



Remote impact on tropical Atlantic climate variability

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The remote impact of tropical Pacific and North Atlantic climate forcing on the tropical Atlantic SST variability is assessed using both a traditional statistical correlation method and a model-aided dynamic method. Consistently, both assessment methods suggest about half of the total SSTA variance in the tropical Atlantic is caused by the remote impact at interannual and decadal time scales. In the mean time, our study suggests that dominant SST variability modes seem to originate internally in the tropical Atlantic climate system, and depends critically on local ocean-atmosphere coupling. These variability modes are enhanced significantly by the remote impact from the tropical Pacific and North Atlantic. Our model study also show some differences between the statistical and dynamic assessment methods, which may have some implications on the method of assessment as well as the dynamics of the system.