

Reconstructing the Atlantic Meridional Overturning Circulation Based on Sea Surface Temperatures

In this talk, I discuss the relation between the Atlantic Meridional Overturning Circulation (AMOC) and sea surface temperature (SST) in different coupled atmosphere-ocean models. A series of regression analyses are used to show that the small-scale SST structure that has predictive value in one climate model has little predictive value in other climate models. However, if the regression relation is restricted to the largest spatial structures that fit in the Atlantic basin, then a single reconstruction equation can be derived that gives skillful reconstructions across all coupled models. The resulting reconstruction model is then used to reconstruct the AMOC based on observed SSTs.