



Understanding Regional Climate Variations and Trends over North America

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Predictability of regional climate changes will depend on the mechanisms that produce regional differences in the responses to climate forcings, as well as on the ability of models to correctly simulate the key physical processes. This presentation summarizes findings from a US Global Change Research Program report and subsequent studies aimed at attributing the causes of patterns of recent North American climate change. First, regional and seasonal differences are identified in climate trends across North America over the past several decades. Climate models are then employed to help understand causes of the differences. Patterns of sea surface temperature changes are shown to play an important role in explaining regional differences in North American climate variations and trends. The results suggest that the ability to predict regional patterns of climate change over North America will depend substantially on the predictability of patterns of sea surface temperature change.