



North Atlantic decadal variability: deconstructing the SST tripole

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Decadal variability in the North Atlantic has been associated in the literature with a tripolar pattern of sea surface temperature (SST) anomalies that show one sign in the western midlatitudinal North Atlantic, and the opposite in the subpolar and tropical North Atlantic. In this study, the analysis of observed SST from 1870 to 2009 leads to the dissection of the SST tripole into two components, each with a different timescale in the decadal band, and different teleconnections in the Atlantic basin: while the subpolar and tropical poles present quasi-decadal variations of period about 9 years, essentially uncorrelated with other parts of the basin, the center of action in the western midlatitudes is characterized by a longer timescale of about 14 years and significant correlations with the tropical South Atlantic and the Norwegian and North Seas. The 9-yr period variations are associated with an atmospheric configuration resembling the East Atlantic pattern, whereas the 14-yr period fluctuations seem to be related to the North Atlantic Oscillation pattern. Each component also bears a different relationship with the decadal variability in the Pacific ocean.