Supplemental Material for "Evolution of the Atlantic Multidecadal Variability in a model with an improved North Atlantic Current"

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ABSTRACT

This document contains supporting figures for the main document.

References

Ebisuzaki, W., 1997: A Method to Estimate the Statistical Significance of a Correlation When the Data Are Serially Correlated. *J. Climate*, **10 (9)**, 2147–2153, doi:10.1175/1520-0442(1997)010⟨2147:AMTETS⟩2.0.CO;2.

Rayner, N. A., D. E. Parker, E. B. Horton, C. K. Folland, L. V. Alexander, D. P. Rowell, E. C. Kent, and A. Kaplan, 2003: Global analyses of sea surface temperature, sea ice, and night marine air temperature since the late nineteenth century. *J. Geophys. Res.*, **108 (D14)**, 4407, doi:10.1029/2002JD002670.

LIST OF FIGURES

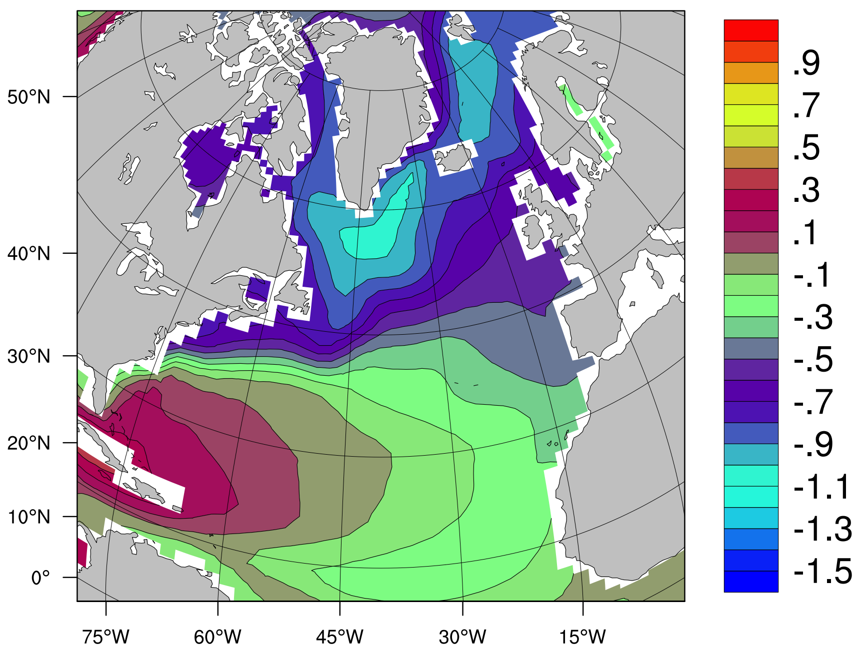


FIG. 1. Mean sea surface height (in m, model years 300–999). The global mean sea level is removed.

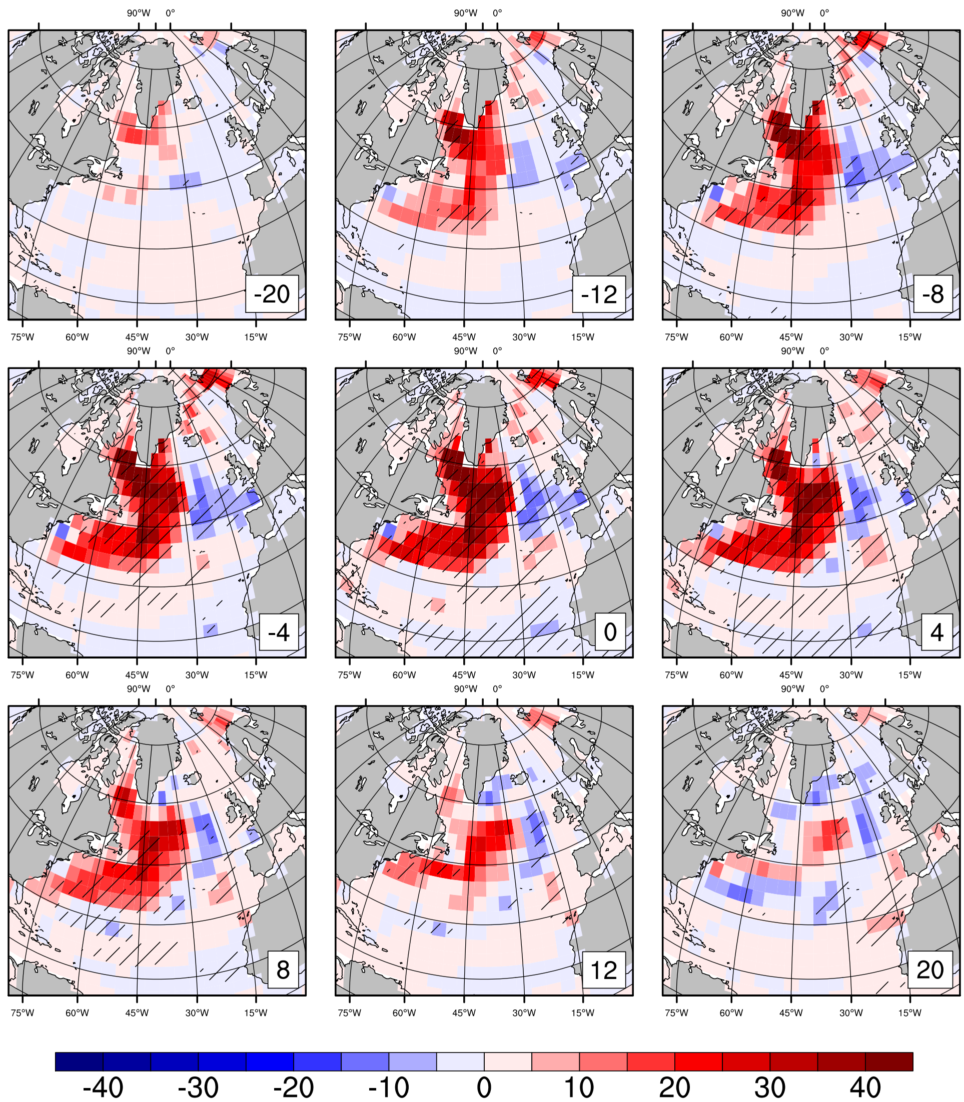


FIG. 2. Regression maps of surface turbulent (sensitive and latent) heat flux (positive into the atmosphere) on the AMV index at different lag times in years (same as Figure 6 in the main text). However, here, an 11 year running mean filter was applied to the data, instead of a 5 year low pass filter. Units are $\mathrm{Wm^{-2}K^{-1}}$. Hatching denotes that the correlation coefficients are significantly different from zero at the 95% level according to the method of Ebisuzaki (1997).

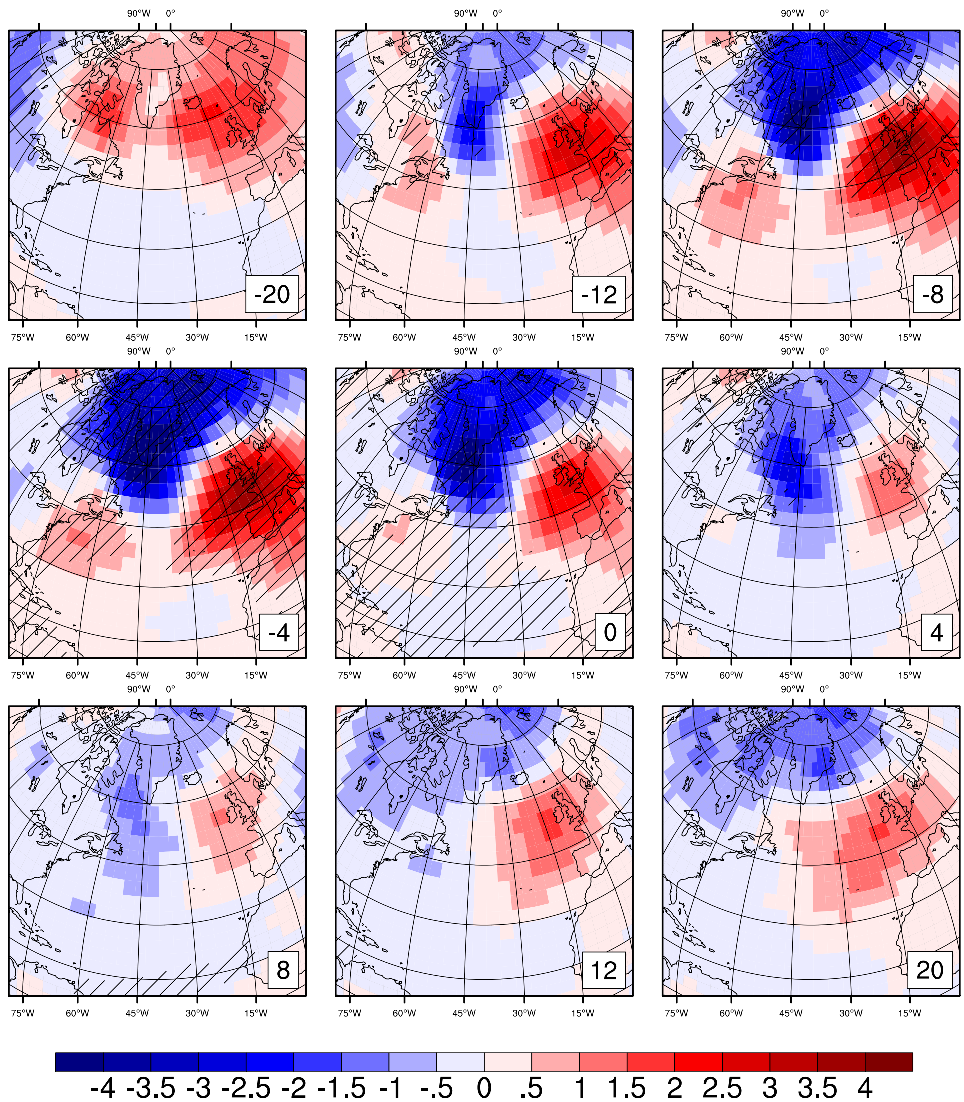


FIG. 3. Regression maps of winter (January-February-March) sea level pressure on the AMV index at different lag times in years (same as Figure 15 in the main text). However, here, an 11 year running mean filter was applied to the data, instead of a 5 year low pass filter. Units are hPa/K. Hatching denotes that the correlation coefficients are significantly different from zero at the 95% level according to the method of Ebisuzaki (1997).

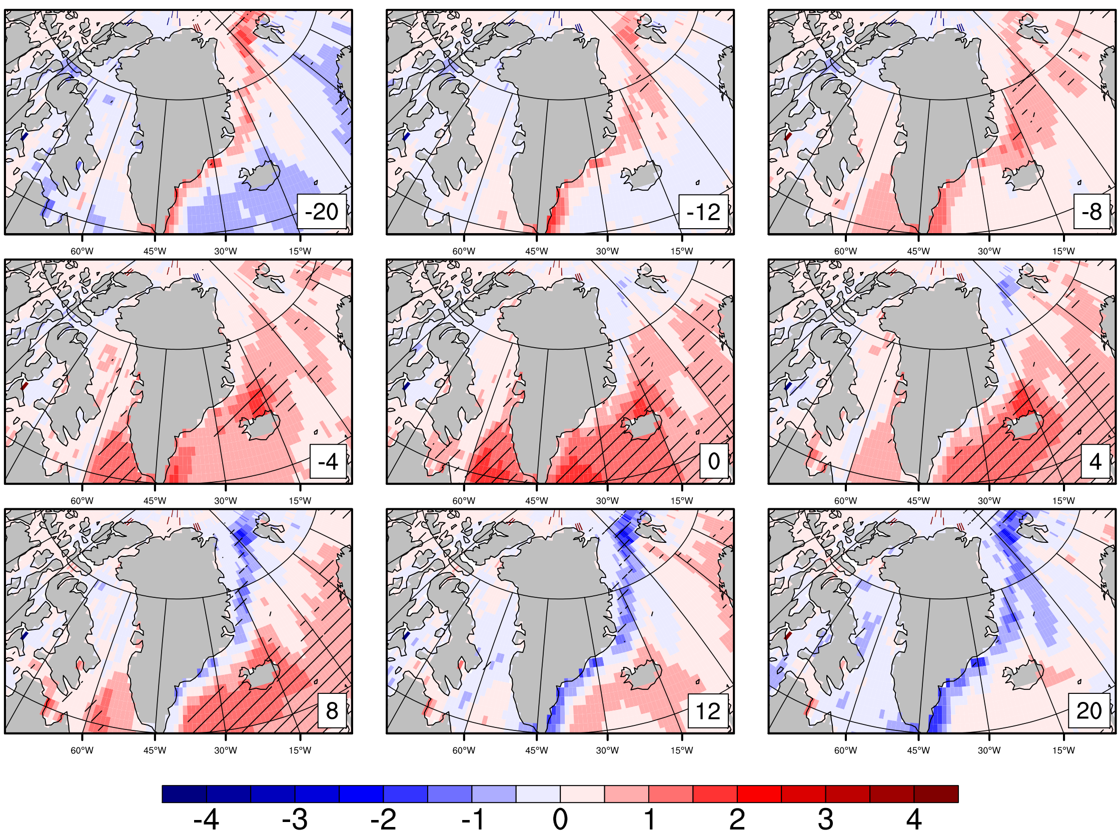


FIG. 4. Regression maps of SST on the AMV index at different lag times in years (same as Figure 3 in the main text). Here, a smaller region was chosen to highlight the East Greenland Current region.

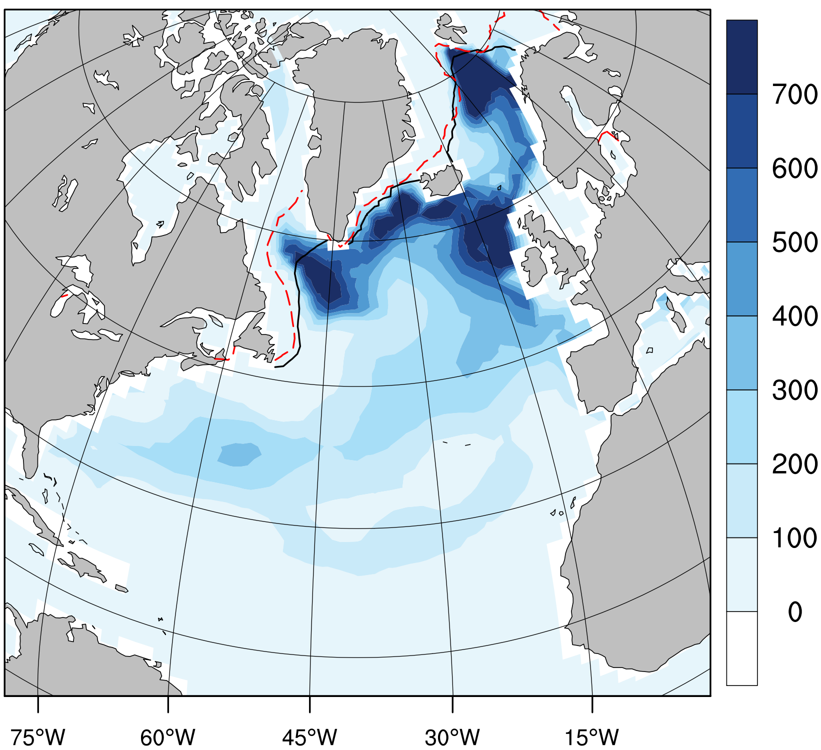


FIG. 5. Mean March mixed layer depth (blue colors, in meters) and 15% sea ice extent (black line) in the model (model years 300–999), and 15% sea ice extent from observations (red dashed line; HadISST, 1948–2013, Rayner et al. (2003)).

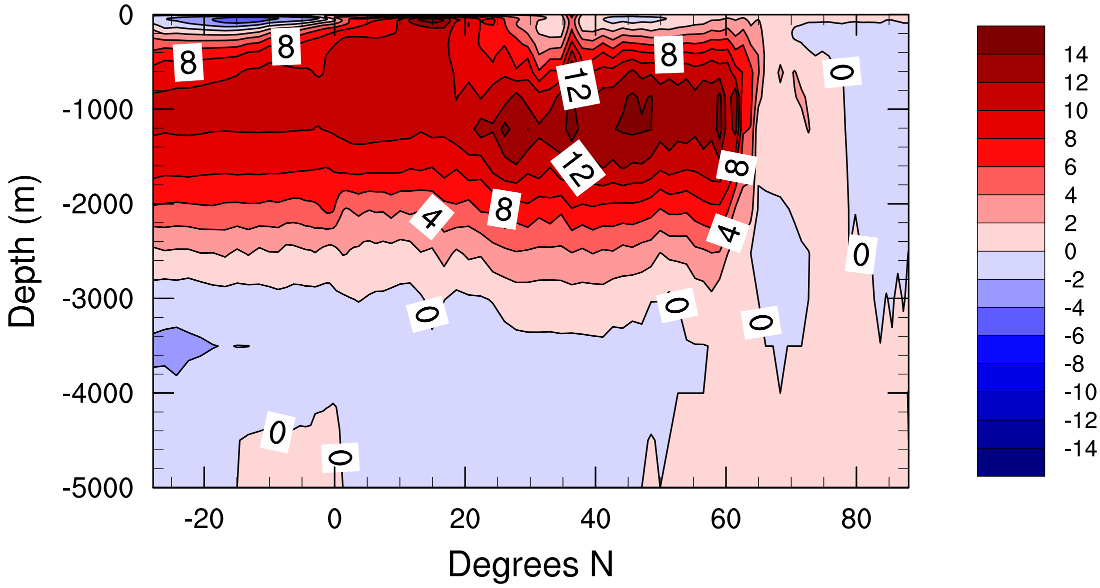
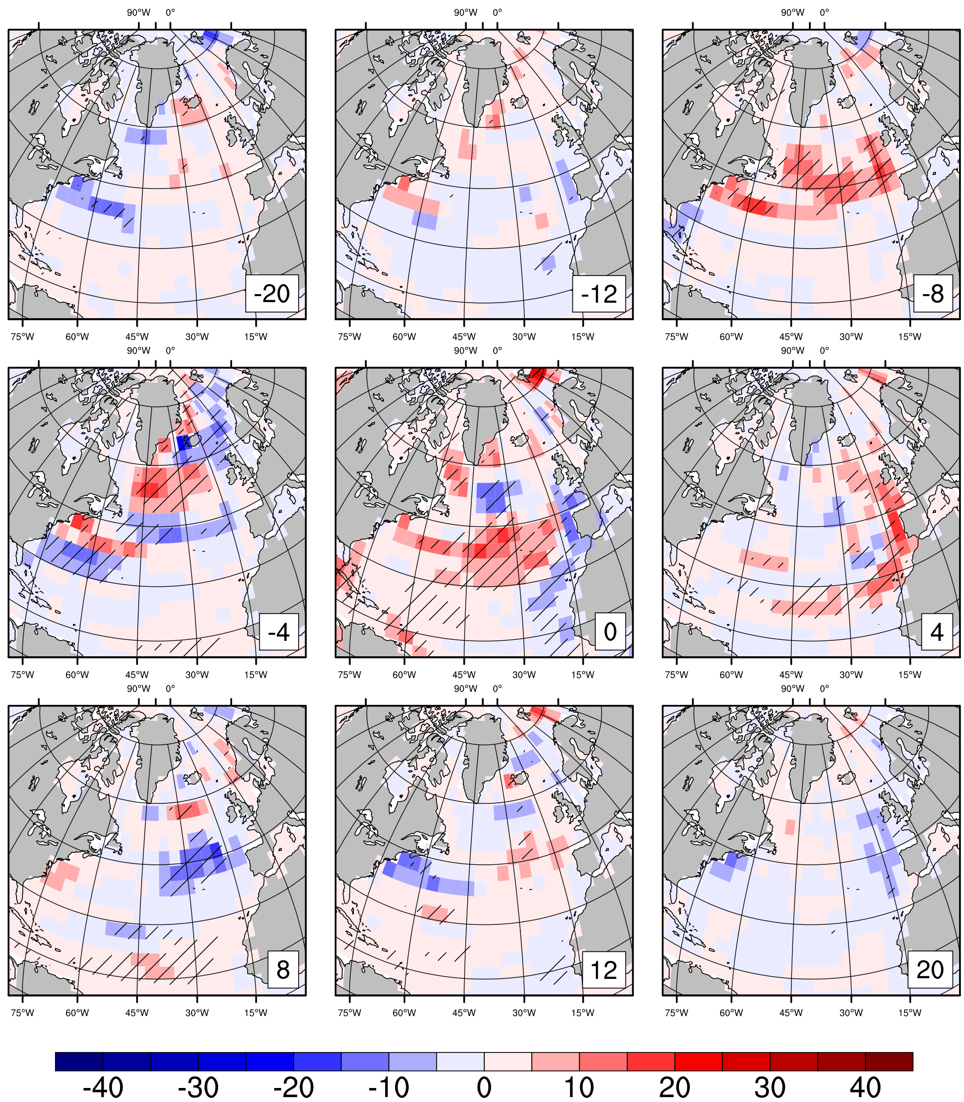


FIG. 6. Mean Atlantic Meridional Overturning streamfunction in the model (in Sv, model years 300–999).



65 FIG. 7. Regression maps of surface sensible and latent heat flux (positive into the atmosphere) from the uncorrected model on the AMV index at different lag times in years (same as Fig. 6 in the main text, but for the uncorrected model). Units are $Wm^{-2}K^{-1}$. Hatching denotes that the correlation coefficients are significantly different from zero at the 95% level according to the method of Ebisuzaki (1997). Note the striking difference between this plot and Figure 6 in the main text.

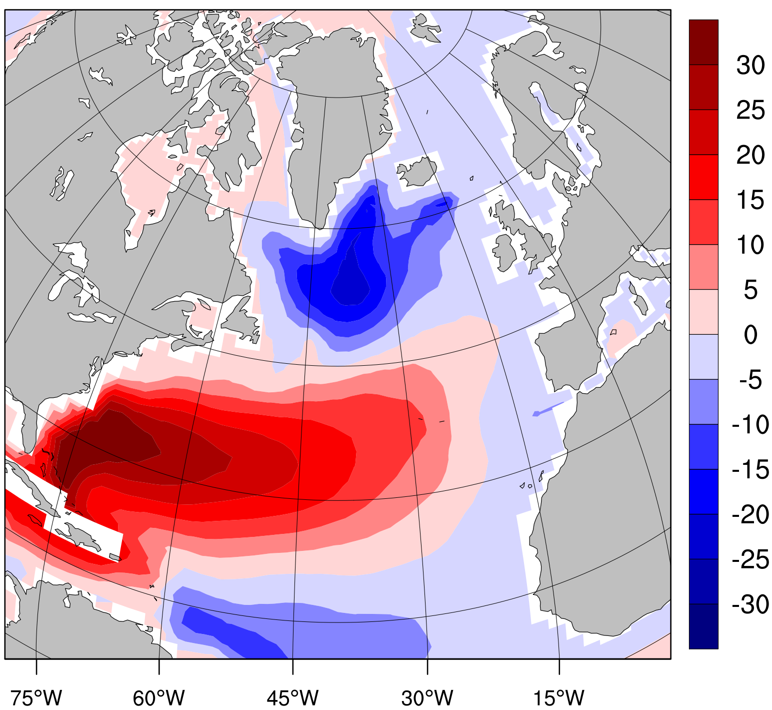


FIG. 8. Mean barotropic streamfunction in the model (in Sv, model years 300–999).

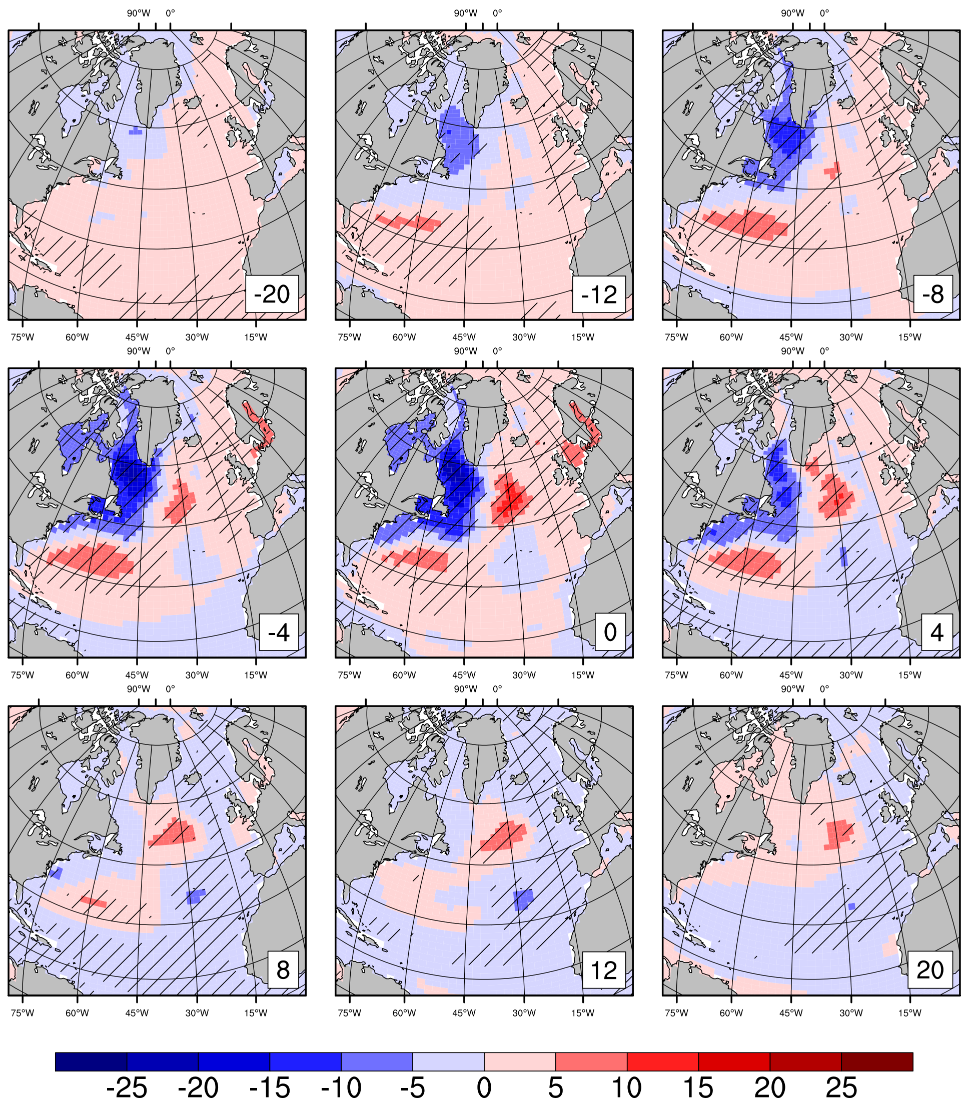


FIG. 9. Regression maps of sea surface height on the AMV index at different lag times in years. Units are cm/K. Hatching denotes that the correlation coefficients are significantly different from zero at the 95% level according to the method of Ebisuzaki (1997).