

Supplemental Material for
Impact of Initial Conditions versus External Forcing in Decadal Climate
Predictions: A Sensitivity Experiment

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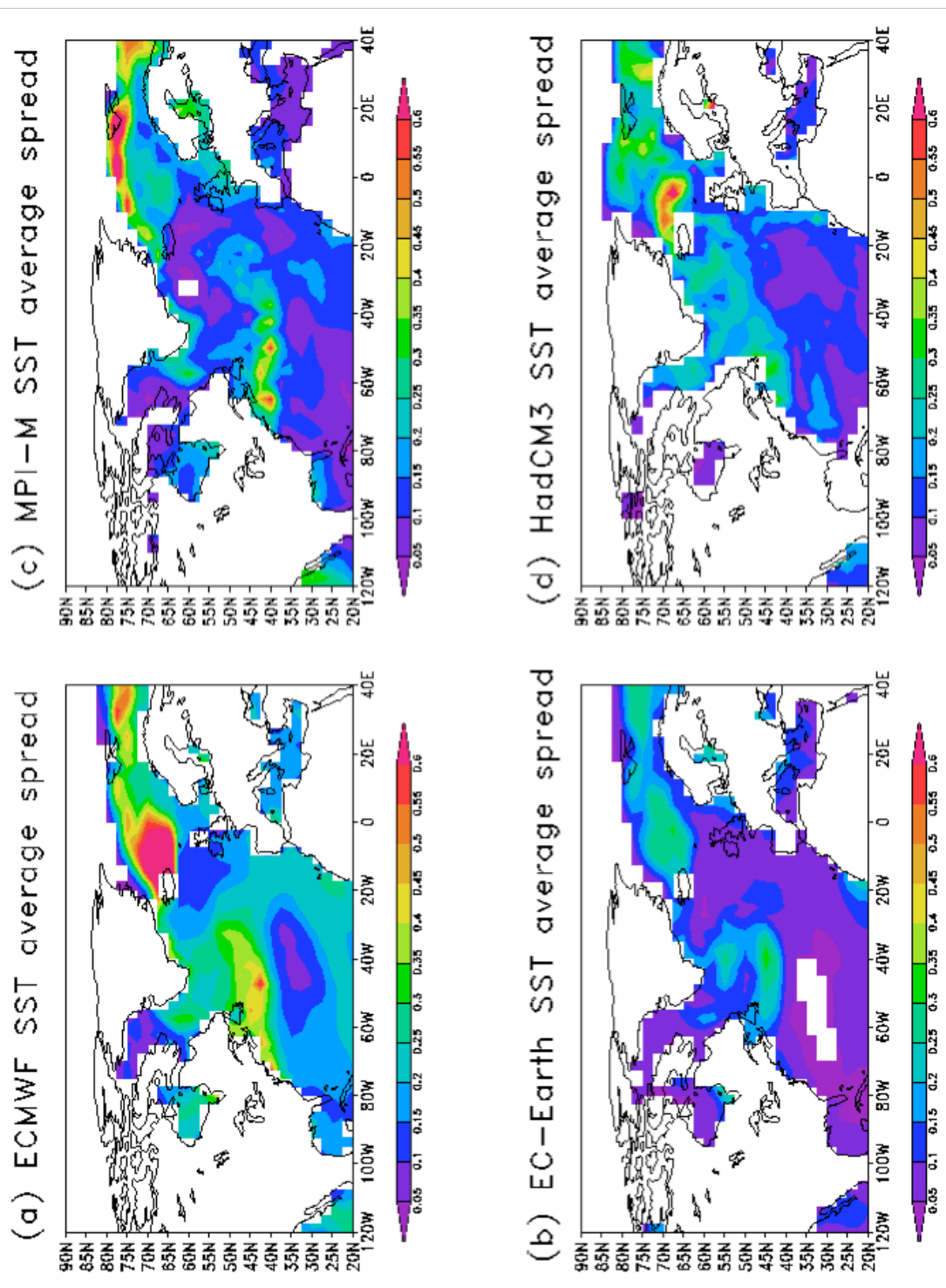


Figure SM1 Year-to-year variability of sea surface temperatures over the North Atlantic region (in K) in the reference simulations. (a) ECMWF, (b) EC-Earth, (c) MPI-M, (d) HadCM3.

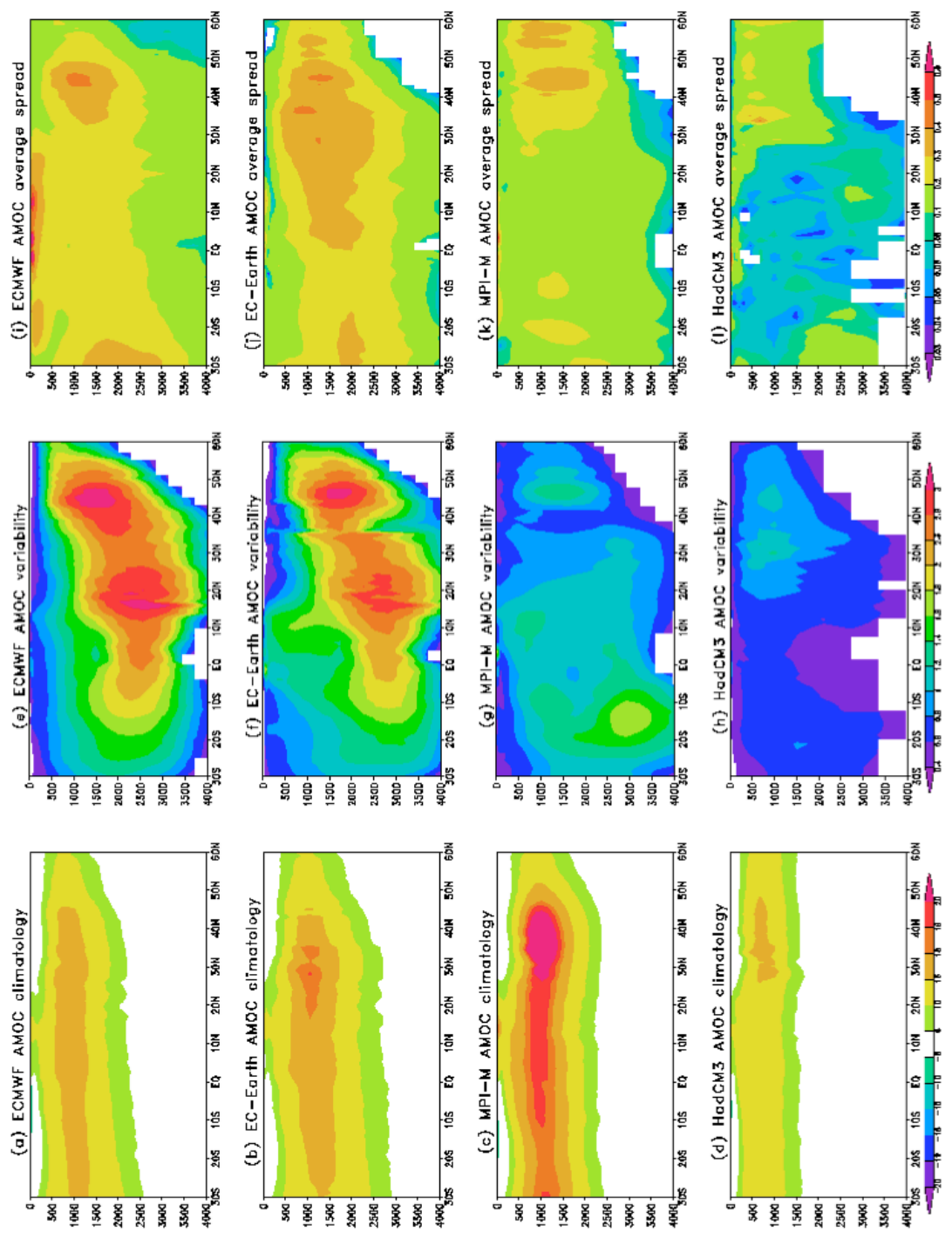


Figure SM2 Atlantic overturning stream function (in $Sv=10^6 m^3 s^{-1}$) as simulated in the reference integrations by ECMWF (a,e,i), EC-Earth (b,f,j), MPI-M(c,g,k) and HadCM3(d,h,l). First column: climatology. Middle column: year-to-year variability. Last column: average ensemble spread

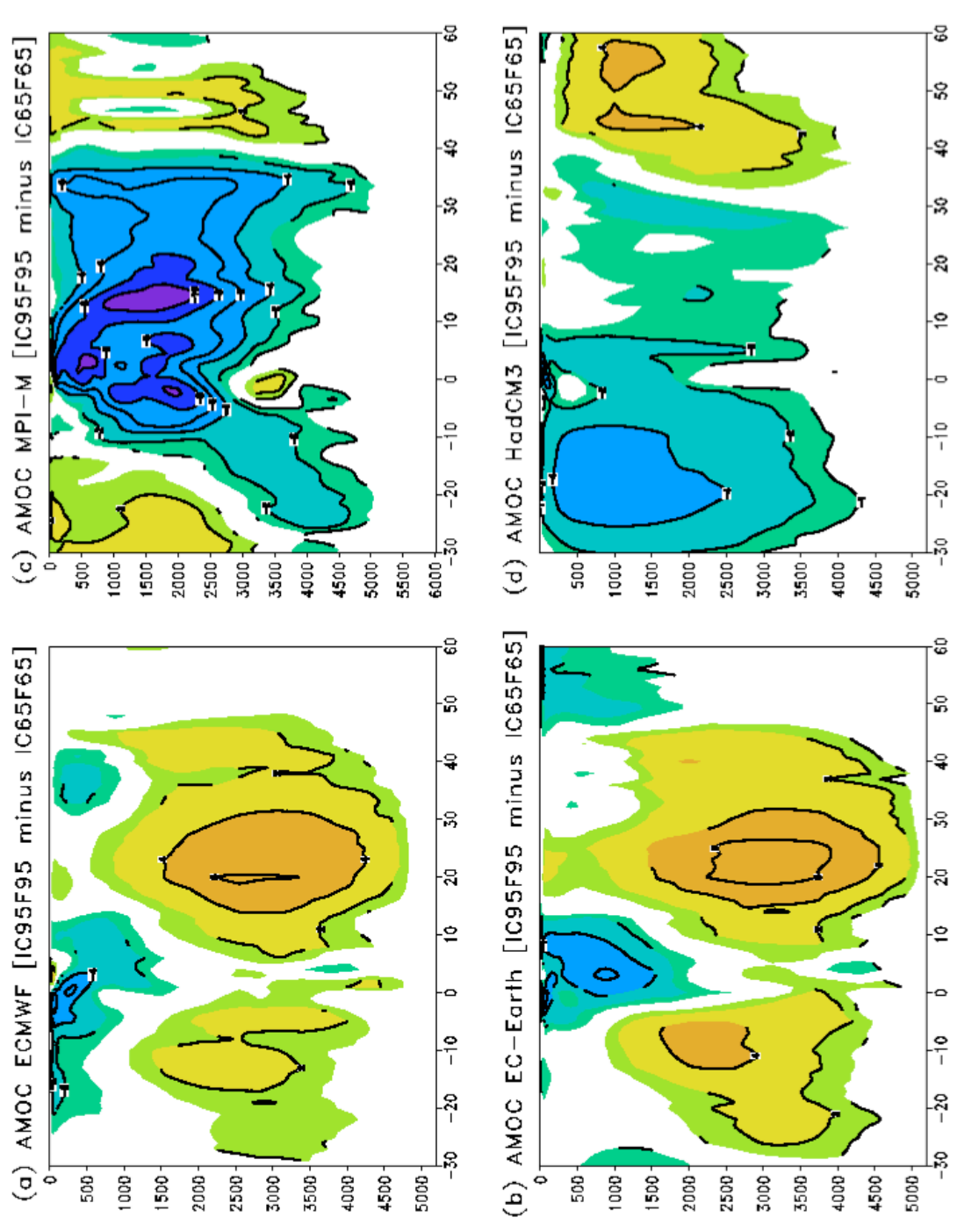


Figure SM3. Differences between the ensemble mean AMOC anomalies averaged over the first integration month (i.e. first month mean of decade 1995 minus first month mean of decade 1965). (a) ECMWF, (b) EC-Earth, (c) MPI-M, (d) HadCM3.

Units: $\text{Sv} = 10^6 \text{m}^3 \text{s}^{-1}$

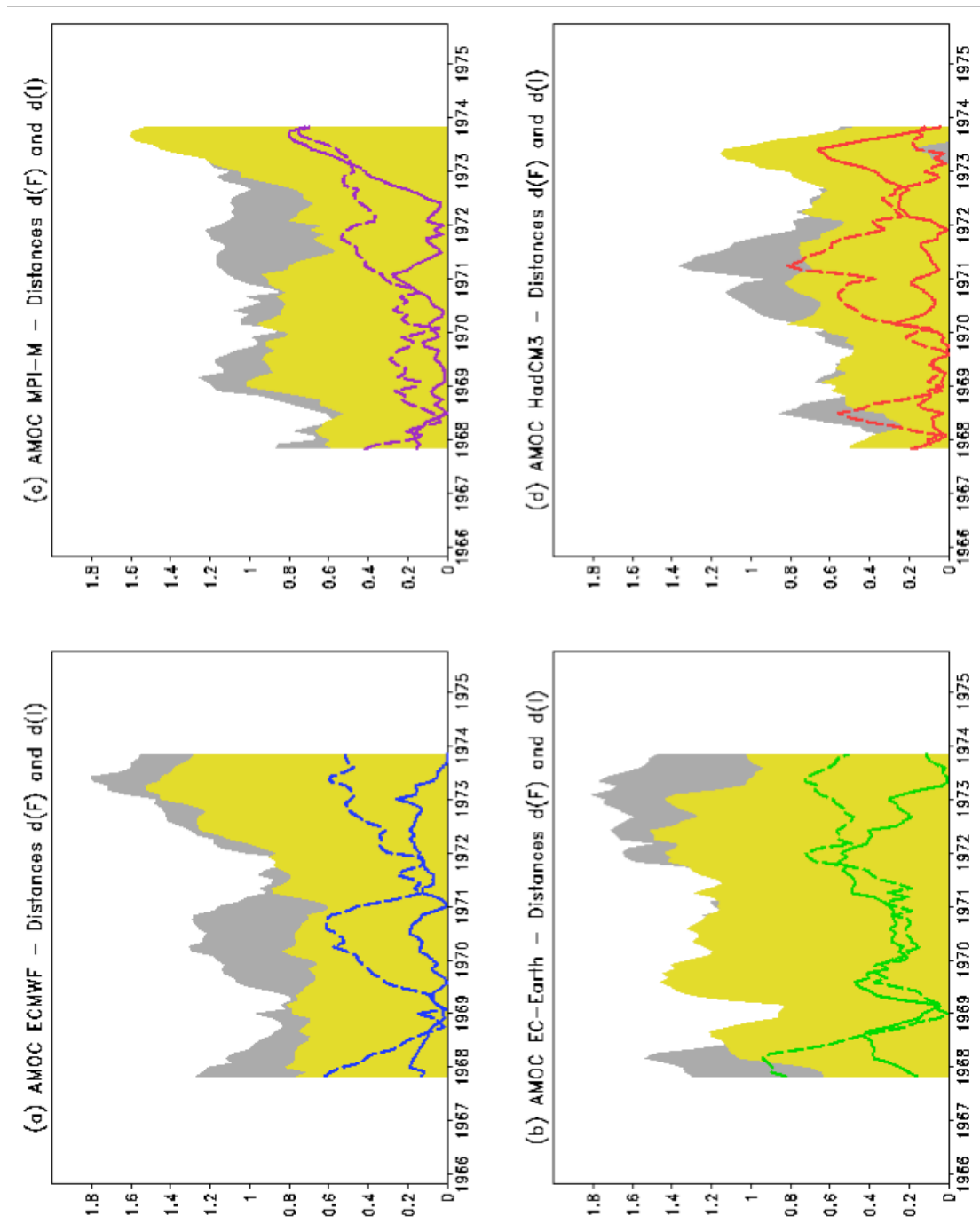


Figure SM4. Distances d_i for $|IC95F65-IC65F65|$ (solid) and d_f for $|IC65F95-IC65F65|$ (dashed) for AMOC at 1000 m depth and 26N for all models. The grey(yellow) shading represent the uncertainty associated to d_f (d_i) estimated from the ensemble spread. A 4-year running mean has been applied to d_f and d_i .

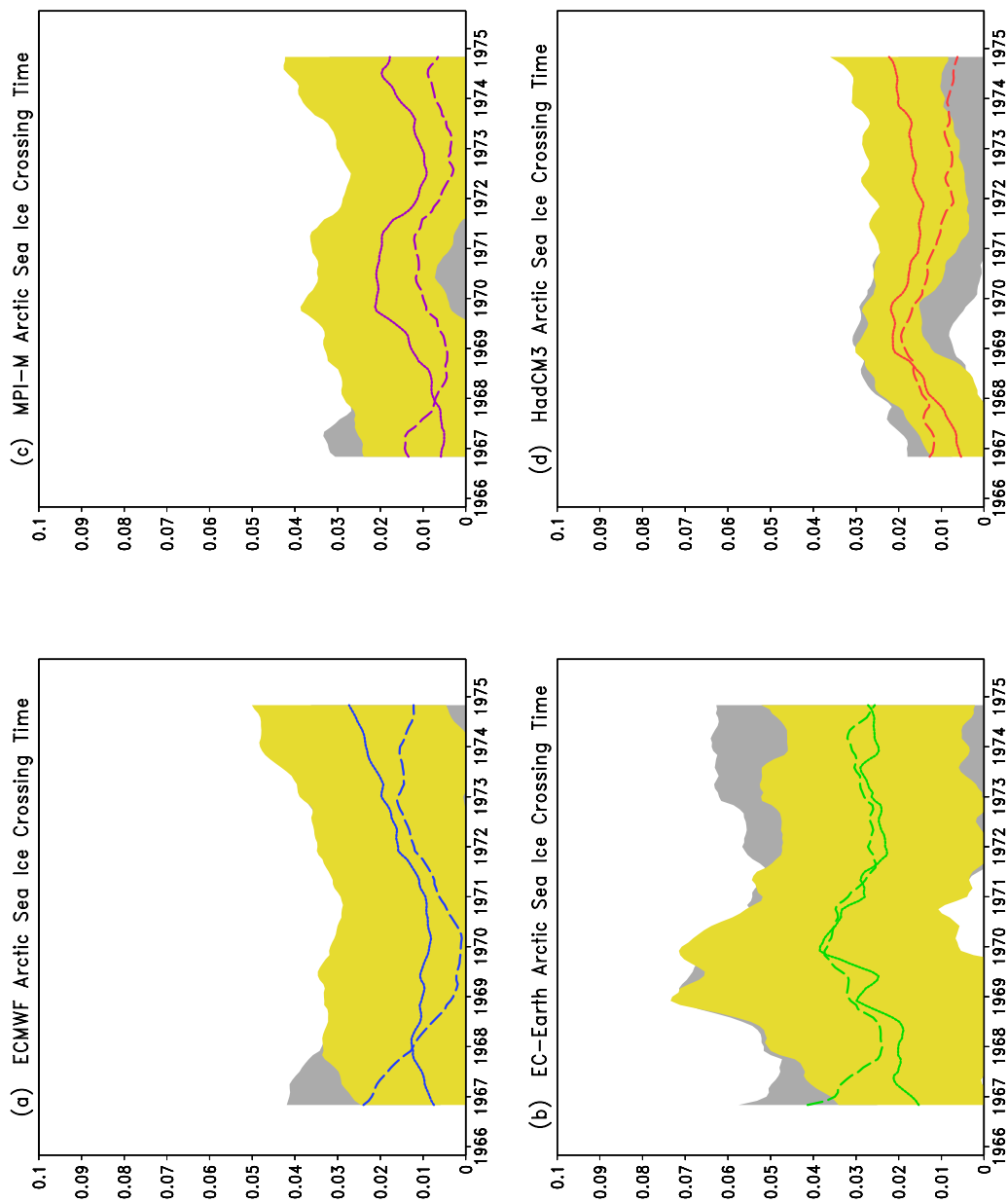


Figure SM5. Distances d_i for $|IC95F65-IC65F65|$ (solid) and d_f for $|IC65F95-IC65F65|$ (dashed) for Sea Ice Extension in the Arctic for all models. The gray(yellow) shading represent the uncertainty associated to d_f (d_i) estimated from the ensemble spread. A 2-year running mean has been applied to d_f and d_i

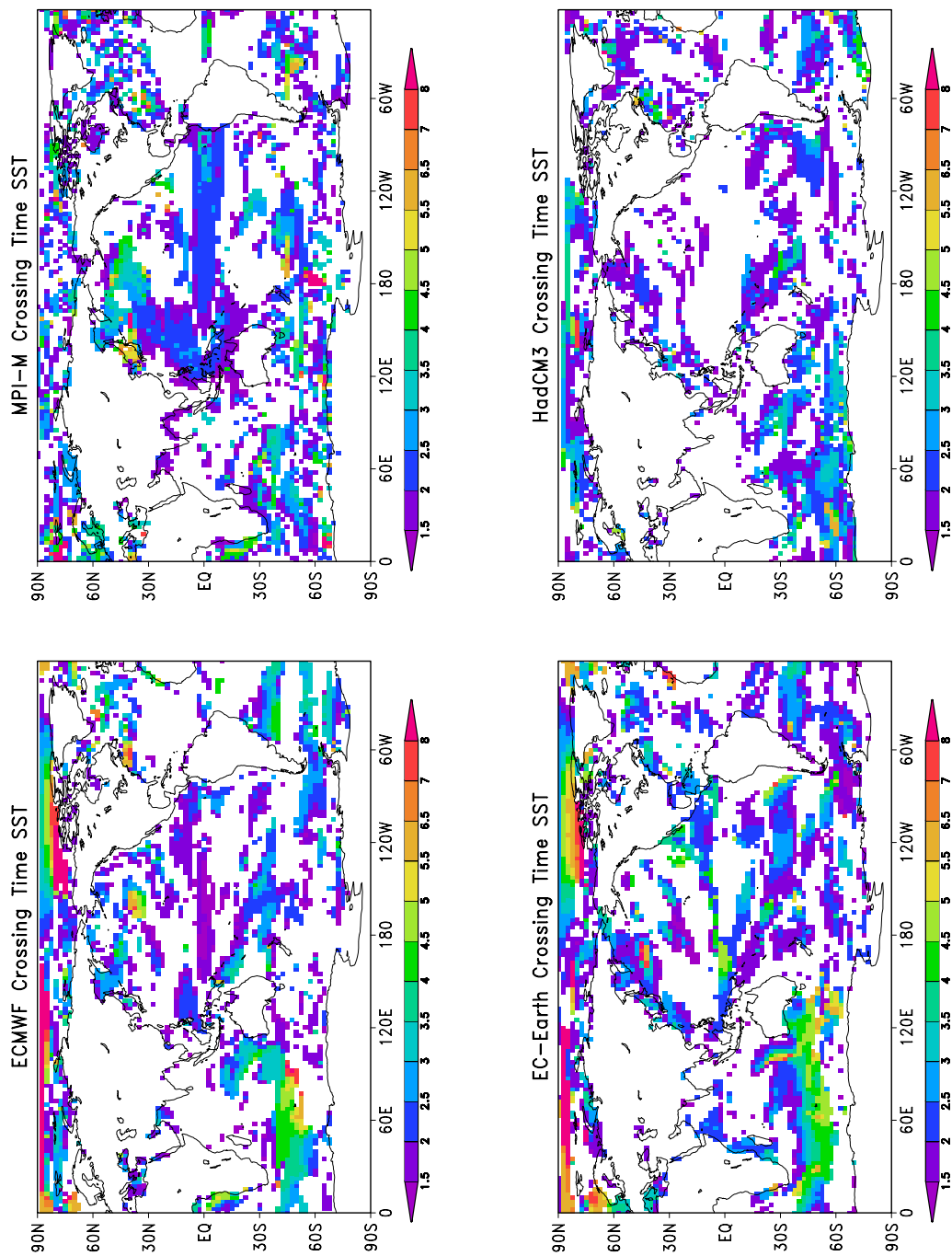


Figure SM6. Cross-over times for d_i for $|IC95F95-IC65F95|$ and d_f for $|IC95F95-IC95F65|$ for sea surface temperatures for all models. The crossing times are computed considering for each model the distances d_i and d_f of the ensemble means. The white regions correspond to cross-over times shorter than 2 years.