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Variability and Predictability of observed Atlantic sea surface temperatures

Laure Zanna
University of Oxford, Atm, Oceanic & Planetary Physics, Oxford, United Kingdom (laure.zanna@earth.ox.ac.uk)

A statistical model of Atlantic sea surface temperature (SST) anomalies was constructed using an empirical technique, namely linear inverse modeling (LIM), to fit and test a multivariate red noise model to the observed record. LIM was performed in the Atlantic basin extending from 30S to 66N using the observational record of annual averaged SST anomalies, which extends back to 1850. Using the statistical model, we will diagnose the different properties of the dynamical system and its forcing component, investigate the forecast skill of different climate indices based on SST anomalies in the Atlantic region, and explore the error characteristics of the forecasts. The development of regional statistical models, especially in the Atlantic sector, for decadal SST predictions can serve as a benchmark for current and future decadal climate predictions based on numerical models.