model

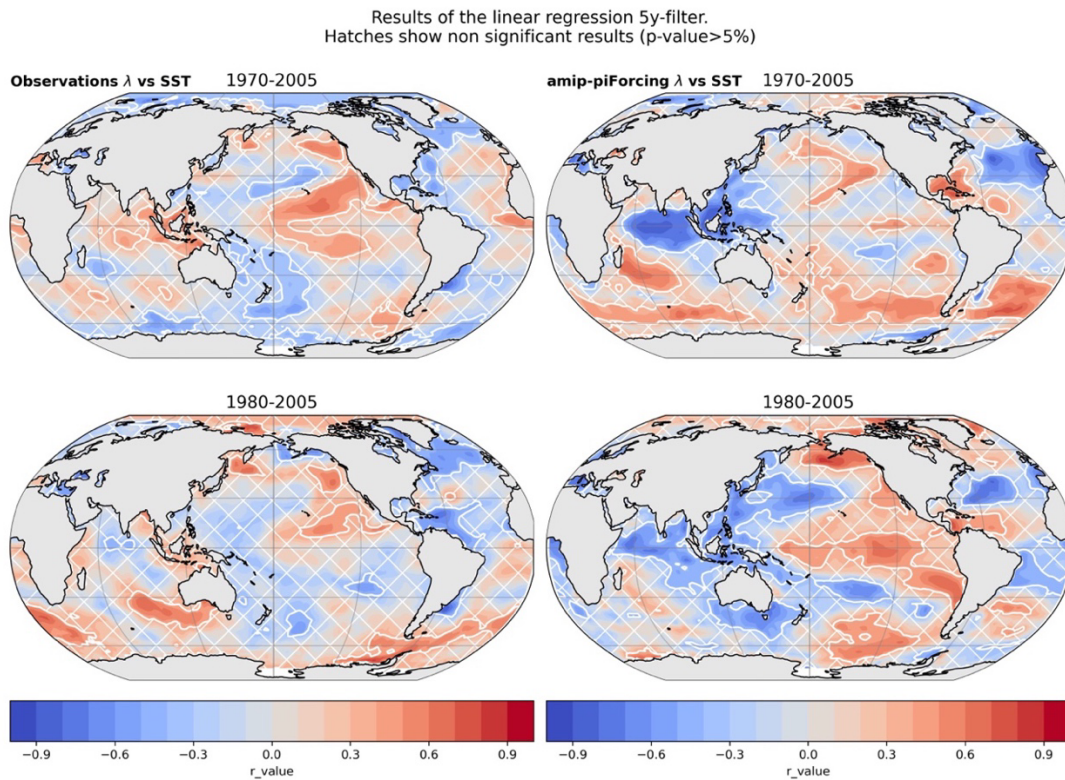


Fig. S5 : Same as Fig. 4 but with a low pass filter and cutoff period at 5 yrs. Here we used the amip pi-forcing simulation of the HADGEM3 model

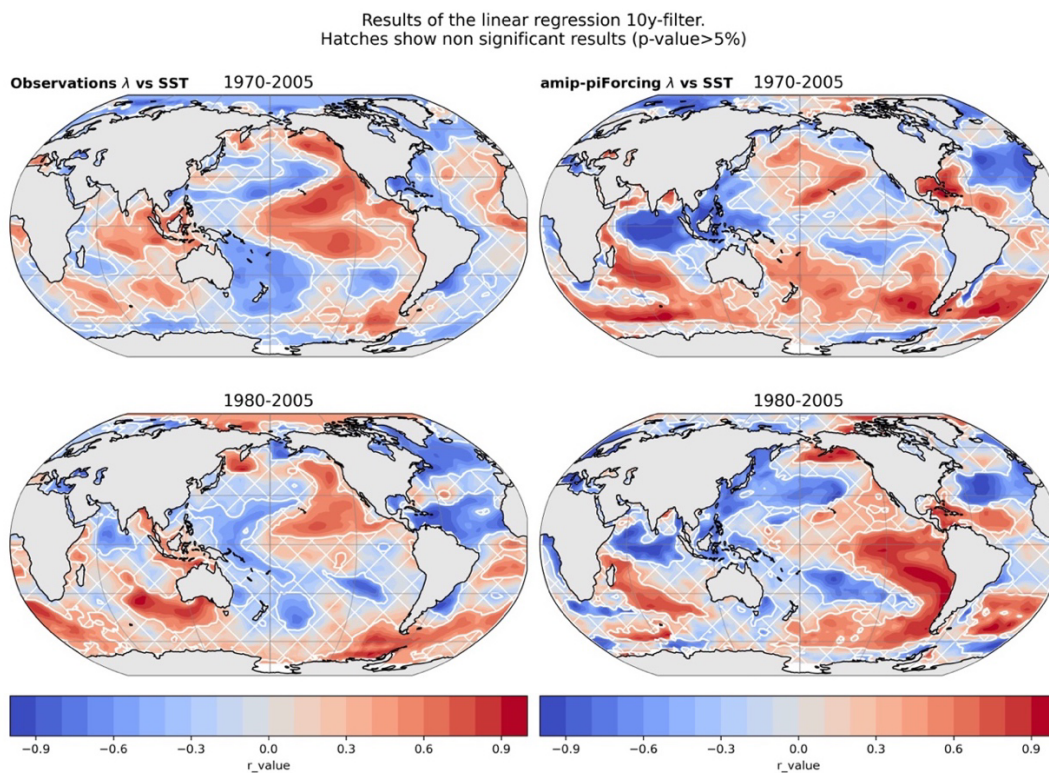


Fig. S6 : Same as Fig. 4 but with a low pass filter and cutoff period at 10 yrs. Here we used the amip pi-forcing simulation of the HADGEM3 model

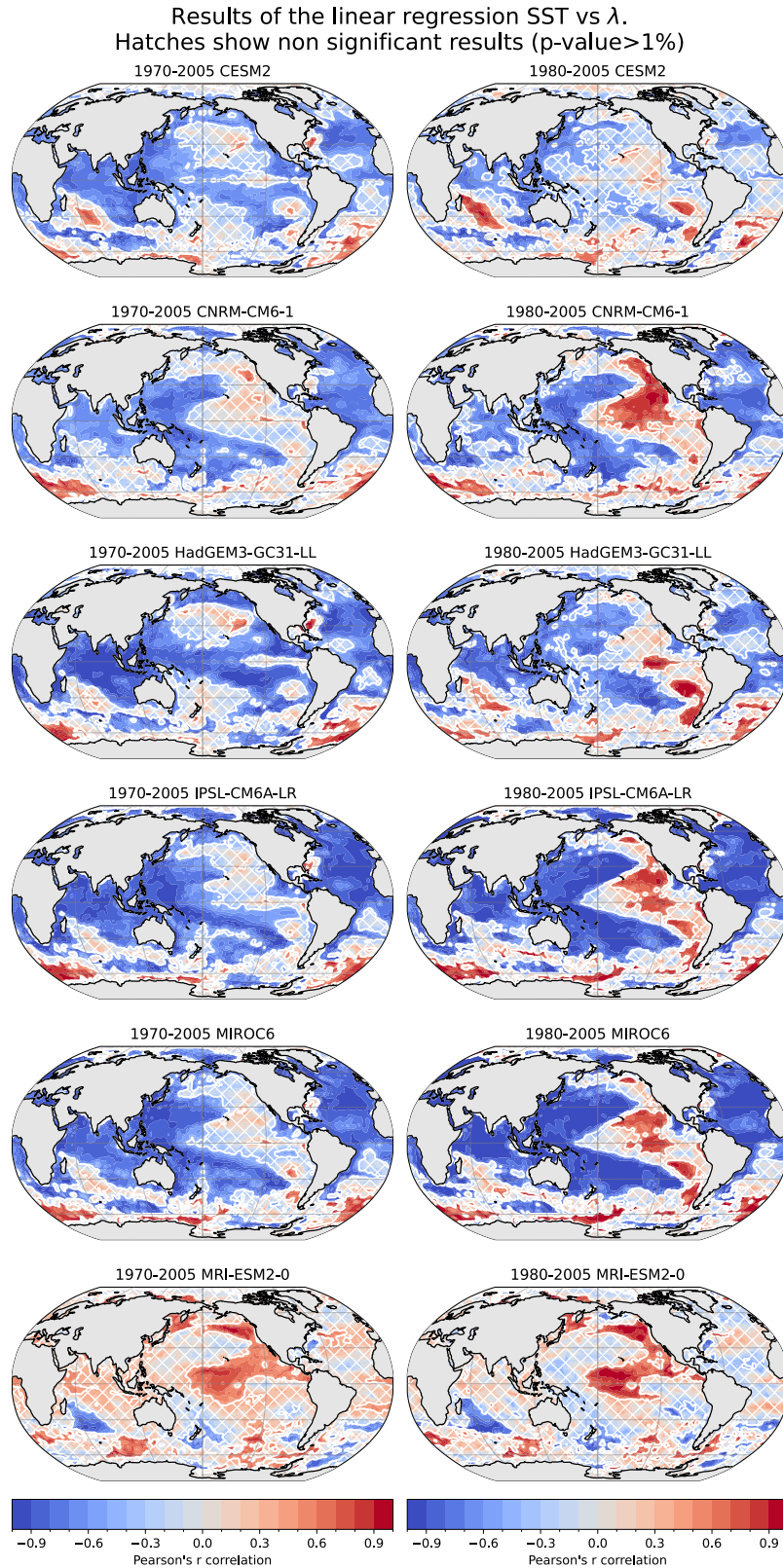


Fig. S7 : Same as Fig. 4 middle panel but with the amip piforcing experiment of each individual model

Results of the linear regression CLT vs λ .
Hatches show non significant results (p-value>1%)

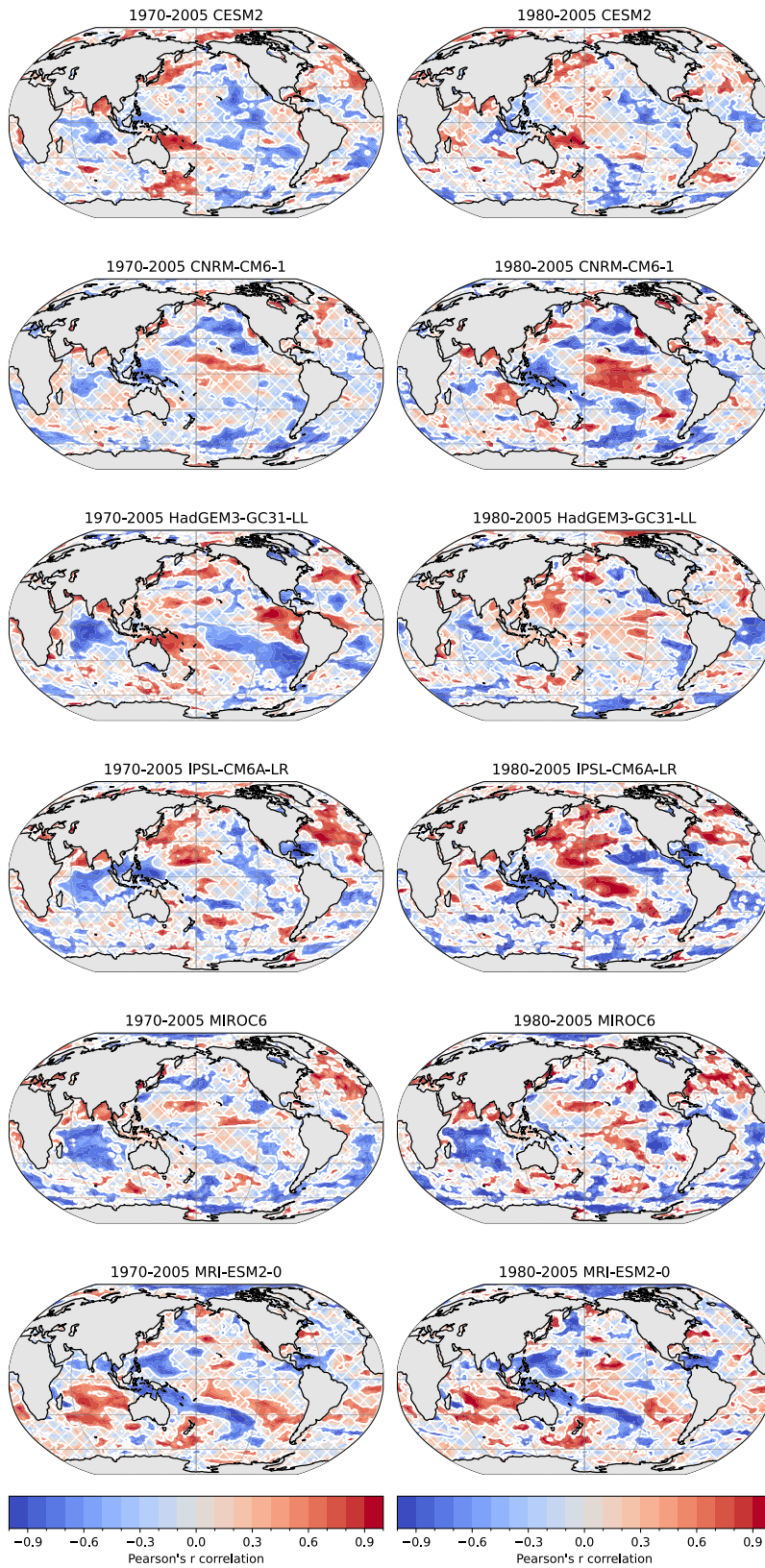


Fig. S8 : Same as Fig. 4 bottom panel but with the amip piforcing experiment of each individual model

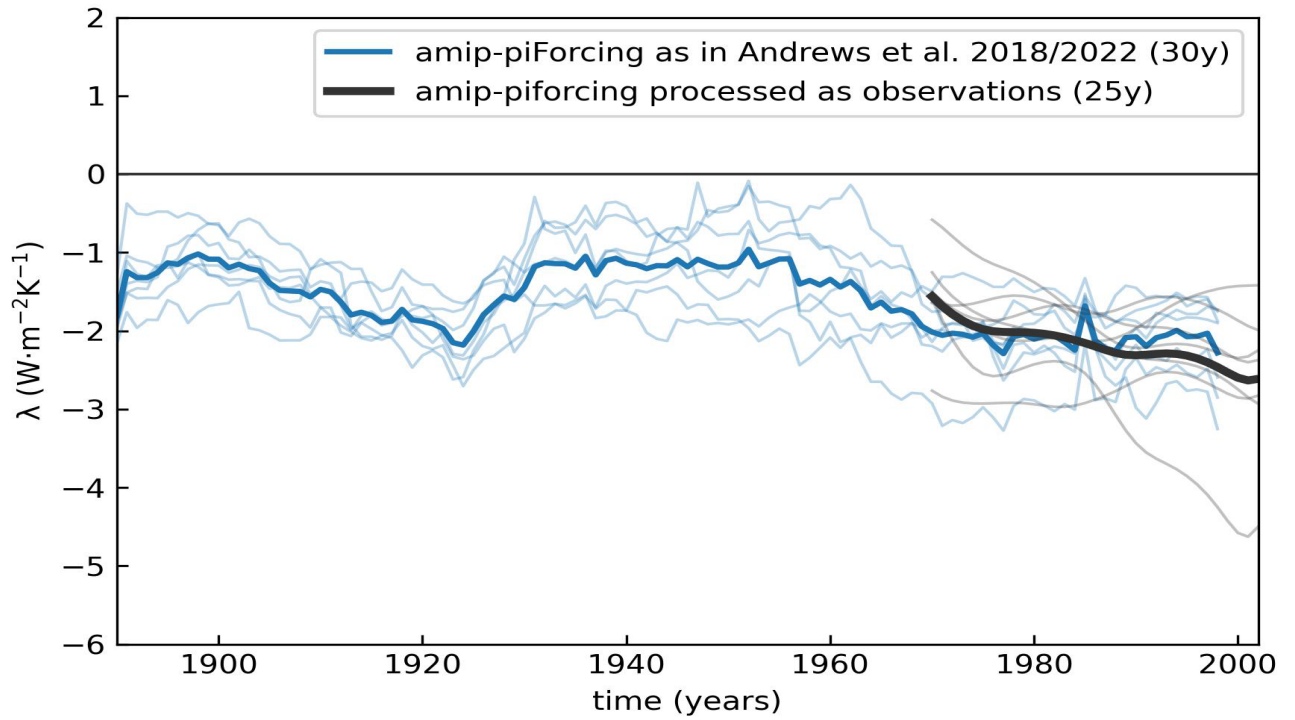


Fig S9 : global climate feedback parameter $\tilde{\lambda}$ estimated by Andrews et al. (2022) on successive 30 year windows (blue lines) and estimated in this study on 25 yr windows using low pass filtered (cut off period of 15 yrs) observations of the forcing, the surface temperature and the planetary heat uptake (grey lines)

climate mode index	PDO	IPO	SAM	IOD	AMO
Correlation with λ and p value. No filtering	Cor : -0.26 Pv : 0.25	Cor : 0.04 Pv : 0.85	Cor : 0.35 Pv : 0.10	Cor : 0.02 Pv : 0.90	Cor : 0.21 Pv : 0.25
Correlation with λ and p value. 5yr filtering	Cor : 0.31 Pv : 0.11	Cor : 0.40 Pv : 0.02	Cor : 0.33 Pv : 0.08	Cor : -0.04 Pv : 0.81	Cor : -0.16 Pv : 0.36
Correlation with λ and p value. 10yr filtering	Cor : 0.59 Pv : 0.0003	Cor : 0.68 Pv : 0.0000	Cor : 0.32 Pv : 0.08	Cor : -0.12 Pv : 0.51	Cor : -0.22 Pv : 0.23
Correlation with λ and p value. 15yr filtering	Cor : 0.78 Pv : 0.0000	Cor : 0.89 Pv : 0.0000	Cor : -0.20 Pv : 0.33	Cor : -0.29 Pv : 0.10	Cor : -0.32 Pv : 0.07

Table S1 : correlation coefficients and p-values of the correlations between the climate feedback parameter time variations and different climate indices. Results are given for different filtering applied to the input data used for the estimate of λ and for the climate indices. Green values indicate correlations that are significant because the p-value is below 0.05.