Predictability of Atlantic SST Indices in CFSv2 Decadal Retrospective Forecasts

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Predictability of selected Atlantic SST indices in CFSv2 decadal retrospective forecasts (hereafter "forecasts") performed by NCEP and COLA are examined. These indices are 1) an area averaged SST over the North Atlantic (AMV index, related in observations to Atlantic multidecadal variability); 2) an SST difference index representing North Atlantic tripole variability; 3) an SST difference index representing the tropical Atlantic meridional mode.

The forecast indices are compared to the indices computed from the NCEP/NCAR reanalysis. The associated SST patterns and their evolutions as a function of lead time are found by regression and compared to the regressions from the reanalysis. The effect of volcanic forcing is documented by comparing volcano and no-volcano forecasts made at COLA.

The sensitivity to ocean analysis is examined by comparing the volcano-included forecasts made at NCEP using CFSR ocean initial conditions, and by COLA using interpolated NEMOVAR ocean initial conditions.